

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

SCHEDULE 14A

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

Filed by the Registrant

Filed by a Party other than the Registrant

Check the appropriate box:

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

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

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**NOTICE OF ANNUAL MEETING OF STOCKHOLDERS
To Be Held May 9, 2007**

The 2007 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 1:30 p.m. on Wednesday, May 9, 2007 for the following purposes:

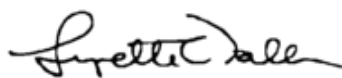
1. To elect three (3) directors to serve until the 2010 annual meeting of stockholders.
2. To ratify the appointment of our independent registered public accounting firm to audit our financial statements for the year ending December 31, 2007.
3. To consider a stockholder proposal if properly presented at the 2007 annual meeting.
4. To transact such other business as may properly come before the meeting or any adjournment thereof.

Only stockholders of record at the close of business on March 15, 2007 will be entitled to vote at the annual meeting or at any adjournment.

It is important that your shares be represented at the meeting. Therefore, whether or not you plan to attend the meeting, please complete your proxy card and return it in the enclosed envelope, which requires no postage if mailed in the United States. If you attend the meeting and wish to

vote in person, your proxy will not be used.

By order of the Board of Directors,



Lynnette C. Fallon
Secretary

Dated: April 4, 2007

PROXY STATEMENT

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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 2007 annual meeting of stockholders to be held on Wednesday May 9, 2007 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 April 4, 2007.

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 15, 2007. On that date, there were 101,544,879 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 your shares either by proxy or by attending the meeting and voting in person. If you choose to vote by proxy, please complete, date, sign and return the proxy card in the enclosed postage prepaid envelope. 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 proposals one and two and against proposal three contained in this proxy statement, as recommended by our Board of Directors. Even if you plan to attend the meeting, please complete and mail your proxy card to ensure that your shares are represented at the meeting. If you attend the meeting, you can still revoke your proxy by voting in person. If your shares are held in a brokerage or bank account, you must make arrangements with your broker or bank to vote your shares in person.

Proposals to be considered at the annual meeting. The principal business expected to be transacted at the meeting, as more fully described below, will be the reelection of three directors whose current terms end in 2007, the ratification of the selection of independent auditors of the Company and a stockholder proposal regarding the repeal of our classified Board of Directors, if properly presented.

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. The number of votes required to approve the proposals that are scheduled to be presented at the meeting is as follows:

Proposal	Required Vote
Election of three nominees as directors	Each nominee must receive a plurality of the votes cast.
Ratification of the appointment of our independent registered public accounting firm (our "independent auditors") to audit our financial statements for the year ending December 31, 2007	This requires the affirmative vote of a majority of the votes cast.
Approval of the stockholder proposal regarding repeal of the classified Board of Directors	This requires the affirmative vote of a majority of votes cast.

Abstentions. Abstaining from voting for a nominee in the election of directors or on the proposal to ratify the appointment of our auditors or the stockholder proposal 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 both the election of directors and ratification of auditors, but not the stockholder proposal. However, because broker non-votes will not be included in the votes cast, they will have no impact on the results of voting.

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 stockholder proposal described herein, we do not know of any other proposals that may be presented at the 2007 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. We may retain a proxy solicitation firm to assist in the solicitation of proxies. We will bear all reasonable fees and expenses if such a firm is retained.

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, 2006 by persons known by us to own more than 5% of our common stock.

Beneficial Owner(1)	Shares Owned	Percent of Class
FMR Corp. and Edward C. Johnson 3rd(2) 82 Devonshire Street, Boston, MA 02109	15,194,609	15.0%
Donald Smith & Co., Inc.(3) 152 West 57th Street, New York, NY 10019	10,120,900	9.9%
Dimensional Fund Advisors LP(4) 1299 Ocean Avenue Santa Monica CA 90401	8,203,296	8.1%
Barclays Global Investors, NA and Barclays Global Fund Advisors 45 Fremont Street, San Francisco, CA 94105	5,376,465	5.3%
Barclays Global Investors, Ltd. Murray House, 1 Royal Mint Court, London EC3N 4HH, England		

