

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

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

Filed by the Registrant

Filed by a Party other than the Registrant

Check the appropriate box:

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

Axcelis Technologies, Inc.

(Name of Registrant as Specified in Its Charter)

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

Payment of Filing Fee (Check the appropriate box):

- No fee required.
 - Fee paid previously with preliminary materials.
 - Fee computed on table in exhibit required by Item 25(b) per Exchange Act Rules 14a6(i)(1) and 0-11.
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**NOTICE OF ANNUAL MEETING OF STOCKHOLDERS
to be Held May 10, 2022**

The 2022 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 Tuesday, May 10, 2022 for the following purposes:

1. To elect as directors ten nominees to serve until the 2023 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, 2022.
3. To approve, by an advisory vote, the 2021 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 24, 2022 will be entitled to vote at the annual meeting or at any adjournment.

By order of the Board of Directors,

Dated: March 31, 2022

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 2022 annual meeting of stockholders to be held on Tuesday, May 10, 2022 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 31, 2022. 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.

Currently, Axcelis is implementing social distancing practices at our headquarters to curtail the spread of the coronavirus that causes Covid-19, including a requirement to wear masks over the nose and mouth. Our policies and governmental regulation of business activities continue to evolve. Please note that we may modify the location or format of the 2022 annual meeting if deemed advisable or necessary, including, weather permitting, meeting outside. If the address or time of the meeting changes, we will issue a press release announcing the change.

Important Notice Regarding the Availability of Proxy Materials for the Stockholder Meeting to Be Held on May 10, 2022: This proxy statement and our Annual Report to Stockholders are available on our website at: www.axcelis.com/proxy.html.

Who can vote. You may vote your shares of Axcelis common stock at the annual meeting if you were a stockholder of record at the close of business on March 24, 2022. On that date, there were 33,182,547 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.

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 election of ten directors (eight directors who were re-elected at the 2021 annual meeting, and two directors who were elected by the Board in February 2022, subject to their re-election by the stockholders at the 2022 annual meeting); an advisory vote to ratify the selection of independent auditors for the Company; and an advisory vote on our 2021 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 ten nominees as directors.	Each nominee must receive a plurality of the votes cast.	FOR ALL 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 2022.	This non-binding proposal will be considered approved if more votes are cast in favor than against.	FOR ratification
Approval of the 2021 compensation of our named executive officers as described under “Executive Compensation” in this proxy statement.	This non-binding proposal will be considered approved if more votes are cast in favor than against.	FOR approval

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 2021 executive compensation, we do not know of any other proposals that may be presented at the 2022 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.

SHARE OWNERSHIP OF 5% STOCKHOLDERS

The following table shows the amount of our common stock beneficially owned as of December 31, 2021 by persons known by us to own more than 5% of our common stock.

Beneficial Owner (1)	Shares Owned	Percent of Class
BlackRock, Inc. (2) 55 East 52 nd Street, New York, NY 10055	5,011,615	15.1%
The Vanguard Group (3) 100 Vanguard Blvd., Malvern, PA 19355	2,672,916	8.0%
PRIMECAP Management Company (4) 177 E. Colorado Blvd., 11th Floor, Pasadena, CA 91105	2,094,870	6.3%

- (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, 2021 (33,229,807 shares).
- (2) Based on a Schedule 13G/A filed with the Securities and Exchange Commission (the "SEC") in January 2022 reporting on ownership as of December 31, 2021. 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 4,960,444 shares and sole dispositive power of all the shares reported in the table.
- (3) Based on a Schedule 13G filed with the SEC in February 2022 reporting on ownership as of December 31, 2021. This filing reports on beneficial ownership of The Vanguard Group. The report states that The Vanguard Group has sole voting power over no shares, shared voting power over 63,324 shares, sole dispositive power over 2,583,014 shares and shared dispositive power over 89,902 shares.
- (4) Based on a Schedule 13G/A filed with the SEC in February 2022 reporting on ownership as of December 31, 2021. This filing states that PRIMECAP Management Company is a registered investment adviser. According to the Schedule 13G, PRIMECAP Management Company has sole voting power and sole dispositive power over all of 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 24, 2022 (the record date for the 2022 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 24, 2022	Shares Subject to Exercisable Rights to Acquire as of May 23, 2022 (4)	Total Shares Beneficially Owned	Percent of Class
Non-Executive Directors				
Tzu-Yin Chiu	26,474	1,410	27,884	*
Richard J. Faubert	45,936	—	45,936	*
Arthur L. George, Jr.	58,936	—	58,936	*
Joseph P. Keithley	22,686	—	22,686	*
John T. Kurtzweil	34,439	—	34,439	*
Jeanne Quirk	—	—	—	*
Thomas St. Dennis	22,936	—	22,936	*
Jorge Titingier	17,451	—	17,451	*
Dipti Vachani	—	—	—	*
Named Executive Officers				
Mary G. Puma (2)	284,315	37,697	332,012	*
Kevin J. Brewer	17,736	14,617	32,353	*
Russell J. Low	37,533	10,522	48,056	*
Lynnette C. Fallon	18,468	9,431	27,899	*
William Bintz	28,311	10,377	38,688	*
All current Executive Officers and Directors as a Group (15 persons) (3)				
	621,066	93,197	714,263	2.15%

* 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 23, 2022 (60 days after March 24, 2022) 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 24, 2022 (33,182,547 shares), plus any shares that person could acquire upon the exercise of any options or other rights on or before May 23, 2022. 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 spouse.
- (3) In addition to the directors and NEOs, these totals include 5,845 shares owned by one other

executive officer on March 24, 2022, and 9,143 shares issuable to the executive officer on restricted stock units expected to vest on or before May 23, 2022.

- (4) The shares subject to exercisable rights to acquire as of May 23, 2022 include, for the executive officers, shares issuable on restricted stock units vesting in May 2022, 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

2021 Annual Meeting Vote Results

In 2021, the average vote in favor of the election of our Board nominees was 98.8%. This approval level was up slightly from the 98.2% support our Board received in 2020. Also at our 2021 annual meeting, 98.3% of votes were cast for approval of the advisory vote on the Company's 2020 executive compensation (commonly referred to as "Say-on-Pay"). We believe that this voting result reflects stockholder support for our executive compensation decisions.

2021 Stockholder Outreach

Routine Investor Relations. We rely on a variety of regular and special disclosure documents and investor relations activities to ensure that our stockholders understand our performance, our potential, our governance policies and compensation practices. 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. Our investor website is a regularly updated repository of investor relations material, including press releases, links to SEC filings, investor presentations, governance documents, including all committee charters and our governance guidelines. See <https://investor.axcelis.com/>

During 2021, in addition to our routine quarterly earnings calls and follow up meetings, Axcelis attended one in-person investor conference in San Francisco and, because of the Covid-19 restrictions, participated in ten virtual investor conferences. The Company also held a virtual investor day in December 2021.

Key 2021 Investor Messages. Following on a strong year in 2020, the semiconductor equipment industry saw remarkable additional growth in 2021, despite the global Covid-19 pandemic. Axcelis had a number of important accomplishments in 2021:

- Axcelis' revenue grew approximately 40% year over year;
- Our full year revenue, gross margins and operating profit were all at record levels since we became an independent company in 2001;
- The market for mature semiconductor devices grew rapidly, producing greater than 80% of our systems shipments, while the electrification of the automotive market drove the power device and image sensor markets to contribute approximately 50% of our systems revenue;
- Our global footprint in growing markets continued to expand, including through multiple evaluations at key customers in memory and advanced logic, our Purion product extensions in the Silicon Carbide market, follow-on orders for our 300mm products in Japan, and device qualification for leading edge CMOS Image Sensor processes; and
- We were able to rapidly grow our manufacturing and supply chain capabilities through smart capacity planning and execution, including the opening of our new Axcelis Asia Operations Center in South Korea and the expansion of clean manufacturing in Beverly.

In addition to messaging related to our financial performance, Axcelis also shares with investors our commitment to achieving diversity of gender, ethnicity and other personal characteristics in both our workforce and our Board of Directors. We have increased disclosures in these areas and intend to continue to take steps to meet the expectations of the investment community. See below under "*Responsiveness to Stockholder Interest in Diversity and Inclusion Issues.*"

Support for Stockholder Interest in Executive Compensation Decisions. Axcelis seeks to maintain investor confidence that our executive compensation is both (i) set at an appropriate level for each position, and (ii) structured to drive behavior to optimize business results. As in the past, the Axcelis Compensation Committee ensured our 2021 executive compensation programs were aligned with market benchmarking and business strategies. Axcelis' 2021 executive compensation programs are discussed in detail under *Executive Compensation—2021 Compensation Discussion and Analysis* below. It is essential that the peer group used for compensation benchmarking is appropriate and robust, and in 2020, our Compensation Committee worked with Pearl Meyer & Partners, an independent compensation consultant ("Pearl Meyer"), to add two new members to our compensation peer group, offsetting the loss of prior peers through consolidation. Pearl Meyer was then engaged to update our executive officer compensation benchmarking in October 2020, which was used to make 2021 compensation decisions.

Responsiveness to Stockholder Interest in Environmental, Safety and Governance Issues. Axcelis recognizes that many investors are interested in aspects of corporate management relating to environmental, safety, labor, and other governance matters. We are committed to being responsive to this interest, and have increased our disclosures in these areas and intend to continue to take steps to meet the expectations of the investment community.

Our response to these areas begins with our Corporate Social Responsibility policy, in which we state our commitment to the recognition and safeguarding of human rights in all the countries in which we operate. Axcelis' Corporate Social Responsibility Policy is guided by the United Nations' Universal Declaration of Human Rights and is reflective of our Ethical Business Conduct at Axcelis Policy, our Environmental Policy and our commitment to a safe and humane workplace, as evidenced in many of our Human Resources policies. At the same time, we respect the sovereignty of nations throughout the world and affirm their primary responsibility to protect their citizens' human rights. We seek to do business with those partners—customers, suppliers and contractors—who share the same commitment to human rights that we have. We have adopted a Supplier Code of Conduct which requires our vendors to adopt the principles in our Corporate Social Responsibility policy and to cascade these commitments down their supply chain.

In 2021, we published our third Annual Report on Environmental and Safety Concerns. In this report, we continued to provide disclosures that align with certain aspects of The Climate Disclosure Standards Board framework, and the Sustainability Accounting Standards Board ("SASB") guidance, using the SASB Semiconductors Standard.

As noted in our Annual Report on Environmental and Safety Concerns, the Board of Directors oversees Axcelis' Environmental, Health and Safety risks and Climate Change risks using our Enterprise Risk Management (ERM) system. The ERM system is a method by which management assists our Board in meeting its risk oversight responsibility. Annually, management seeks to accurately identify risks that influence our business and rank them by potential severity and by the existence of risk factors beyond the Company's control. Risks with higher severity, or greater uncontrollable factors, are re-assessed by management on a quarterly basis. Climate Change risk is separately identified from Environmental and Occupational Health and Safety compliance risks, given its higher uncontrollable factors. Trends and mitigation actions on these higher risks are reported to the Board quarterly.