- (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, 2006.
- (2) Based on a Schedule 13G/A filed with the Securities and Exchange Commission in February 2007 reporting on ownership as of December 31, 2006, which states that Fidelity Management & Research Company (“Fidelity”), a wholly-owned subsidiary of FMR Corp., is the beneficial owner of 14,178,109 of the reported shares (14.0% of the class). Such beneficial ownership is the result of Fidelity acting as investment advisor to various investment companies, including Fidelity Low Priced Stock Fund (the “Fund”), which holds 9,000,004 of such shares (8.9% of the class). According to the Schedule 13G/A, Edward C. Johnson 3d and FMR Corp., through its control of Fidelity and the investment companies, have sole dispositive power over the shares held by Fidelity, but no voting power. Fidelity votes these shares pursuant to guidelines of the investment companies’ trustees. Fidelity and the Fund are located at the same address as FMR Corp. According to the Schedule 13G/A, of the remaining shares, which are held in institutional accounts managed by other subsidiaries of FMR Corp., Edward C. Johnson 3d and FMR Corp. each have sole dispositive power over 1,016,500 shares and sole voting power over 912,100 shares.
- (3) Based on a Schedule 13G filed with the Securities and Exchange Commission in February 2007 reporting on ownership as of December 31, 2006, which states that such shares are owned by advisory clients of Donald Smith & Co., Inc. According to the Schedule 13G, Donald Smith & Co., Inc. has sole voting power over 7,839,800 of such shares and the sole power to dispose of all of such shares.
- (4) Based on a Schedule 13G filed with the Securities and Exchange Commission in February 2007 reporting on ownership as of December 31, 2006, which states that such shares are owned by advisory clients of Dimensional Fund Advisors LP.
- (5) Based on a Schedule 13G filed with the Securities and Exchange Commission in February 2007 reporting on ownership as of December 31, 2006, which states that such shares are held by the Barclays banks and investment adviser named above in trust accounts for the economic benefit of the beneficiaries of those accounts. According to the Schedule 13G, such companies collectively have sole voting power over 4,999,840 such shares and the sole power to dispose of all of such shares.

SHARE OWNERSHIP OF DIRECTORS AND EXECUTIVE OFFICERS

The following table shows the amount of our common stock beneficially owned as of March 1, 2007 by our directors, the executive officers named in the Summary Compensation Table below, and all of our current executive officers and directors as a group.

Beneficial Owner(1)	Shares Owned	Shares Subject to Options or Warrants Exercisable as of April 29, 2007(2)	Total Shares Beneficially Owned	Percent of Class
<i>Non-Executive Directors</i>				
R. John Fletcher	22,590	55,000	77,590	*
Stephen R. Hardis	86,325	100,000	186,325	*
William C. Jennings	20,590	55,000	75,590	*
Michio Naruto	8,333	40,000	48,333	*
Patrick H. Nettles	27,090	85,000	112,090	*
H. Brian Thompson	20,590	85,000	105,590	*
Geoffrey Wild	0	0	0	*
<i>Named Executive Officers</i>				
Mary G. Puma(3)	75,763	1,450,124	1,525,887	1.5%
Stephen G. Bassett	10,000	57,500	67,500	*
Lynnette C. Fallon	11,033	211,500	222,533	*
Matthew P. Flynn	2,054	94,369	96,423	*
Kevin J. Brewer	1,500	110,618	112,118	*
<i>All current Executive Officers and Directors as a Group (16 persons)(4)</i>	300,217	2,637,856	2,938,073	2.9%

* 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. The shares shown in the table also include shares that the persons named in this table have the right to acquire on or before April 29, 2007 (60 days after March 1, 2007) by exercising a stock option or other right. Unless otherwise noted, 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 1, 2007 (101,542,411 shares), plus any shares that person could acquire upon the exercise of any options on or before April 29, 2007.
- (2) Concurrently with the acceleration of vesting of certain stock options effective December 15, 2005, the executive officers agreed not to sell affected options until they would otherwise vest in accordance with their original terms. Of the shares listed as subject to options exercisable as of April 29, 2007, the following shares will on such date remain subject to these lock up agreements: Ms. Puma—81,250 shares; Mr. Bassett—1,250 shares; Ms. Fallon—22,500 shares; Mr. Flynn—11,250 shares; Mr. Brewer—10,000 shares; and all current executive officers—148,500 shares.
- (3) Ms. Puma’s ownership includes 10,000 shares owned by her husband.
- (4) Includes shares and exercisable options held by the directors and named executive officers, as well as four other executive officers who beneficially own an aggregate of 14,349 shares and 293,745 exercisable options.

PROPOSAL 1: ELECTION OF DIRECTORS

Our Board of Directors has fixed the number of directors at eight. The number of directors is subject to increase or decrease by action of the Board. Under our charter, our Board is divided into three classes as nearly equal in number of directors as possible. The term of one class expires, and their successors are elected for a term of three years, at each annual stockholders' meeting. At the upcoming annual meeting, three directors will be elected to hold office for a term of three years until our annual meeting in 2010 and until their successors are elected and qualified. Each of the Board's nominees, Michio Naruto, Patrick H. Nettles and Geoffrey Wild, 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 three nominees.

The following table contains biographical information about the nominees for director and current directors whose term of office will continue after the meeting.

Name and Age	Business Experience and Other Directorships	Director Since	Present Term Expires
*Geoffrey Wild Age: 50	Mr. Wild is Chief Executive Officer and President of Nikon Precision, Inc., a position he has held since 2002. Nikon Precision, Inc. is a wholly owned subsidiary of Nikon Corporation, the leading global supplier of step-and-repeat and step-and-scan lithography systems. Prior to joining Nikon, Mr. Wild was Chief Executive Officer of TheSupply, Inc., an e-commerce provider of supply chain services. Mr. Wild is also a director of Nikon Precision, Inc., and E Ink Corporation.	2006	2007
*Michio Naruto Age: 71	Mr. Naruto is an advisor to Fujitsu Corporation, a global provider of information technology and communications solutions. Until March 2001, he held the position of vice chairman of Fujitsu. Prior to becoming vice chairman, Mr. Naruto was executive vice president in charge of Fujitsu's Legal and Industry Relations, External Affairs, and Export Control Groups. He has been a member of Fujitsu's board in charge of international operations since 1985. Mr. Naruto is chairman of the board, Toyota InfoTechnology Center Co., Ltd.	2005	2007
*Patrick H. Nettles Age: 63	Mr. Nettles has served as Executive Chairman of the Board of Directors of CIENA Corporation, a manufacturer of optical networking equipment, since May 2001. Prior to that, Mr. Nettles served as Chairman of the Board of Directors and Chief Executive Officer of CIENA from October 2000, as its President, Chief Executive Officer and Director from April 1994, and as its Director and Chief Executive Officer from February 1994. Mr. Nettles is a director of Progressive Corporation.	2001	2007
R. John Fletcher Age: 61	Mr. Fletcher is Chief Executive Officer of Fletcher Spaght, Inc., a strategy consulting organization, which he founded in 1983, and Managing Director of Fletcher Spaght Ventures, a venture fund. Prior to founding Fletcher Spaght, Inc., Mr. Fletcher was a manager at the Boston Consulting Group. Mr. Fletcher is also a director of AutoImmune, Inc., Spectranetics Corporation and Panacos, Inc.	2003	2008

Stephen R. Hardis Age: 71	Mr. Hardis was the Company's Chairman of the Board until May 2006 and currently serves as Lead Director. He was Chairman and Chief Executive Officer of Eaton Corporation until July 2000. Mr. Hardis became Eaton's Chairman in January 1996 and its Chief Executive Officer in September 1995. Prior to that, he served as Eaton's Vice Chairman from 1986 and its Executive Vice President—Finance and Administration from 1979. Mr. Hardis is a director of American Greetings Corporation, Lexmark International Group, Inc., Marsh & McLennan Companies, Inc., Nordson Corporation, Progressive Corporation, and Steris Corporation.	2000	2008
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H. Brian Thompson Age: 67	Mr. Thompson is Executive Chairman of Global Telecom & Technology (GTT), a world-wide multi-network telecommunications operator, a position held since 2006. He is also the Chairman of Comsat International, a privately held independent telecommunications company operating throughout Latin America, a position he assumed in January 2003. He has also been the Chief Executive Officer of Universal Telecommunications, Inc., a private investment and advisory firm, since 1991. Mr. Thompson previously served as Chairman and Chief Executive Officer of Global Telesystems, Inc., a telecommunications company, from March 1999 through September 2000 and served as Chairman and Chief Executive Officer of LCI International, a telecommunications company, from July 1991 until its sale to Qwest Communications International, Inc., a broadband internet communications company, in June 1998. At that time, Mr. Thompson became Vice Chairman of the Board of Qwest until his resignation in December 1998. Earlier, he was Executive Vice President of MCI Communications through its growth years in the 1980s. Mr. Thompson serves on the Boards of Directors of Bell Canada International, Inc., Comsat International, United Auto Group, and Sonus Networks, Inc.	2002 2008
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William C. Jennings Age: 67	Mr. Jennings is a retired partner of PricewaterhouseCoopers LLP, a global accounting and advisory firm, where he led the risk management and internal control consulting practice from 1992 until his retirement in 1999. Before that, Mr. Jennings served as a senior audit partner at Coopers & Lybrand, as a senior executive vice president at Shearson Lehman Brothers, responsible for quality assurance, internal audit and compliance, and as an executive vice president and chief financial officer of Bankers Trust. Since retiring from PricewaterhouseCoopers, Mr. Jennings has provided independent consulting services to a number of companies. He is also a director of Silgan Holdings Inc. and Nyfix, Inc.	2003 2009
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Mary G. Puma Age: 49	Ms. Puma is Axcelis' Chairman (since May 2006), Chief Executive Officer (since January 2002) and President (since May 2000). Prior to becoming Chief Executive Officer, Ms. Puma served as Chief Operating Officer from May 2000, and, before that, served as a Vice President of the Company from February 1999. In 1998, she became General Manager and Vice President of the Implant Systems Division of Eaton Corporation, a global diversified industrial manufacturer. In May 1996, she joined Eaton as General Manager of the Commercial Controls Division. Prior to joining Eaton, Ms. Puma spent 15 years in various marketing and general management positions for General Electric Company. Ms. Puma is a director of Nordson Corporation.	2000 2009
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* Indicates a nominee for election as director.