The policies and reports discussed above are available under both the "About Us" and "Investors" pages on our website at Axcelis.com. Key corporate governance policies are outlined below under *Corporate Governance—Governance Policies.*

Responsiveness to Stockholder Interest in Diversity and Inclusion Issues. Board and workforce diversity have become a major focus of institutional investor stewardship functions, Nasdaq, proxy advisory firms, and some state legislatures. Axcelis is committed to being responsive to

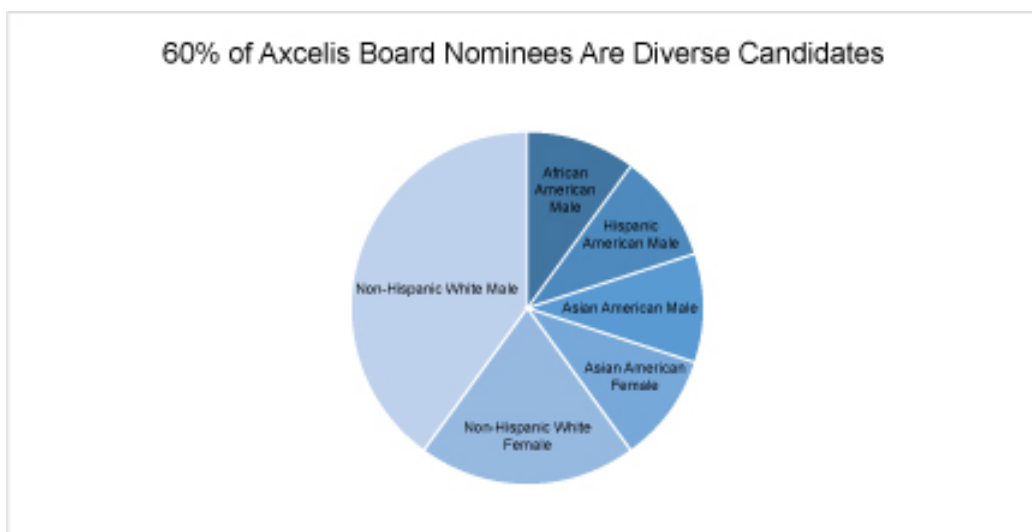
this interest. We have increased disclosures in these areas and intend to continue to take steps to meet the expectations of the investment community.

As stated in our Corporate Social Responsibility policy, Axcelis is committed to achieving diversity of gender, ethnicity and other personal characteristics. Axcelis seeks to hire and retain employees in a manner that supports a diverse workplace. We have a strong policy against discrimination based on personal characteristics, and required biennial training on this topic for all employees, and specialized training for managers.

In 2021, we published our second “Focus on Diversity” report, which includes disclosures on the diversity of our workforce, leadership and Board. The report also sets out Axcelis’ initiatives to increase diversity and ensure inclusion. In 2021, for the first time, we shared our five year goals, established in 2020, to increase the number of women and under-represented minorities in our workforce. This report is available under both the “About Us” and “Investors” pages on our website at Axcelis.com.

Our work to improve our diversity, equity and inclusion is overseen by our Compensation Committee, as part of our Axcelis Talent Review processes, which is reflected in the charter of the Compensation Committee as amended in 2020.

Our Nominating and Governance Committee seeks to be responsive to stockholder interest in racial, ethnic and gender representation at the Board level. We value the diversity of experience and perspective gained through a Board that reflects the diversity of the global community of our workforce and customers. We have for several years disclosed the gender and racial/ethnic composition of our Board. Axcelis’ Board diversity compares favorably to other companies, based on The Conference Board’s 2021 report on Corporate Board Practices, which states that 79% of Russell 3000 directors are white/Caucasian and 75.6% male. At Axcelis, white non-Hispanic male directors represent only four out of ten nominees, or 40% of our nominees for the 2022 Annual Meeting:



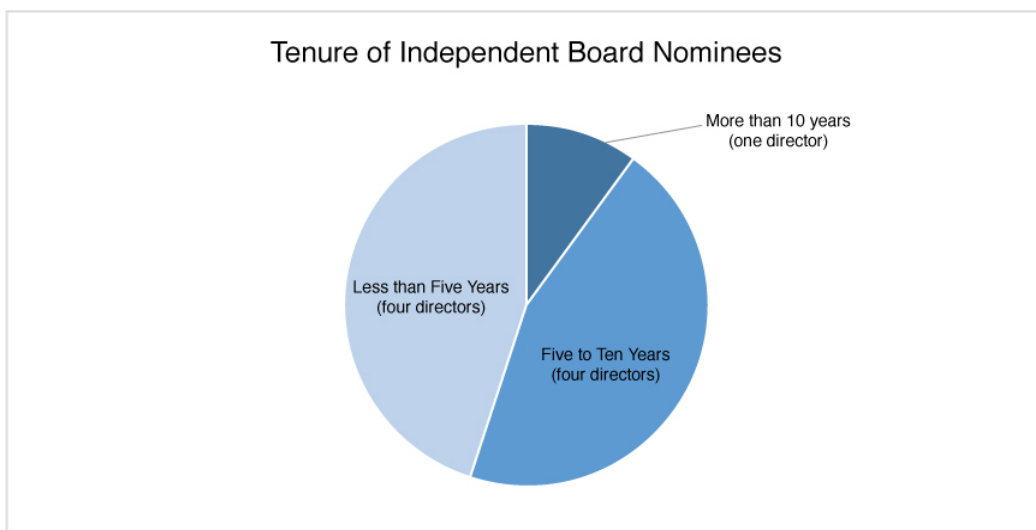
Outcome of Outreach Efforts and Investor Interest. We find our direct interaction with investors extremely informative and valuable, and we are very appreciative of the time that our investors took to speak with us. We also value the expressions of interest from investors and other participants in the investment community on environmental, social and governance topics, including diversity and inclusion, and appreciate the communication of their priorities.

PROPOSAL 1: ELECTION OF DIRECTORS

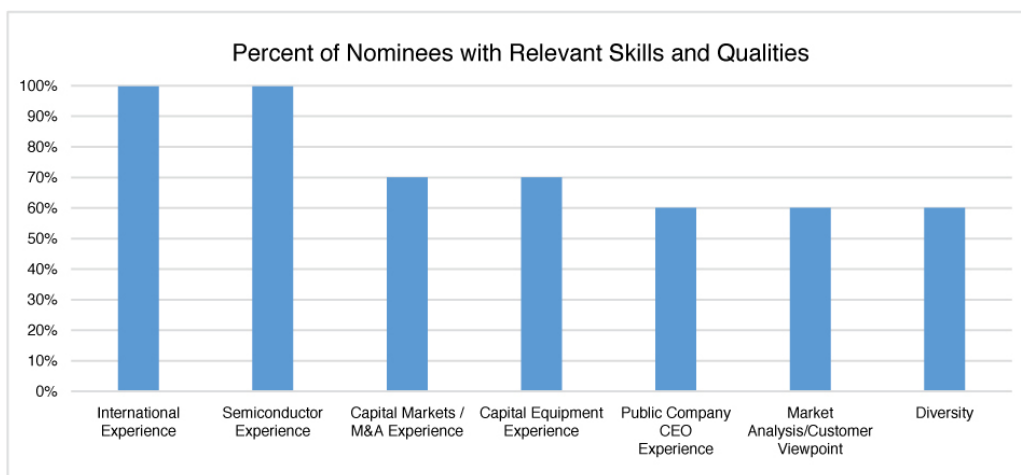
In February 2022, our Board of Directors expanded the Board to ten, and elected Jeanne Quirk and Dipti Vachani to the Board, with terms ending at the 2022 annual meeting. Our Board of Directors is nominating all of the current directors for re-election at the 2022 annual meeting.

Each nominated director will, if elected, hold office for a term of one year until our annual meeting in 2023 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 ten Axcelis nominees. The nine independent nominees represent a balance of long tenured and newer directors with a strong mix of relevant experience. Axcelis’ Nominating and Governance Committee and Board have evaluated each of the Axcelis nominees against the factors and principles Axcelis uses to select nominees for director discussed below under “Corporate Governance—Board Nomination Process and Requirements.”

All but one of the independent director nominees joined the Board in the last ten years, with an average tenure of five years:



Our director nominees bring a strong mix of relevant experience, as shown in the chart below:



In addition to our nominees' experience-based skills, we are proud of the diversity represented by the slate of nominees. Mr. George is African American, Mr. Titingier is Hispanic American, and Dr. Chiu and Ms. Vachani are Asian Americans. Ms. Quirk, Ms. Vachani and our CEO and Board member, Mary Puma, are women. As disclosed in the charts under "*Stockholder Engagement—Responsiveness to Stockholder Interest in Diversity and Inclusion Issues*" above, white non-Hispanic men represent only four out of ten nominees, or 40% of our nominees for election at the 2022 Annual Meeting. The chart below provides this information in a format specified by Nasdaq:

Board Diversity Matrix as of March 31, 2022					
Board Size:					
Total Number of Directors					10
Gender:	Male	Female	Non-Binary	Gender Undisclosed	
Number of directors based on gender identity	7	3			
Number of directors who identify in any of the categories below:					
African American or Black	1				
Alaskan Native or American Indian					
Asian	1	1			
Hispanic or Latinx	1				
Native Hawaiian or Pacific Islander					
White	4	2			
Two or more Races or Ethnicities					
LGBTQ+					
Did Not Disclose Demographic Background					

Based on this evaluation of the current Board members, our Nominating and Governance Committee and Board have concluded that it is in the best interests of Axcelis and its stockholders that each of the proposed nominees listed below be elected to serve as a director of Axcelis for a one year term.

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:

2022 NOMINEES FOR ELECTION TO THE BOARD OF DIRECTORS

Tzu-Yin (“TY”) Chiu: director since 2018, age 65***Business Experience and Other Directorships***

Dr. Tzu-Yin Chiu has served as President of National Silicon Industry Group, since April 2020 (“NSIG”). NSIG is the parent company of Zing Semiconductor Corporation, a provider of high-quality semiconductor wafer research and development, production and sales, of which Dr. Chiu has served as Chief Executive Officer since May 2019. Dr. Chiu retired as the non-executive Vice Chairman of Semiconductor Manufacturing International Corporation (“SMIC”), a leading semiconductor foundry in China, in July 2018. Dr. Chiu served in that position following his retirement as SMIC’s CEO in May 2017, a position he assumed in August 2011, at which time he also joined the SMIC Board. Between 2009 and 2011, Dr. Chiu served as Chief Executive Officer of Hua Hong Semiconductor Limited (known as “HHNEC”), a global, leading pure-play foundry, headquartered in China. 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. Dr. Chiu worked at AT&T/Bell Labs from 1984 to 1996, as the head of the High Speed Electronics Department and Silicon Research Operations Department. 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 Board of Directors of EverDisplay Optronics (Shanghai) Co., Ltd.; the Engineering Advisory Board of University of California, Berkeley; and the external Advisory Board of Tsinghua-Berkeley Institute.

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. Dr. Chiu has served on the Technology and New Product Development Committee and the Nominating and Governance Committee since his election in May 2019.

Richard J. Faubert: director since 2015, age 74***Business Experience and Other Directorships***

Richard J. Faubert has served as Chairperson of the Board of Directors of the Company since May 2018. He 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 Chairperson of the Board and as an independent 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 served on the Nominating and Governance Committee and the Technology and New Product Development Committee from his election to the Board in May 2015 until May 2018, when he was elected as Chairperson of the Board, and moved from the Nominating and Governance Committee to the Compensation Committee. He remains on the Technology and New Product Development Committee. The Board highly values Mr. Faubert's contributions in these roles.

Arthur L. George, Jr.: director since 2014, age 60***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 serves on the Board of Directors of Nordson Corporation, a manufacturer of precision dispensing equipment for industrial liquid and powder coatings, adhesives, and sealants. Mr. George joined the Board of Directors of Circor International, a manufacturer of flow and motion control products in 2021.

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 New Product Development Committee since May 2014. He served as the Chairperson of the Technology and New Product Development Committee from August 2017 until May 2020, when he became Chairperson of the Compensation Committee. The Board highly values Mr. George's contributions in these roles.

Joseph P. Keithley: director since 2011, age 73***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 was a director of Nordson Corporation from 2001 to November 2020, serving as the non-executive Chairman of the Board from 2010 until 2018. Nordson is a manufacturer of precision dispensing equipment for industrial liquid and powder coatings, adhesives, and sealants. Mr. Keithley also served 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 from 1997 until 2018.

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 New 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 65***Business Experience and Other Directorships******Experience, Qualifications and Attributes***

Mr. Kurtzweil is an independent consultant. From July 2017 to November 2018, Mr. Kurtzweil served as the Chief Financial Officer of Akoustis Technologies, Inc., an RF filter semiconductor company. 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, when he became Chief Financial Officer of Akoustis, and for Meru Networks, Inc. from May 2015 to July 2015 when the company was sold. Mr. Kurtzweil joined the Board of Directors of SkyWater Technology, Inc. in October 2020. SkyWater is a US semiconductor foundry specializing in custom technology development services and volume manufacturing for integrated circuits and micro devices.