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

Upon the recommendation of its Audit Committee, the Board of Directors has appointed the independent registered public accounting firm of Ernst & Young LLP (referred to herein as our "independent auditor") as independent auditors to conduct the annual audit of our financial statements for 2007 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 2006 and which the Audit Committee believes is well qualified to continue.

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

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

	<u>2005</u>	<u>2006</u>
Audit Fees	\$ 1,848,700	\$ 1,848,500
Audit Related Fees	\$ 12,500	\$ 11,000
Tax Fees		
Tax compliance and preparation	\$ 212,751	\$ 62,890
International tax planning	\$ 135,000	\$ 220,000
General tax planning and other tax	\$ 36,435	0
Total Tax Fees	<u>\$ 384,186</u>	<u>\$ 282,890</u>
Total Fees	<u>\$2,245,386</u>	<u>\$ 2,142,390</u>

Audit fees include a U.S. GAAP audit of SEN Corporation, an SHI and Axcelis Company and statutory audits for subsidiaries and branches operating in countries outside of the United States. Audit related fees include audits for the Company's 401(k) plan required under ERISA. International tax planning

relates to the setting of fair compensation for services provided to us by our foreign subsidiaries to ensure appropriate revenue levels are reported for taxation in those foreign countries.

Our Audit Committee has adopted a policy and procedures requiring its pre-approval of all non-audit (including tax) services performed by the independent auditor in order to assure that these services do not impair the auditor's independence. The policy approves the performance of specific services subject to cost limits for each service. Such general approvals are to be reviewed and, if necessary, modified at least annually. The policy also prohibits the independent auditor's performance of certain types of services as inconsistent with independence. Management must obtain the specific prior approval of the Audit Committee for each engagement of the independent auditor to perform other audit-related or other non-audit services.

Any approval required under the policy must be given by the Audit Committee or by any member or members to whom the Committee has delegated that authority. The Audit Committee does not delegate its responsibility to approve services performed by the independent auditor to any member of management.

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

All of the non-audit services rendered by Ernst & Young LLP in respect of the 2005 and 2006 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 2007 notwithstanding a negative stockholder vote.

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

PROPOSAL 3: STOCKHOLDER PROPOSAL REGARDING REPEAL OF THE CLASSIFIED BOARD OF DIRECTORS

Proposal No. 3 is a non-binding proposal by individual stockholders. For the reasons set forth below, the Board of Directors recommends a vote AGAINST Proposal No. 3.

Stockholder Proposal

The Company has been advised that William C. Thompson, Jr., Comptroller, City of New York, on behalf of the Boards of Trustees of New York City Employees' Retirement System, the New York City Teachers' Retirement System, the New York City Police Pension Fund, the New York City Fire Department Pension Fund and the New York City Board of Education Retirement System (collectively, the "New York City Pension Funds"), which are reportedly the beneficial owners in the aggregate of 1,469,628 shares of the Company's Common Stock, with an address of 1 Centre Street, Room 736, New York, NY 10007-2341, intends to submit the following proposal for consideration at the Annual Meeting:

"BE IT RESOLVED, that the stockholders of Axcelis Technologies, Inc. request that the Board of Directors take the necessary steps to declassify the Board of Directors and establish annual elections of directors, whereby directors would be elected annually and not by classes. This policy would take effect immediately, and be applicable to the re-election of any incumbent director whose term, under the current classified systems, subsequently expires."