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 \$2.0 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 Chairperson 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 64***Business Experience and Other Directorships Experience, Qualifications and Attributes***

Ms. Puma is Axcelis' Chief Executive Officer and President. Ms. Puma also served as Chairperson 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, a manufacturer of precision dispensing equipment for industrial liquid and powder coatings, adhesives, and sealants, and of Semiconductor Equipment and Materials International (SEMI), a global industry association serving the manufacturing supply chain for the micro- and nano-electronics industries.

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.

Jeanne Quirk: director since 2022, age 52***Business Experience and Other Directorships Experience, Qualifications and Attributes***

Ms. Quirk is the Senior Vice President, Mergers and Acquisitions, for TE Connectivity, a position she has held since 2015. TE Connectivity (formerly known as Tyco Electronics Ltd.) is a manufacturer of connectivity and sensor solutions for a variety of industries including automotive, industrial equipment, data communication systems, aerospace, defense, oil and gas, energy and medical. Between 2013 and 2015, Ms. Quirk served as the Vice President, Strategy and Business Development for TE's Industrial Solutions segment, with responsibility for partnering with the leadership team to identify and execute organic and inorganic growth initiatives. Since joining TE in 2000, she held a variety of leadership positions in M&A and integration, including leading TE's M&A and divestiture efforts from 2007 through 2013. Prior to joining TE, Ms. Quirk worked at PricewaterhouseCoopers for 10 years where she assisted a broad range of strategic buyers and financial sponsors with their acquisitions. Ms. Quirk is not currently serving on any other public company Boards.

Ms. Quirk has over 30 years' experience in the electronics industry, focused on inorganic growth, which is an area of interest for the Company. Ms. Quirk has served on the Audit Committee and the Nominating and Governance Committee since her election in February 2022. The Board highly values her contributions in these roles.

Thomas St. Dennis: director since 2015, age 68***Business Experience and Other Directorships***

Thomas St. Dennis is the non-executive Chairperson of FormFactor, Inc., a leading provider of semiconductor wafer test technologies and expertise, a position he assumed in 2016. Previously, Mr. St. Dennis served as FormFactor's Executive Chairperson 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 semiconductor capital equipment manufacturer. 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.

Experience, Qualifications and Attributes

Mr. St. Dennis's prior experience in the semiconductor equipment industry as well as his extensive international business background 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 New Product Development Committee since his election to the Board in May 2015. Beginning in May 2020, Mr. St. Dennis was appointed Chairperson of the Technology and New Product Development Committee. The Board highly values his contributions in these roles.

Jorge Titinger: director since 2019, age 60***Business Experience and Other Directorships***

Mr. Titinger serves as principal of Titinger Consulting, a private consulting and advisory service provider founded by Mr. Titinger in 2016. Beginning in 2012, Mr. Titinger served as President and Chief Executive Officer of Silicon Graphics International Corp., a producer of computer hardware and software, which was acquired by Hewlett Packard Enterprise in 2016. From 2008 to 2011, Mr. Titinger served in various offices at Verigy Ltd., a provider of semiconductor automatic test equipment, ending as President and Chief Executive Officer in 2011. Prior to his service at Verigy, Mr. Titinger held executive positions with FormFactor, Inc. from 2007 to 2008, and KLA-Tencor Corporation from 2002 to 2007. Mr. Titinger served as a director of Xcerra Corporation, a provider of semiconductor and electronics test products and services from 2012 until it was acquired by Cohu, Inc. in 2018. Mr. Titinger currently serves as a director of FormFactor, a leading provider of semiconductor wafer test technologies and expertise, and CalAmp Corp., a provider of mobile resource management telematics systems, software and subscription services for the Internet of Things market.

Experience, Qualifications and Attributes

Mr. Titinger's prior experience in the semiconductor industry as well as his extensive international business background make him an effective advisor to the Board regarding strategic and marketing issues. His experience and skills are highly valued by our Board. On his election in 2019, Mr. Titinger joined the Audit Committee and the Compensation Committee. The Board highly values his contributions in these roles.

Dipti Vachani: director since 2022, age 48***Business Experience and Other Directorships******Experience, Qualifications and Attributes***

Ms. Vachani is the Senior Vice President, General Manager, Automotive and Embedded Line of Business for Arm Limited, a position she has held since 2018. Arm Limited is a designer of energy-efficient system-on-a-chip central processing units for cell phones and other applications including automotive, artificial intelligence and internet of things applications. From 2015 to 2018, Ms. Vachani was VP, General Manager of Intel Corporation's Internet of Things Group. Prior to Intel, Ms. Vachani was VP, General Manager, Power and Lighting Display at Skyworks Solutions beginning in 2013. Ms. Vachani held various program and product line positions at Texas Instruments, Inc. from 2001 to 2013, ending as VP, General Manager, Single Core Processors. Ms. Vachani is not currently serving on any other public company Boards.

Ms. Vachani has over 25 years' experience in the semiconductor industry, most recently focused on automotive and internet of things applications, important areas for many Axcelis customers. Ms. Vachani has served on the Technology and New Product Development Committee and the Compensation Committee since her election in February 2022. The Board highly values her contributions in these roles.

BOARD OF DIRECTORS

Board of Directors Independence and Meetings

The Board of Directors has determined that the nominees for election in 2022, other than Ms. Puma, are independent under the criteria established by Nasdaq. None of the directors, to the Company's knowledge, had any business, financial, family or other type of relationship in 2021 with the Company or its management (other than as a director and stockholder of the Company), except for 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. Mr. Kurtzweil joined the Board of Directors of SkyWater Technology, Inc. in October 2020. Its subsidiary, SkyWater Technology Foundry, Inc., a US semiconductor foundry, is a customer of Axcelis. Axcelis' transactions with SkyWater are carried on in an arms-length commercial relationship, and 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 at Axcelis. The amount the Company received from SkyWater in each 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), which standard would apply if Mr. Kurtzweil was an executive of SkyWater, which he is not. 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—2021 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 2021. Independent directors have regularly scheduled executive sessions at which only independent directors are present. None of our Board members attended less than 75% of the 2021 Board meetings and of those committees of which a director is a member. No directors failed to attend any 2021 Board meeting or committee meeting of which the director is a member, and accordingly, the average rate of attendance at such 2021 meetings was 100%. Due to the Covid-19 pandemic, none of our Board members attended the annual meeting in 2021; only the Corporate Secretary and two other shareholders were present. All of the shares voted on the proposals at the 2021 annual meeting were represented through proxy voting. Given the possibility that Covid-19 related travel and social distancing restrictions may continue through the date of the 2022 annual meeting, it is possible that nominated Board members will not attend the 2022 annual meeting of stockholders in person, although it is currently expected they will do so.

Board of Directors Leadership Structure

Mr. Faubert has been Chairperson of the Board of Directors since May 2018. He is an independent director (as defined in the listing standards for the Nasdaq Stock Market), as required for the Chairperson position by our Governance Guidelines. Our Governance Guidelines enumerate the responsibilities of the Chairperson. 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 Chairperson, 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 most of the duties of the Chairperson of the Board.

Chairperson’s Responsibility for an Annual Evaluation of the CEO

A critical responsibility of the Chairperson 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 Chairperson, but currently involves the following steps:

- Annually, after the close of a fiscal year, the CEO submits a self-evaluation to the Chairperson;
- The Chairperson discusses the self-evaluation with the CEO and solicits input from other Directors in one-on-one conversations; and
- The Chairperson consolidates the CEO self-evaluation with Board feedback and communicates the Board’s evaluation to the Chief Executive Officer at the first Board meeting of the new fiscal year.

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.

2021 Director Cash Compensation. Non-employee director cash compensation in effect in 2021 was set on July 1, 2020. Non-employee director compensation is approved by the full Board of Directors on the recommendation of the Nominating and Governance Committee. The current retainers for each category of director service are set at approximately the median for each category, as shown in an April 2020 Pearl Meyer report using a peer group of companies identical to the roster used to benchmark executive compensation in 2020.

Our non-employee director cash compensation effective July 1, 2020 consists solely of annual cash retainers, paid quarterly in advance, in accordance with the following schedule:

Board Member Retainer	\$60,000
Independent Chairperson Premium	\$50,000
Committee Chairpersons Retainers	
Audit Committee Chairperson	\$25,000
Compensation Committee Chairperson	\$15,000
Nominating and Governance Committee Chairperson	\$10,000
Technology and New Product Development Committee Chairperson	\$10,000
Other Committee Member Retainers	
Audit Committee Member	\$10,000
Compensation Committee Member	\$ 7,500
Nominating and Governance Committee Member	\$ 5,000
Technology and New Product Development Committee Member	\$ 5,000

The Company has entered into Indemnification Agreements with each of the non-employee directors, which are in the same form as the Indemnification Agreements with each of the Company's executive officers. Axcelis' Indemnification Agreements are intended to provide protection from legal liability arising from the individual's service as a director to the extent typically provided by U.S. public companies. The Company indemnifies its non-employee directors to the fullest extent permitted by law with respect to his or her status or activities as a director of Axcelis against all judgments, fines, amounts paid in settlement, and all reasonably incurred expenses. These Indemnification Agreements supplement the indemnification provisions in the Company's Restated Certificate of Incorporation. As required in the Indemnification Agreements, the Company purchases director and officer liability insurance that would reimburse the Company for costs incurred under the Indemnification Agreements and for certain third party liabilities. In addition, the Company maintains "Side A" director and officer liability insurance, which is for the exclusive benefit of the directors and officers, permitting direct reimbursement from the insurer if the Company was unable or unwilling to provide indemnification due to a lack of funds or another issue. The adequacy of our director and officer liability insurance coverage is reviewed, and adjusted if needed, on an annual basis.

Non-employee directors also receive reimbursement of reasonable and customary out-of-pocket expenses incurred in attending Board and committee meetings. In May 2020, the Nominating and Governance Committee adopted an Axcelis Board of Directors Expense Reimbursement Policy to standardize and clarify our reimbursement practices. Travel by directors to Axcelis Board meetings, or otherwise on Company business, is covered by our standard business travel insurance, which provides emergency medical coverage. Non-employee directors do not receive any Company-paid perquisites.

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

2021 Equity Awards. On February 25, 2021, upon recommendation of the Nominating and Governance Committee and the Compensation Committee, the full Board of Directors approved the grant to each of the non-employee directors, effective May 17, 2021, of restricted stock units ("RSUs") valued at \$150,000. This amount was consistent with the 2020 value for non-employee director RSUs, and was approximately the median annual equity compensation for our peer group as reported in an April 2020 Pearl Meyer benchmarking report. The number of units was determined by dividing \$150,000 by a 30-day average closing price of the Company's common stock over a period ending May 12, 2021, which was \$42.89. In accordance with this formula, each non-employee director received a RSU exercisable for 3,497 shares of common stock. Using the grant date closing price of \$38.16, each director RSU grant had a value of \$133,446. These RSU grants became fully vested on November 17, 2021 (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 2021:

Name	Fees earned or paid in cash (\$)	Stock awards (\$)(1)(2)(3)	Total (\$)
Tzu-Yin Chiu	\$ 70,000	\$ 133,446	\$203,446
Richard J. Faubert	\$ 122,500	\$ 133,446	\$255,946
R. John Fletcher(4)	\$ 29,063	\$ —	\$ 29,063
Arthur L. George, Jr.	\$ 80,000	\$ 133,446	\$213,446
Joseph P. Keithley	\$ 80,000	\$ 133,446	\$213,446
John T. Kurtzweil	\$ 92,500	\$ 133,446	\$225,946
Thomas St. Dennis	\$ 75,000	\$ 133,446	\$208,446
Jorge Titinger	\$ 77,500	\$ 133,446	\$210,946

- (1) The amount shown represents the grant date fair value of the equity awards received by the director in 2021 determined in accordance with the assumptions described in the Stock Award Plans and Stock-Based Compensation note to the Company's 2021 Financial Statements included in the Company's Annual Report on Form 10-K filed with the Securities and Exchange Commission.
- (2) The stock awards reflect the grant date fair value of 3,497 RSUs granted to each of non-employee directors elected on May 12, 2021. These awards vested as to 100% of the RSUs on November 17, 2021. At December 31, 2021, Dr. Chiu held 1,410 unvested RSUs, which will vest in May 2022, and Mr. Titinger held 4,230 unvested RSUs, of which 2,115 shares will vest on each of August 15, 2022 and 2023.
- (3) None of the non-employee directors received stock option grants in 2021. No non-employee director held stock options at year end 2021.
- (4) Mr. Fletcher retired from the Board in May 2021.

BOARD COMMITTEES

Our Board has standing Audit, Compensation, Nominating and Governance, and Technology and New Product Development committees, each of which has a Chairperson 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 New Product Development Committee
<ul style="list-style-type: none"> •John T. Kurtzweil, Chairperson •Joseph P. Keithley •Jeanne Quirk •Jorge Titinger 	<ul style="list-style-type: none"> •Arthur L. George, Jr., Chairperson •Richard J. Faubert •John T. Kurtzweil •Jorge Titinger •Dipti Vachani 	<ul style="list-style-type: none"> •Joseph P. Keithley, Chairperson •Tzu-Yin Chiu •Jeanne Quirk •Thomas St. Dennis 	<ul style="list-style-type: none"> •Thomas St. Dennis, Chairperson •Tzu-Yin Chiu •Richard J. Faubert •Arthur L. George, Jr •Dipti Vachani

When Ms. Quirk and Ms. Vachani were elected to the Board in February 2022, they were each assigned to two Board committees, as shown above. Committee membership is reviewed by the Board annually after each annual meeting.

Audit Committee

The Audit Committee operates under a written charter, and is responsible for assisting the Board of Directors in monitoring and oversight of (1) the integrity of the Company's financial statements and its systems of internal accounting and financial controls and (2) the independence and performance of the Company's independent auditors and any internal auditors engaged by management or the Audit Committee. The Audit Committee has adopted procedures for the handling of complaints regarding accounting, internal controls and auditing matters which are described in our Ethics policy. The Audit Committee's charter, material on ethics reporting and other governance material is available on this link <https://investor.axcelis.com/corporate-governance/governance-overview>.

During 2021, the Audit Committee consisted of Mr. Kurtzweil (Chairperson), Mr. Keithley, Mr. Fletcher (until his retirement in May 2021), and Mr. Titinger. The Board of Directors determined that each of Messrs. Keithley, Kurtzweil, Fletcher and Titinger 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.

The Audit Committee plays a key role in oversight of the Company's Enterprise Risk Management processes, as well as taking responsibility for oversight of specific risks, such as the Company's management of cybersecurity threats. See "*Corporate Governance—Risk Oversight by the Board of Directors*" below.

For a report on the Audit Committee's actions during 2021, see the "*2021 Audit Committee Report*" below.

2021 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 preliminary quarterly and annual financial statements and prior to the public release of financial results for the period. The Committee met in May, August and November of 2021, prior to the release of the financial results for the first, second and third quarters of 2021, respectively, and in February 2022, prior to the release of our fourth quarter and 2021 year-end results. The Audit Committee also usually reviews the Form 10-Q and Form 10-K either in a telephonic, video conference or in-person meeting. The Audit Committee meets in connection with each of the quarterly in person Board meetings, although during the Covid-19 pandemic, these meetings have been held via a video conference call. At these meetings, and the occasional additional meeting, the Committee addresses a variety of recurring and non-recurring topics, such as the Company's internal control systems, Enterprise Risk Management system, management of cybersecurity threats, changes to the Audit Committee charter and other matters.

The Audit Committee met nine times during 2021. 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 Chief Executive Officer and General Counsel also participated in all of these meetings. The Committee's agenda is established by the Committee's Chairperson, 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. To determine independence, the Audit Committee relies on responses from directors and executive officers in annual questionnaires and on the auditing firm's own conclusion regarding its independence. In selecting and evaluating an independent auditing firm, the Audit Committee considers the firm's history with the Company, if any, and the quality and efficiency of its past work; 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, capability and expertise in handling the breadth and complexity of the Company's worldwide operations; and the firm's estimated fees. Beyond the performance and capabilities of a particular firm, the Audit Committee also considers whether a change in audit firm is advisable either to ensure independence or to obtain more competitive fees. This consideration is balanced by an awareness of the potential inefficiency and disruption from changing to a different independent public accounting firm. Weighing these factors, the Audit Committee recommended the engagement of Ernst & Young LLP as the Company's independent auditing firm for 2022, which accounting firm has served as the Company's auditor since 1999.

The lead audit partner of the independent auditor is required by law to rotate every five years. Our lead audit partner from Ernst & Young LLP rotated off the Axcelis account after filing the 2020 Form 10-K in the first quarter of 2021. A new audit engagement partner has been assigned. The Audit Committee provided oversight and input to the selection of this new Ernst & Young LLP partner. The next mandatory periodic rotation of Axcelis' lead audit partner at Ernst & Young LLP is scheduled to take place in 2026.

Once the firm is appointed, the Audit Committee has the sole authority for the definition of the scope of, and oversight of, the work of the independent auditor, and for compensation of the firm. The Audit Committee manages the process of approving the procurement of services and compensation in accordance with a Policy Regarding Pre-Approval of Services adopted by the Audit Committee. Under this policy, when the Board appoints an audit firm, the purchase of planned audit-related and specified planned tax services are also automatically approved. Estimated fees for these planned services are reviewed by the Audit Committee each year, and under the Pre-Approval of Services policy, management may pay all fees that are not materially higher than the estimates reviewed by the Audit Committee.

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 2021. At the 2021 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, 2021 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 the applicable requirements of the Public Company Accounting Oversight Board ("PCAOB") and the SEC, and received from the independent auditors their written disclosure letter concerning independence required to be discussed by the auditors with the Committee under the applicable requirements of the PCAOB. 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 2021 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, Chairperson
Joseph P. Keithley
Jeanne Quirk
Jorge Titinger

Compensation Committee

During 2021, the Compensation Committee consisted of Messrs. George, Kurtzweil, Faubert, and Titinger, with Mr. Fletcher serving until his retirement in May 2021. Mr. George served as Chairperson of the Compensation Committee in 2021. 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 2021, the Compensation Committee met six times. The Compensation Committee operates under a written charter, a copy of which is available in the “Investors” portion of our website at www.axcelis.com.

The Compensation Committee establishes the compensation philosophy for Axcelis and has all the authority of the Board of Directors to act or exercise corporate powers with respect to the compensation of the executive officers and the administration of Axcelis’ equity compensation plans. The annual CEO evaluation is considered by the Compensation Committee in the course of its deliberations on the Chief Executive Officer’s compensation. In 2020, the charter of the Compensation Committee was amended to include a statement on the Committee’s responsibility to provide oversight of workforce diversity initiatives and goals. The Committee has directed management to track certain demographic metrics and to record our progress against specific goals on diversity and inclusion. See “*Stockholder Engagement—Responsiveness to Stockholder Interest in Diversity and Inclusion Issues*” above.

The Compensation Committee meets in the first quarter of each year to review the level and structure 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 2021 compensation decisions are described in detail in “*Executive Compensation—2021 Compensation Discussion and Analysis*” below.

To support its decision-making processes, the Compensation Committee frequently 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 consistency of our programs 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 2021, the Company engaged Pearl Meyer to provide benchmarking and advice related to compensation decisions for executive officers. Pearl Meyer has also advised the Committee and the Nominating and Governance Committee on compensation paid to the independent directors. Pearl Meyer did not provide any other services to the Company in 2021. 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. Depending on the matter under discussion, the Compensation Committee will meet alone with Ms. Puma 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, as a bonus award or in the annual equity award program, subject to limitations established by the Committee.

For a discussion on the Compensation Committee's decisions relating to executive compensation during 2021, see "*Executive Compensation—2021 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 2021, the Compensation Committee of the Board of Directors consisted of Mr. George (Chairperson), Mr. Kurtzweil, Mr. Faubert and Mr. Titingier. Mr. Fletcher served on the Committee until his retirement in May 2021. None of these directors has been an officer or employee of Axcelis or had a relationship during 2021 requiring disclosure under Item 404 of Regulation S-K.

Nominating and Governance Committee

During 2021, the Nominating and Governance Committee was comprised of Mr. Keithley (Chairperson), Dr. Chiu 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 in the "Investors" section of our website at www.axcelis.com. The Committee held five meetings in 2021. 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, composition, effectiveness and management interaction. In addition, each Board member completes an annual self- and peer-performance assessments. See "*Corporate Governance—Board Evaluations and Peer Review Processes*."

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 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 membership on Board committees, 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 first adopted by the Board of Directors in February 2016, and are periodically updated. These Governance Guidelines are available in the "Investors" section of our website at www.axcelis.com

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 and a variety of compliance topics, including the Foreign Corrupt Practices Act, Export Controls regulation, employment laws, and Insider Trading regulation.

Ensure we have an Independent Chairperson of the Board: Our Governance Guidelines require that the Chairperson 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 \$60,000). 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.

Conduct a Strong CEO Performance Review Process: As described above under "*Board of Directors—Chairperson'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 Chairperson of the Board and all other Board members.

Conduct an Annual Board Assessment and Director Evaluation: Our Governance Guidelines and the charter of the Nominating and Governance Committee address the requirement for annual Board self-assessment processes, which cover meeting agendas, schedules, presentations, access to and communications with senior management, and the Board's contribution as a whole. The annual process also includes an assessment by each director of their own and each other director's individual performance, using specified criteria. See "*Corporate Governance—Board Evaluations and Peer Review Processes*."

Corporate Governance: What We Don't Do

Fail to Refresh our Board: Our Governance Guidelines require an annual Board self- and peer-evaluation prior to the re-election nomination process. These evaluations, along with other assessments, are taken into account prior to the annual nomination process described below under "*Corporate Governance—Board Nomination Process and Requirements*." Our Governance Guidelines provide that Directors who have reached the age of 75 may not be nominated for election. This retirement policy has no exemptions or conditions. Since its adoption in 2015, five incumbent directors have not been eligible for re-nomination as a result of the retirement policy. Our Governance 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.

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 Minority 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 minority 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 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.

Assert Executive Compensation Clawback Rights: Our policy authorizes the Board to seek recovery of incentive cash and equity compensation that complies with the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010 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.

Require Multi-Year Vesting of Equity Awards: 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 targets median benchmarked pay for our executives, re-evaluating the compensation peer group used for benchmarking purposes at least biennially, with the help of an independent compensation consultant chosen by the Compensation Committee.

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.

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.

Indemnify Executives for Change of Control Excise Taxes: None of our change of control agreements with executive officers contain reimbursement provisions for change in control excise taxes, including those under US Internal Revenue Code Sections 280G and 4999. Our Governance Guidelines prohibit the Company from entering into any future change of control agreement with a provision indemnifying an executive for the effects of any excise tax due on severance compensation.

Re-Price or Buy Back 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 in the “Investors” section of our website at www.axcelis.com. Any waivers of our Ethics policy would also be disclosed on that site.

Board Evaluations and Peer Review Processes

A healthy and vigorous Board evaluation process is an essential part of good corporate governance. At Axcelis, this process includes annual evaluations of the Board and committee functions, including the interaction between the Board and management, and assessments by each director of their own performance and of that of each of the other directors. The Nominating and Governance Committee establishes and oversees the evaluation process, which focuses on identifying areas where Board, committee and director performance is both effective, as well as opportunities for further development or improvement.

Each year, the Nominating and Governance Committee reviews the format and effectiveness of prior evaluation processes to identify actionable feedback for directors and management to consider. Axcelis’ process has been a combination of written input, collected by the Chairperson of the Nominating and Governance Committee and one-on-one interviews between the Chairperson of the Nominating and Governance Committee and each director. These individual discussions are an important opportunity to ensure directors feel they can provide candid feedback on Board operations and the performance of Board members.

The Board has historically used two documents to guide the process: (i) a Board evaluation questionnaire and (ii) a self- and peer- evaluation form. The Board evaluation questionnaire addresses topics such as the composition of the Board and committees, the meeting schedule, agenda items, presentation content, the relationship with management (including availability and responsiveness), and the overall effectiveness of the Board and opportunities for improvement. The self- and peer-evaluation form asks directors to rate themselves and other directors on skills and behaviors in three categories: essential Board qualifications, participation in meetings, and overall value-add of the member.

The Nominating and Governance Committee has considered whether to engage a third-party facilitator for these annual processes, but has not done so to date. In 2021, we used the Board’s internet portal to collect the Board evaluation input, which was then reviewed by the Chairperson of the Nominating and Governance Committee. This allowed for a paperless approach to the request and submission of information.

This formal process is conducted annually between the August and November meetings of the Board, so that conclusions from the Board evaluation process can inform the decisions regarding nominations for re-election, usually made in February of each year. At the November Board meeting, the Chairperson of the Nominating and Governance Committee provides a verbal summary of the feedback he received, first to the Nominating and Governance Committee and then to the full Board. Depending on the feedback received, the Chairperson of the Board may have been consulted prior to the November meeting on specific potential outcomes from the feedback.

Under our Governance Guidelines, the Chairperson of the Board and the Chairperson of the Nominating and Governance Committee are responsible for responding to issues identified in the annual Board self-evaluation. These processes commonly lead to actions such as the following:

- Addressing Board and committee composition and refreshment needs to ensure the availability of appropriate skills and experience to meet the current and anticipated needs of the business;
- Implementing individual director input on Board and Committee meeting agenda items;
- Increasing time available for executive sessions without management present; and
- Providing periodic input to our CEO and senior management on desired presentation content and style.

In addition to the formal Board evaluation process, our Board and committees engage in an on-going informal evaluation of their own effectiveness throughout the year, usually discussed in executive sessions and in one-on-one conversations outside of meetings. Committee chairs also regularly communicate with management to discuss the development of meeting agendas and presentations, which results in a two-way feedback loop. The Chairperson of the Board and other directors have on-going engagement on these topics with our Chief Executive Officer. The Chair of our Audit Committee consults regularly with our Chief Financial Officer and Corporate Controller. The Chairs of our Nominating and Governance Committee and Compensation Committee communicate regularly with our General Counsel and Corporate Secretary, and the Chair of our Technology and New Product Development Committee interacts regularly with executive officers managing the Product Development and Engineering functions. These conversations mainly relate to agenda items, presentation content and the need to obtain external expert input to support committee discussions and decision-making.

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 or requests for publicly available documents) 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.

If you intend to bring proposed business to the 2023 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 December 1, 2022 (120 days before the anniversary date of the mailing of this proxy statement). Any such proposal should comply with the requirements of Securities Exchange Act Rule 14a-8.

If you wish to bring business before or propose director nominations at the 2023 annual meeting, you must give written notice to Axcelis between January 10, 2023 and February 9, 2023 (the dates 120 days and 90 days, respectively, before the anniversary of the 2022 annual meeting). These dates assume that the 2023 annual meeting is held not more than 30 days before or 30 days after May 10, 2023. If that is not the case, you must give written notice to Axcelis between the date 120 days before the 2023 annual meeting date and the later of (A) 90 days before the 2023 annual meeting date or (B) the date 10 days after public announcement of the 2023 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. Given the global nature of the Company's business, the Nominating and Governance Committee will consider whether a nominee's geographic or cultural background or other factors contributes to Board diversity that is beneficial to the Company for business reasons. Apart from seeking candidates with attributes that are deemed advantageous in terms of the Company's business objectives, the Board is committed to maintain gender, racial and ethnic diversity on the Board. The Board believes the current nominees exhibit an appropriate mix of the desired characteristics, as shown in the charts under "*Proposal 1: Election of Directors*" above.

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's Bylaws stipulate 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" portion of our website at 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 the SEC's 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 determines whether to approve or ratify 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.

2021 Related Party Disclosures

During 2021, 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 2021, Mr. Kurtzweil served as a director of SkyWater Technology, Inc., which has a subsidiary, SkyWater Technology Foundry, Inc., that is a customer of the Company. In 2021, SkyWater purchased goods and services from Axcelis for payments that exceeded \$120,000 and these business transactions have continued in 2022. However, Mr. Kurtzweil has no direct or indirect material interest in these payments or the services and products provided by the Company, which are the result of arms-length commercial transactions.

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

Two of the current Board members nominated for re-election (Mr. St. Dennis and Mr. Titingier) are also Board members of FormFactor, Inc. The Company has no business relationship with FormFactor.

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 and requires us to continue to make substantial investments in new products and features to successfully compete for customer selection;
- The dependence of our business on international trade, especially with Asia and the potential negative impact on our business from economic disruption from political, fiscal or global health reasons;
- The need to maintain global infrastructure to support our customers; and
- The cyclical nature of the semiconductor industry and its overall condition in a particular period.

A more extensive list of risk factors associated with our business can be found in the Company’s 2021 Annual Report on Form 10-K filed with the SEC and which serves as the Annual Report to Stockholders accompanying this proxy statement.

The Board of Directors has two primary methods of overseeing risk. The first method is through an 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 actions. At each quarterly 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 annually 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, which include network security improvements, management’s on-going monthly employee cybersecurity training, and other measures to protect its systems and data from unauthorized access or misuse. The Audit Committee undertakes an annual review of these cybersecurity risks, with follow-up discussions as needed. The Technology and New Product Development Committee oversees risk in the Company’s technology and product development initiatives. The Compensation Committee considers risk arising from compensation policies and practices. See “*Executive Compensation—2021 Compensation Discussion and Analysis—Risk Assessment of Compensation Policies and Practices.*” A committee may address risks directly with management or, where appropriate, may elevate a risk for consideration by the full Board.

The separate ERM process and Board committee approach to risk management leverages the Board’s leadership structure to ensure that risk is overseen by the Board both company-wide and through specific areas of competency. In order to ensure that longer term risks are also considered by the Board in a timely and consistent matter, the full Board dedicates one quarterly 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 a quarterly 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.

**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 2022 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 2021 and which the Audit Committee believes is well qualified to continue.

Ernst & Young LLP has audited the Company's financial statements since 1999. Prior to recommending the re-appointment of the Company's independent auditor each year, the Audit Committee receives input from the Company's Chief Executive Officer 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.

Subject to pandemic-related restrictions, representatives of Ernst & Young LLP will 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:

	2020	2021
Audit Fees	\$1,777,392	\$1,772,810
Audit Related Fees	\$ 31,710	\$ 28,695
Tax Fees	\$ 89,429	\$ 187,738
Total Fees	\$1,898,531	\$1,989,243

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, and the Company's subscription to Ernst & Young's accounting and auditing research platform. 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.

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. Under its charter, the Audit Committee will pre-approve estimated fees to be paid to the independent auditor for approved services. Under the Committee's pre-approval policy, once the Audit Committee has approved fee estimates from the audit firm, management is authorized to pay actual fee amounts that are not materially greater than the reviewed estimates.

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 (i) whether the work product is likely to be subject to, or implicated in, audit procedures during the audit of our financial statements, (ii) whether the independent auditor would be functioning in the role of management or in an advocacy role, (iii) whether the independent auditor's performance of the service would enhance our ability to manage or control risk or improve audit quality, (iv) 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 (v) whether the amount of fees involved, or the proportion of the non-audit fees to the total fees payable to the independent auditor 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 2020 and 2021 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 2022 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 2021 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 2021 compensation provided to the NEOs may be found in the “*Executive Compensation—2021 Compensation Discussion and Analysis*” and the accompanying tables in this proxy statement. Key features of NEO compensation in 2021 were:

- **2021 Target Pay was a Balanced Mix of Base and Short- and Long-Term Incentive Pay with a Strong Emphasis on Performance Based Awards.** In 2021, the NEOs received base pay, a target annual cash incentive, and RSU equity compensation (half of which were performance based) that aligned well with elements of peer executive compensation targets. Combining the annual cash incentive with the performance based RSUs, 50% of the total target compensation of the Company’s chief executive officer (Mary G. Puma) was subject to achievement of specific performance goals, and an average of 45% of the other NEOs’ 2021 total target compensation was similarly performance based.
- **2021 Realized Cash Incentive Compensation was Above Target.** In line with the financial performance of the Company in 2021, the cash performance based compensation realized by the NEOs under the 2021 Axcelis Management Incentive Plan hit the maximum score of 200% as a result of the Company’s 2021 revenues, profitability and gross margin, all of which were above plan. See “*Executive Compensation—Summary of Axcelis 2021 Executive Compensation—2021 Business Environment*” below.
- **2021 Performance Based Equity Awards were Earned Above Target.** The 2021 performance based RSUs were subject to the achievement of up to 10 2021 key operational goals, each weighted 15%. Management achieved all 10 goals relating to these 2021 performance based RSUs, and accordingly, the NEOs have earned 150% of the target number of shares. Half of the shares earned on the 2021 performance RSUs vested in February 2022 and the remaining half will vest in February 2023, subject to continuation of employment.
- **2021 Realized Total Compensation was Above Target.** As a result of the payout on the 2021 Axcelis Management Incentive Plan and the achievement on the 2021 performance based RSUs, Ms. Puma received 133% of her target pay for 2021, and, on average, the other NEOs, received 131% of their target pay for 2021 (assuming all RSUs vest over the remaining service periods).

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 NEOs. 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 2021 compensation of the Company’s named executive officers.

EXECUTIVE COMPENSATION

2021 Compensation Discussion and Analysis

This 2021 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, 2021, 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 2021.

Executive Summary of Axcelis 2021 Executive Compensation

2021 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 through our Customer Satisfaction and Innovation team, which sells spare parts, equipment upgrades, maintenance services, used tools, and customer training.

Following on a strong year in 2020, the semiconductor equipment industry saw remarkable additional growth in 2021, despite the global Covid-19 pandemic. In addition, Axcelis executed well against a number of initiatives designed to drive profitable growth. As a result, the Company had a number of important accomplishments in 2021:

- Axcelis' revenue grew approximately 40% year over year;
- Our full year revenue, gross margins and operating profit were all at record levels since we became an independent company in 2001;
- The market for mature semiconductor devices grew rapidly producing greater than 80% of our systems shipments. The electrification of the automotive market drove the power device and image sensor markets to contribute approximately 50% of our systems revenue;
- Our global footprint in growing markets continued to expand, including through multiple evaluations at key customers in memory and advanced logic; our Purion product extensions in the Silicon Carbide market, follow-on orders for our 300mm products in Japan; and device qualification for leading edge CMOS Image Sensor processes; and
- We were able to rapidly grow our manufacturing and supply chain capabilities through smart capacity planning and execution, including the opening of our new Axcelis Asia Operations Center in South Korea and the expansion of clean manufacturing in Beverly.

2021 Say-on-Pay Vote

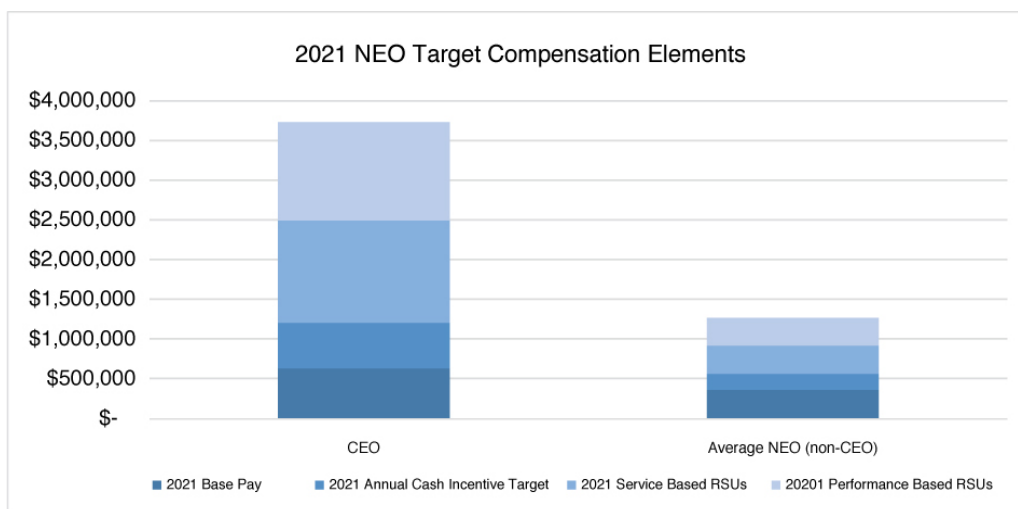
At our 2021 annual meeting, approximately 98.3% of votes cast were in favor in the advisory vote on 2020 executive compensation (commonly referred to as "Say-on-Pay"). The Compensation Committee of our Board of Directors considered that the results of the 2021 Say-on-Pay vote validated our general approach to executive compensation. The overall structure of our 2021 executive compensation was unchanged from that in 2020.

2021 Executive Target Compensation Balanced Service and Performance Based Components.

- Base salary represented 16% of the 2021 total target compensation of the Company's chief executive officer (Mary G. Puma) and an average of 28% of the other NEOs' 2021 total target compensation.

- In 2021, both the CEO's cash compensation and the CEO's equity compensation were equally divided between service based components and performance based components, with the performance based components totaling 50% of the CEO's total target compensation. For the other NEOs, on average, performance based components represented 45% of the total target compensation.
- Each NEO received two 2021 RSU grants having equal value at grant: one with four year service based vesting and the other to be earned based on achievement of operational performance goals designed to drive long term business value, and having a two year service based vesting overlay. Using the value approved by the Compensation Committee, these RSU grants represented 67% of total target compensation for the CEO and 54% of the other NEOs' 2021 total target compensation, on average.

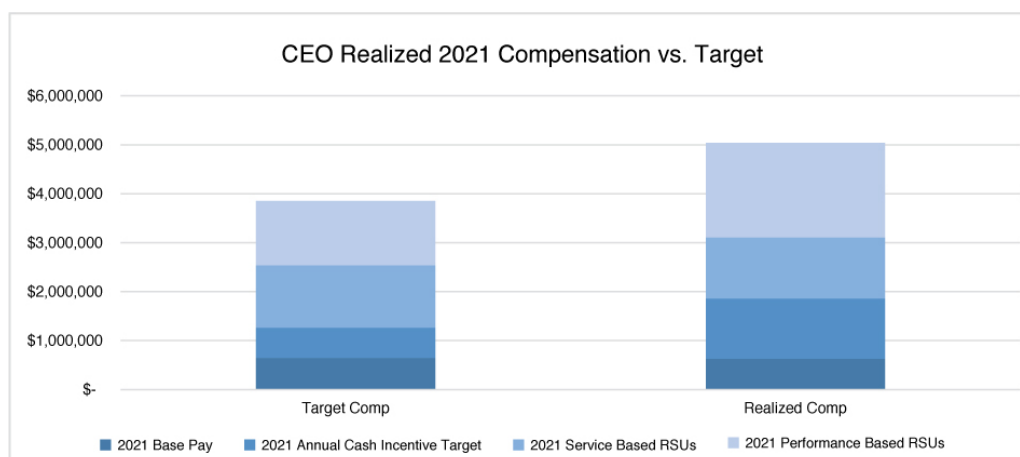
The 2021 target compensation elements for the CEO and the average for the other NEOs are shown in the chart below:



2021 Realized Compensation was Above Target.

In line with the financial performance of the Company in 2021, the performance based compensation realized by the NEOs in 2021 was above target pay as a result of the Company's 2021 revenues, profitability and gross margin, each of which were above the 2021 profit plan, and strong achievement of operational goals. See "*Executive Compensation—Summary of Axcelis 2021 Executive Compensation—2021 Business Environment*" above. The NEOs earned 150% of the performance based RSUs granted in 2021 based on the achievement of all ten 2021 operational goals, each weighted 15%. The earned 2021 performance RSUs vested 50% in February 2022 and the remaining 50% will vest in February 2023, subject to continuation of employment. As a result of the over-target performance based RSUs and the payout on the 2021 Axcelis Management Incentive Plan, Ms. Puma, the Company's chief executive officer, received 133% of her target pay for 2021, and, on average, the other NEOs received 131% of their target pay for 2021, assuming all earned 2021 performance based and service based RSUs vest over the remaining service periods.

The chart below compares our CEO's 2021 realized compensation to her 2021 target compensation:



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 cash incentive pay tied to approved financial goals and equity grants that deliver value on the achievement of operational goals that will drive long-term business objectives, 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 an appropriate 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;
- Appropriate double trigger change of control benefits for executives with no excise tax indemnification;
- 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 2021

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 decisions relating to 2021 compensation. 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 Committee's decisions on 2021 compensation were made with reference to a full benchmarked review of executive compensation provided by Pearl Meyer in October 2020. This Pearl Meyer report covered both cash and equity compensation for each of the executive officer positions at Axcelis in comparison to market data.

In developing their reports for the Committee, Pearl Meyer obtained compensation information for a group of companies which had been selected by the Committee as peers for executive compensation purposes. In addition, Pearl Meyer used compensation information 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 varied by the position, depending on the availability of data for that position from the peer group.

The Company's compensation peer group for the 2020 Pearl Meyer report was comprised by the following 13 companies:

- 3D Systems Corporation
- Advanced Energy Industries, Inc.
- Brooks Automation, Inc.
- CMC Materials, Inc.
- Cohu, Inc.
- Fluidigm Corporation
- FormFactor, Inc.
- Ichor Holdings, Ltd.
- Kulicke and Soffa Industries, Inc.
- Onto Innovation Inc.
- Photronics, Inc.
- Ultra Clean Holdings, Inc.
- Veeco Instruments Inc.

In December 2021, Brooks Automation, Inc. announced a name change to Azenta, Inc. and reported on plans to complete a sale of its semiconductor automation business in the first half of 2022. As a result, Brooks/Azenta will not be included in the Company's compensation peer group for future analyses.

In Pearl Meyer's October 2020 report, the total target direct 2020 compensation of each NEO fell between the 45th and 60th percentile rank of the market data. The benchmarking showed that in general the NEO cash compensation was aligned to the market, but that the NEO equity award values fell below median levels. The Committee took this input into consideration in fixing 2021 executive compensation.

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 objectives through at-risk pay tied to financial goals, resulting in appropriate pay-for-performance.	
Equity Awards	To drive achievement of long-term stockholder value through RSU grants with service based vesting, half of which are earned only on achievement of operational goals designed to drive long term performance, resulting in retention and appropriate pay-for-performance.	

The following discussion explains how, in 2021, 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. Based on the Pearl Meyer report from October 2020, the Committee approved an increase to Russell Low's pay effective in January 2021 and an increase to Ms. Fallon's base pay effective in February 2021.

Annual Cash Incentive—2021 Axcelis Management Incentive Plan

In February 2021, the Compensation Committee adopted the Company's annual cash incentive plan, the 2021 Axcelis Management Incentive Plan (the "2021 AMI"). Approximately 275 management-level employees plus the executive officers participated in the 2021 AMI, each of whom was assigned a target payout, expressed as a percent of base salary paid for the year. As in 2020, the Committee set the 2021 AMI target for Ms. Puma at 100% of her base salary. The 2021 AMI targets for the other NEOs, as a percent of their respective base salaries, remained at 2020 levels: 75% for Mr. Brewer and 60% for the other NEOs, as aligned with benchmarking.

The Committee also determined to maintain the same metric categories for the 2021 AMI as used in 2020: revenue, operating profit and gross margin. In 2021, to facilitate calculating results, each of the gross margin metrics (like the operating profit metrics) was set at a pre-cash incentive payout amount. Revenue growth over time is critical for the Company, an indicia of growing market share. Operating profit is viewed as a preferable metric to net income, since it eliminates factors outside the control of management. Gross margin evidences the Company's ability to generate funds for R&D and other expenses, as well as to drive profitability.

The table below shows the metrics established for the 2021 AMI, setting 0%, 100% and 200% funding scores for 2021 revenue, operating profit and gross margin. The target profit plan revenues in 2021 were 36% higher than in 2020.

Full Year Targets, in millions, except GMs	Threshold Results—80% of 2021 Plan Revenues	2021 Profit Plan	Maximum Level—115% of 2021 Plan Revenues	Weighting of Metric
Score	25%	100%	200%	
2021 Revenue	\$ 445.5	\$ 556.9	\$ 640.4	50%
2021 Operating Profit before annual cash incentive plan payout	\$ 53.4	\$ 101.2	\$ 134.6	25%
2021 Gross Margins, before annual cash incentive payout	41.5%	42.0%	42.5%	25%

The levels of revenue and operating profit in the 2021 AMI were chosen so that the revenue and operating profit expected in the 2021 profit plan would result in a 100% AMI funding, with the minimum and maximum levels set at a reasonable range around the expected performance, ranging from 80% of the planned revenues to 115% of the planned revenues, with appropriate operating profit levels for those revenue levels. The range in gross margins is not associated with the revenue amounts at the three score levels, but represents a reasonable range for the year. The 2021 AMI funding level was capped at a 200% payout.

Under the 2021 AMI plan design, after year end, actual 2021 financial performance is compared to these metrics, and a weighted score developed. Each of the metrics is scored by placing the 2021 results between the two applicable goal posts (0% and 100%; or 100% and 200%) and interpolating the final score. Each of these scores is weighted and totaled for a final score submitted to the Compensation Committee for approval. A total at-target payout (a 100% funding score) of the 2021 AMI would have equaled approximately \$8.2 million. The Compensation Committee had the authority to adjust the funding for extraordinary items and other qualitative aspects of the Company's 2021 performance (using benchmarks and budgets) to ensure that the funding score reflected actual performance and not extraordinary events and was otherwise appropriate. No special adjustment to the 2021 AMI score was made by the Committee. As designed, actual payouts equal the individual participant's target payout multiplied by the AMI score determined using the metrics set by the Committee.

In February 2022, the Compensation Committee determined that the final 2021 AMI funding score was capped at 200%, based on the Company's revenue, operating profit and gross margin for the year, with the resulting scores shown in the chart below:

2021 AMI Results, in millions, except GMs	2021 Results	Score	Capped Score	Weighting	Capped and Weighted Score
2021 Revenue	\$ 662.4	226%	200%	50.0%	100%
2021 Operating Profit before annual cash incentive plan payout	\$ 150.6	248%	200%	25.0%	50%
2021 Gross Margins, before annual cash incentive payout	44.1%	527%	200%	25.0%	50%
Total Score					200%

This funding score resulted in the 2021 non-equity incentive plan compensation to the NEOs as shown in the *2021 Summary Compensation* table below. A payout of the 2021 AMI was made in February 2022.

Long-Term Equity Incentive Compensation

Equity Compensation Philosophy. Equity compensation for NEOs, which since 2016 has taken the form of restricted stock units, is designed to align the interests of executives with those of our stockholders and to retain and motivate executives through the use of multi-year vesting periods

and performance goals. Thus, equity grants should constructively influence management's incentive 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, aligning the 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 their 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. 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.

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 given the vesting terms. Beginning in 2016, the Compensation Committee attached performance goals to a portion of the RSU grants to NEOs, a practice aligned with peers.

It is the Committee's general practice to approve equity awards with a future effective date, usually on the 15th (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.

2021 Annual Equity Grants. In February 2021, the Compensation Committee determined that, as in the prior year, RSUs would be used as the form of equity compensation for the NEO annual equity grants, with 50% of the total annual grants vesting on a service basis alone, and 50% to be earned based on the achievement of performance goals, followed by service based vesting.

In February 2021, the Compensation Committee fixed values for the 2021 RSU grant to each NEO at approximately the median annual equity award value for each role as reported by Pearl Meyer in October 2020. In all cases, these values were an increase over the annual executive equity grant values used in 2020. The number of units for each RSU grant was determined by dividing the approved grant value by the average closing price of the Company's common stock over a 30-day period ending three trading days prior to the grant date. The 2021 RSU grants to NEOs are set forth in the *Grants of Plan Based Awards in Fiscal 2021* table below.

The Committee determined that 50% of the 2021 RSUs would vest based on the executive's service to the Company over a four year period. Accordingly, the service based RSUs granted in

May 2021 will vest at the rate of 25% on each of the first four anniversaries of the date of grant until fully vested in May 2025 (assuming continuation of employment). The remaining 50% of the 2021 RSUs required that management earn the awards based on their attainment of up to ten performance goals, where each goal counted for 15% of the target grant. With the annual cash incentive plan focused on current year financial results, the Committee used these performance based annual equity awards to focus the NEOs on achieving near term milestones that were essential for the Company's long term growth.

Pearl Meyer's 2020 benchmarking showed that peer companies commonly allow recipients of performance RSUs to earn above target awards for over-target performance. Accordingly, for the first time in 2021, the Committee structured the Company's performance based RSUs so that the achievement of more than six goals would result in earning more than 100% of the granted RSUs, and achievement of all ten goals would entitle the executives to receive a maximum of 150% of the target grant.

The 2021 performance RSUs were designed to drive the achievement of specific operational goals that needed to be achieved in 2021 for the Company to fulfill its aggressive growth strategy, and reach its long term business models of \$550 million and \$650 million in revenue, resulting in high profitability and market share. As in prior years, the Committee used the performance RSUs to keep management's focus on critical, well-understood, initiatives rather than on broad financial metrics. These operational goals related to penetrating customers with specific products, achieving success criteria in specific customer relationships and reaching specific financial objectives, all of which have strategic implications for our business. Unlike broad financial metrics, which can be set over multiple years, the type of foreseeable operational goals selected by the Committee are by nature designed to be achieved near term. The Committee believes that these operational goals are no less strategic than longer term financial goals, and given the Company's track record, may be more effective at driving the right near term behavior to achieve desired long term results.

The 2021 RSU performance goals related to: (i) successful completion of evaluation placements for Purion Dragon and Purion H5 at specific customers; (ii) establishing a new evaluation placement for the Purion Dragon; (iii) achieving process qualification at specific customers for the Purion XEmax; (iv) receiving a new purchase order or evaluation placement for the Purion H200 in the power device market; (v) receiving a system purchase order or evaluation placement in Japan; (vi) penetration of a specific FLASH memory customer with a Purion high current system; (vii) achieving a targeted reduction in the cost of non-quality; (viii) achieving a revenue target for Purion H upgrades; and (ix) achieving a cost reduction target in the Purion H base configuration. Disclosure of 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. The 2021 performance RSU terms do not contemplate partial achievement of a goal. Performance RSUs that are earned through goal achievement are also subject to service based terms, in which 50% of the earned 2021 RSUs vest in 2022 and 50% in 2023.

In February 2022, the Compensation Committee determined that the Company met all ten performance objectives, and accordingly, 150% of the 2021 performance RSUs were earned and would vest in accordance with the two year schedule, assuming continuation of employment.

Employment and Change of Control Agreements

The Company has had an Employment Agreement with Ms. Puma since November 2007 that provides for a one-year term of employment at a minimum annual base salary of \$500,000, an annual target incentive compensation opportunity of 100% of base salary, and severance upon a qualifying termination of employment. No action was taken by the Compensation Committee in 2021 relating to this Employment Agreement, which renews automatically each year. See "*Payments on Termination or Change of Control—Employment Agreement with Ms. Puma*" below.

The Company has Executive Separation Pay Agreements with each of the NEOs, other than Ms. Puma, all entered into in 2019. These 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. These agreements auto-renew for each calendar year unless not later than April 1 of the preceding year, the Company or the executive had given notice not to extend the term. No change was made to these agreements in 2021. See “*Payments on Termination or Change of Control—Executive Officer Separation Pay Agreements*” below.

Each of the NEOs has a double-trigger Change of Control Agreement, having the benefits shown in the table below. These agreements do not provide any indemnification for the “Golden Parachute” excise taxes under Sections 280G and 4999 of the Internal Revenue Code. If a 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). These agreements auto-renew for each calendar year unless not later than April 1 of the preceding year, the Company or the executive had given notice not to extend the term. No change was made to these agreements in 2021. See “*Payments on Termination or Change of Control—Change of Control Agreements*” below.

Other Compensation Components

The Company has entered into Indemnification Agreements with each of its executive officers, which are in the same form as the Indemnification Agreements with each of the Company’s non-employee directors. Axcelis’ Indemnification Agreements are intended to provide protection from legal liability arising from the individual’s service as an executive to the extent typically provided by U.S. public companies. The Company indemnifies its executive officers to the fullest extent permitted by law with respect to his or her status or activities as an executive or other fiduciary of Axcelis, its subsidiaries and any other entities or committees on which the executive has been asked by the Company to serve, against all judgments, fines, amounts paid in settlement, and all reasonably incurred expenses. These Indemnification Agreements supplement the indemnification provisions in the Company’s Restated Certificate of Incorporation. As required in the Indemnification Agreements, the Company purchases director and officer liability insurance that would reimburse the Company for costs incurred under these Indemnification Agreements and for certain third party liabilities. In addition, the Company maintains “Side A” director and officer liability insurance which is for the exclusive benefit of the directors and officers, permitting direct reimbursement from the insurer if the Company was unable or unwilling to provide indemnification due to a lack of funds or other issue. The adequacy of our director and officer liability insurance coverage is reviewed, and adjusted if needed, on an annual basis.

The Company maintains no executive perquisites. Executives are entitled to service awards under a recognition program in which all employees participate, that provides gift certificates to employees on each five year work anniversary. The value of these service awards increases by tenure from \$100 to \$425, after tax, without regard to position.

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 2021, 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 *2021 Summary Compensation Table*. The Company does not maintain for the NEOs either a defined benefit pension plan or any non-qualified deferred compensation plan.

NEOs may also participate in the Company's medical 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 also offers dental insurance, and provides life, accidental death and dismemberment and disability insurance for all employees, with the opportunity to increase coverage levels via payroll deductions. Emergency medical coverage is included in the Company's standard business travel insurance, which would be secondary to an employee's regular medical coverage.

Finally, the Company maintains an Employee Stock Purchase Plan, a voluntary IRC Section 423 plan in which employees may purchase Axcelis shares through salary deductions. In 2021, none of the NEOs participated in our 2020 Employee Stock Purchase Plan, which became effective on July 1, 2020.

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 (including both cash and equity awards) 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 2021, 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 U.S. 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. Prior to 2018, certain "qualified performance based compensation" was exempted from the deductibility limitation under Section 162(m) of the Internal Revenue Code. 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 exempted from the \$1 million deduction limitation.

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.

2021 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,

Arthur L. George, Jr.,
Chairperson
John T. Kurtzweil
Richard J. Faubert
Jorge Titingier
Dipti Vachani

2021 Summary Compensation Table

Name and Principal Position	Year	Salary (\$)(1)	Stock awards (\$)(2)	Non-equity incentive plan compensation (\$)(3)	All other compensation (\$)(4)	Total (\$)
Mary G. Puma, Chief Executive Officer and President	2021	\$615,000	\$2,224,270	\$ 1,230,000	\$ 9,374	\$4,078,644
	2020	\$638,654	\$2,049,909	\$ 1,128,501	\$ 8,550	\$3,825,614
	2019	\$590,250	\$1,562,091	\$ —	\$ 8,400	\$2,160,741
Kevin J. Brewer, Executive Vice President and Chief Financial Officer	2021	\$392,000	\$ 667,266	\$ 588,000	\$ 8,700	\$1,655,966
	2020	\$407,077	\$ 782,181	\$ 539,479	\$ 8,550	\$1,737,287
	2019	\$378,431	\$ 596,065	\$ —	\$ 8,825	\$ 983,321
Russell J. Low, Executive Vice President, Global Customer and Engineering Operations	2021	\$360,000	\$ 622,771	\$ 432,000	\$ 8,808	\$1,423,579
	2020	\$342,692	\$ 593,410	\$ 363,322	\$ 8,550	\$1,307,974
	2019	\$318,577	\$ 452,177	\$ —	\$ 8,400	\$ 779,154
Lynnette C. Fallon, Executive Vice President, HR/Legal and General Counsel	2021	\$342,077	\$ 599,646	\$ 410,492	\$ 9,125	\$1,361,340
	2020	\$338,538	\$ 512,454	\$ 358,918	\$ 8,550	\$1,218,460
	2019	\$314,715	\$ 390,506	\$ —	\$ 8,400	\$ 713,621
William Bintz, Executive Vice President, Product Development	2021	\$330,000	\$ 578,353	\$ 396,000	\$ 9,104	\$1,313,457
	2020	\$342,692	\$ 593,410	\$ 363,322	\$ 9,050	\$1,308,474
	2019	\$318,577	\$ 452,177	\$ —	\$ 8,400	\$ 779,154

- (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 RSU awards received by the NEO in the year indicated, determined in accordance with 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 represents amounts that were paid under the Axcelis Management Incentive Plans for the respective year, as described in the "Compensation Discussion and Analysis" in this proxy statement and in the proxy statement for our 2021 Annual Meeting, respectively. No non-equity incentive plan compensation was paid in respect of the 2019 Axcelis Management Incentive Plan as described in the "Compensation Discussion and Analysis" in the proxy statement for our 2020 Annual Meeting.
- (4) The amounts in this column represent (A) the amount paid in cash as a matching contribution to Axcelis' 401(k) plan in respect of contributions made by the NEO during the year, (B) the value of service awards received in the year, under a recognition program in which gift certificates are given to employees on each 5 year work anniversary, increasing in value from \$100 to \$425, after tax and (C) in the case of Mr. Bintz in 2020, a \$500 patent award.

Grants of Plan Based Awards in Fiscal 2021

Name	Grant Date(2)	Date of Compensation Committee Approval	Estimated Possible Payouts under Non-Equity Incentive Plan Awards(1)		Estimated Possible Payouts under Equity Incentive Plan Awards(2)			All Other Stock Awards: Number of Shares of Stock or Units (#)(3)	Grant Date Fair Value of Stock and Option Awards(4)
			Target (\$)	Maximum (\$)	Threshold (#)	Target (#)	Maximum (#)		
Mary G. Puma			\$615,000	\$1,230,000					
	5/17/2021	2/25/2021					29,144	\$ 1,112,135	
	5/17/2021	3/24/2021			4,372	29,144	43,716	\$ 1,112,135	
Kevin J. Brewer			\$294,000	\$ 588,000					
	5/17/2021	2/25/2021					8,743	\$ 333,633	
	5/17/2021	3/24/2021			1,224	8,743	13,115	\$ 333,633	
Russell J. Low			\$216,000	\$ 432,000					
	5/17/2021	2/25/2021					8,160	\$ 311,386	
	5/17/2021	3/24/2021			1,224	8,160	12,240	\$ 311,386	
Lynnette C. Fallon			\$207,000	\$ 414,000					
	5/17/2021	2/25/2021					7,857	\$ 299,823	
	5/17/2021	3/24/2021			1,179	7,857	11,786	\$ 299,823	
William Bintz			\$198,000	\$ 396,000					
	5/17/2021	2/25/2021					7,578	\$ 289,176	
	5/17/2021	3/24/2021			1,137	7,578	11,367	\$ 289,176	

- (1) These target and maximum payouts are under the 2021 Axcelis Management Incentive Plan, discussed above in "2021 Compensation Discussion and Analysis—Annual Cash Incentive—2021 Axcelis Management Incentive Plan." Based on the achievement of financial metrics for 2021, a payout to the NEOs was made under the 2021 AMI, as shown in the Summary Compensation Table.
- (2) The NEOs were granted performance based RSUs under the Company's 2012 Equity Incentive Plan effective May 17, 2021, to be earned based on the achievement of performance goals tied to long-term objectives. The threshold number of shares that could be earned was 15%, if only one out of 10 performance goals was achieved. Up to 150% of the target shares could be earned, if all 10 performance goals were met. Unearned performance based RSUs are forfeited. As discussed above, 150% of the 2021 performance based RSUs were earned, and in accordance with the RSU terms, 50% of the earned shares vested on February 28, 2022, with the remainder to vest on February 28, 2023. Other than future services to the Company, no consideration was paid or will be due in order to acquire these RSUs. Unvested earned 2021 performance RSUs will be forfeited if the NEO's employment terminates prior to vesting. See "Long-Term Equity Incentive Compensation—2021 Equity Grants" in "2021 Compensation Discussion and Analysis" above.
- (3) The NEOs were granted service based RSUs under the Company's 2012 Equity Incentive Plan effective May 17, 2021, which vest as to 25% of such shares on the each of the first four anniversaries of the date of grant, assuming continuation of employment. Other than future services to the Company, no consideration was paid or will be due in order to acquire these RSUs. The 2021 service based RSUs will be forfeited if the NEO's employment terminates prior to vesting. See "Long-Term Equity Incentive Compensation—2021 Equity Grants" in "2021 Compensation Discussion and Analysis" above.
- (4) Represents the grant date fair value of the equity awards received by the NEO in 2021, determined in accordance with the assumptions described in the Stock Award Plans and Stock Based Compensation note to the Company's 2021 Financial Statements included in the Form 10-K filed with the Securities and Exchange Commission.

Outstanding Equity Awards at Fiscal 2021 Year End

Name	Number of Shares or Units of Stock that Have Not Vested #(1)	Market Value of Shares or Units of Stock that Have Not Vested \$(2)	Stock Awards	
			Equity Incentive Plan Awards: Number of Unearned Shares, Units or Other Rights that Have Not Vested #(3)	Equity Incentive Plan Awards: Market Value of Unearned Shares, Units or Other Rights that Have Not Vested \$(2)
Mary G. Puma	114,517	\$ 8,538,388	29,144	\$ 2,172,977
Kevin J. Brewer	42,146	\$ 3,142,406	8,743	\$ 651,878
Russell J. Low	32,551	\$ 2,427,003	8,160	\$ 608,410
Lynnette C. Fallon	29,064	\$ 2,167,012	7,857	\$ 585,818
William Bintz	31,969	\$ 2,383,609	7,578	\$ 565,016

- (1) None of the NEOs held options to acquire securities of the Company stock at December 31, 2021. All of the NEOs were granted service based RSUs under the Company's 2012 Equity Incentive Plan on each of May 16, 2018, May 15, 2019, May 15, 2020 and May 17, 2021. All of the service based RSUs granted to NEOs vest as to 25% of the shares on each of the first four anniversaries of the date of grant, assuming continuation of employment. In addition, each of the executives were granted RSUs on May 15, 2020 that were subject to the achievement of performance goals, 100% of which were earned. Half of these performance RSUs vested in February 2021 and the remaining 50% of the 2020 performance vesting RSUs vested on February 28, 2022, given the executives' continuation of employment through that date.
- (2) The market value of the unvested and unearned RSUs held by the executives at December 31, 2021 was determined by multiplying the number of shares by the closing price on December 31, 2021 of \$74.56.
- (3) Each of the executives were granted RSUs under the Company's 2012 Equity Incentive Plan on May 17, 2021 that could be earned based on the achievement of performance goals, each weighted 15%. The shares shown in the chart represent the target shares for these grants, assuming the achievement of the performance goals totaling 100%. In February 2022, the Compensation Committee determined that 150% of the 2021 performance RSUs were earned. In accordance with the terms of the grant, 50% of the earned RSUs vested on February 28, 2022. The remaining 50% of the 2021 performance vesting RSUs will vest on February 28, 2023, assuming continuation of employment. See "Long-Term Equity Incentive Compensation—2021 Equity Grants" in "2021 Compensation Discussion and Analysis" above.

Option Exercises and Stock Vested During Fiscal 2021

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	75,000	\$ 2,083,500	83,566	\$ 3,257,947
Kevin J. Brewer			32,560	\$ 1,268,844
Russell J. Low	5,475	\$ 202,028	23,883	\$ 931,370
Lynnette C. Fallon			20,795	\$ 810,804
William Bintz			23,883	\$ 931,370

- (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 (or if the vesting date is not a trading day, on the next trading day after the vesting date) 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 vesting 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 annual rate of pay in effect in 2021 was set at \$615,000 by the Compensation Committee in February 2019. 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 either (i) by the Company for reasons other than cause, death, disability or (ii) by a voluntary resignation by Ms. Puma with "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 monthly base salary and a monthly annual bonus amount, determined in accordance with the agreement. For this purpose, Ms. Puma's monthly bonus compensation equals her then effective annual base salary, divided by 12 and 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, 2021:

Lump sum cash payment (1)	Value of accelerated vesting on equity awards (2)	18 months of COBRA premiums for health coverage (3)	Total
\$3,403,410	\$ 4,915,357	\$ 34,696	\$8,353,463

- (1) This amount represents 24 months of Ms. Puma's base salary at the highest rate in effect in the year preceding December 31, 2021 plus 24 months of a monthly bonus amount as specified in the agreement. The monthly rate of annual base salary (\$51,250) and monthly bonus amount (\$90,559) were calculated using her annual base salary of \$615,000 in effect at December 31, 2021, and the 2020 Axcelis Management Incentive Plan bonus percentage of 176.7%, as specified in the agreement. 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 2021 (\$74.56). The actual amount received by Ms. Puma on the sale of shares issued on accelerated 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 2022 for Ms. Puma's coverage elections. Actual COBRA rates will change on January 1, 2023.

Executive Officer Separation Pay Agreements. In May 2019, the Compensation Committee approved the execution of Executive Separation Pay Agreements with each of the NEOs other than Ms. Puma (the "2019 Executive Separation Pay Agreements"). These agreements replaced similar agreements that were expiring in 2020 and 2021. These 2019 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. The following table sets forth the separation pay that would have been due to these NEOs under their respective 2019 Executive Separation Pay Agreements if a qualifying termination occurred on December 31, 2021:

	Cash Separation Pay (1)	Value of transition assistance (2)	12 months of COBRA premiums for health coverage (3)	Total
Kevin J. Brewer	\$ 392,000	\$ 15,000	\$ 23,131	\$430,131
Russell J. Low	\$ 360,000	\$ 15,000	\$ 31,724	\$406,724
Lynnette C. Fallon	\$ 345,000	\$ 15,000	\$ 23,131	\$383,131
William Bintz	\$ 330,000	\$ 15,000	\$ 23,131	\$368,131

- (1) This amount represents 12 months of the NEO's annual base salary in effect on December 31, 2021. 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 2022 COBRA premiums for the executive's coverage elections for 2021. Actual COBRA rates will change on January 1, 2023.

Change of Control Agreements. Each of the NEOs is a party to a Change of Control Agreement with the Company. None of the currently effective agreements have an indemnification or gross up for excise taxes. This is 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 "Corporate Governance—Governance Policies," above.

The 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 a period of time following the change in control either (A) by the Company for reasons other than cause, death, disability or (B) due to a voluntary resignation by the executive with good reason. "Good reason" includes an adverse change in the executive's role or position; a reduction in the executive's 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 a majority of the shares outstanding after the transaction. Under the Change of Control Agreements, severance compensation consists of a cash payment equal to a multiple of the executive's annual base salary and annual bonus as of the date of termination. The multiple in Ms. Puma's Change of Control Agreement is two, while the multiple in the other NEOs' Change of Control Agreements is 1.5.

The amounts that would have been due to each NEO under the Change of Control Agreements in effect at December 31, 2021, in the event that a change of control and termination occurred on that date, are set forth in the table below:

Estimated Payments under the Change of Control Agreements if due at December 31, 2021			
Name	Lump sum cash payment (1)	Value of accelerated vesting on equity awards (2)	Total (3)
Mary G. Puma	\$ 3,075,000	\$ 4,915,357	\$7,990,357
Kevin J. Brewer	\$ 1,323,000	\$ 1,658,874	\$2,981,874
Russell J. Low	\$ 1,080,000	\$ 1,396,394	\$2,476,394
Lynnette C. Fallon	\$ 1,035,000	\$ 1,281,001	\$2,316,001
William Bintz	\$ 990,000	\$ 1,342,741	\$2,332,741

- (1) This amount represents separation pay equal to (A) a multiple of (i) the executive's current annual base salary plus (ii) a target bonus amount, and (B) the executive's target AMI for 2021, prorated for the months worked during the year. Since termination for all NEOs is assumed at year end, the 2021 AMI targets have not been prorated. The multiple is 2, in the case of Ms. Puma, and 1.5, in the case of the other NEOs.
- (2) These amounts reflect a valuation of the acceleration of all of the NEO's outstanding unvested RSU awards using the value of the closing price of our common stock on the last trading day

of 2021 (\$74.56) and the methods prescribed by regulations under IRC Section 280G. Depending on the terms of the transaction, some or all of the executive's unvested equity awards may vest without regard to the effect of the Change of Control Agreements. The actual amount received by the NEO on the sale of shares from accelerated equity awards will depend on the market values at the time of the change of control.

- (3) The Change of Control Agreement with each NEO provides that the lump sum cash value should be reduced by an amount needed to avoid the excise tax due under IRC Section 4999, if that creates the best after-tax result for the executive. Except in the case of Dr. Low, the hypothetical terminations on December 31, 2021 would not have triggered any excise tax under IRC Section 4999. In Dr. Low's case, a reduction in payments of approximately \$506,200 would avoid an excise tax under IRC Section 4999. The amount shown in the table is prior to any reduction.

Ratio of CEO Pay to Median Employee Pay

Ms. Puma's total 2021 compensation was \$4,078,644, as determined for the purposes of the *2021 Summary Compensation Table* above. This amount was approximately 33 times the total 2021 compensation of the median Axcelis employee selected in 2020, calculated on the same basis. We identified our 2020 median employee by estimating annual base salary for all Axcelis employees (excluding Ms. Puma) over the twelve month period ending November 30, 2020. To do this, we used the annual full time rate of pay as of November 30, 2020 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. The 2020 median employee's 2021 compensation, calculated on the basis required for the Summary Compensation Table, was \$121,361.

Since other companies have different employee populations and compensation practices and may utilize different methodologies, exclusions, estimates, and assumptions in calculating their own pay ratios, the pay ratios reported by other companies may not be comparable to the pay ratio reported above.

2022 Annual Meeting Admission Ticket

2022 Annual Meeting of Axcelis Technologies, Inc. Stockholders

Tuesday, May 10, 2022, 12:30 pm
To be held at the offices of
Axcelis Technologies, Inc.
108 Cherry Hill Drive
Beverly, MA 01915

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

	<p>Small steps make an impact.</p> <p>Help the environment by consenting to receive electronic delivery, sign up at www.investorvote.com/acls</p>	
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▼ IF VOTING BY MAIL, SIGN, DETACH AND RETURN THE BOTTOM PORTION IN THE ENCLOSED ENVELOPE. ▼

Proxy – Axcelis Technologies, Inc.



Notice of 2022 Annual Meeting of Stockholders

To be held at the offices of Axcelis Technologies, Inc.
108 Cherry Hill Drive, Beverly, MA 01915

Proxy Solicited by Board of Directors for Annual Meeting – Tuesday, May 10, 2022

Mary G. Puma, Kevin J. Brewer, Lynnette C. Fallon, or any of them, each with the power of substitution, are hereby authorized to represent and vote the shares of the undersigned, with all the powers which the undersigned would possess if personally present, at the Annual Meeting of Stockholders of Axcelis Technologies, Inc. to be held on May 10, 2022 or at any postponement or adjournment thereof.

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

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

(Items to be voted appear on reverse side.)

C Non-Voting Items

Change of Address – Please print new address below.

Comments – Please print your comments below.

Meeting Attendance

Mark box to the right if you plan to attend the Annual Meeting.