The New York City Pension Funds provided the following supporting statement:

"We believe that the ability to elect directors is the single most important use of the shareholder franchise. Accordingly, directors should be accountable to shareholders on an annual basis. The election of directors by classes, for three-year terms, in our opinion, minimizes accountability and precludes the full exercise of the rights of shareholders to approve or disapprove annually the performance of a director or directors.

"In addition, since only one-third of the Board of Directors is elected annually, we believe that classified boards could frustrate, to the detriment of long-term shareholder interest, the efforts of a bidder to acquire control or a challenger to engage successfully in a proxy contest.

"We urge your support for the proposal to repeal the classified board and establish that all directors be elected annually."

Recommendation of the Board on this Stockholder Proposal

The Board takes the views of its stockholders seriously and has given this proposal thorough consideration. The Board believes that this proposal should not be implemented because it would diminish the Board's ability to act in the best interests of the stockholders. Therefore, the Board unanimously recommends a vote AGAINST the proposal.

As provided in the Company's Certificate of Incorporation, the Company has three classes of directors, with members of each class elected to three-year terms. The classes are staggered, such that stockholders vote on one class of directors each year. The Company has had this structure continuously since it

A classified board maintains accountability to stockholders while promoting continuity and stability in the Board's business strategies and policies. To maintain accountability, stockholders have the opportunity each year to vote on one-third of the members of the Board. The Board believes that three-year terms do not reduce directors' accountability. Directors have fiduciary duties to the Company and its stockholders that do not depend on the length of their term of office.

The staggered three-year terms served by Axcelis directors promote the Company's performance. They ensure that, in any year, at least two-thirds of the directors will have had prior experience and familiarity with the Company's business, which is beneficial for long-term strategic planning. They support independent thought and action by non-employee directors, who need not worry about being renominated each year. The classified structure also helps the Company attract highly qualified directors willing to commit the time necessary to understand the Company, its operations and its competitive environment.

Contrary to the stockholder proposal, the classified Board will enhance, not frustrate, the stockholders' long-term interest in the event of an unsolicited proposal to acquire control of the Company. The classified board structure reduces the threat of an abrupt change in the composition of the Board because a majority of the directors cannot be replaced at a single meeting. This helps ensure that the Board has an adequate opportunity to fulfill its duties to the Company's stockholders by reviewing any such proposal, studying appropriate alternatives and achieving the best result for all stockholders. A classified board does not preclude takeover offers. Rather, a classified board enhances the Board's ability to negotiate favorable terms with the proponent of an unsolicited proposal, a function the stockholders cannot perform.

Stockholders should be aware that, even if approved, this proposal is not binding on the Board. The Board will consider the stockholders' wishes as expressed at the Annual Meeting and will take such action as the Board, in its business judgment and the exercise of its fiduciary duties, deems to be in the best interests of the Company and its stockholders.

FOR THE FOREGOING REASONS, THE BOARD OF DIRECTORS RECOMMENDS A VOTE AGAINST PROPOSAL NO. 3

EXECUTIVE COMPENSATION

2006 Compensation Discussion and Analysis

This 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 (Stephen G. Bassett), and the three most highly compensated other executive officers serving as executive officers at December 31, 2006 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 2006.

Compensation Principles and Tools

The Company's executive compensation program is designed to:

- (1) retain executive talent by offering compensation that is commensurate with pay at other companies of a similar size in the same or similar industries, as adjusted for individual factors; and
- (2) drive executive performance by having pay at risk so actual pay is tied to goal achievement and individual performance.

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" elsewhere in this Proxy Statement. Executive compensation for incumbent executives is reviewed annually.

Executive compensation decision-making begins by determining the level and mix of types (base, incentive and equity) of compensation for a particular position that are paid by similar companies for comparable positions. In 2006, the Committee reviewed a report from an external compensation consultant that compared the compensation of each of the Axcelis executives against the compensation paid for similar positions in a peer group of 11 publicly traded firms in the semiconductor equipment industry, which are referred to in this discussion as the "Peer Group." These 11 companies (Advanced Energy Industries, Asyst Technologies, Brooks Automation, KLA Tencor, Lam Research, Mattson Technology, MKS Instruments, Novellus Systems, Semitool, Teradyne and Varian Semiconductor Equipment Associates) are among the principal firms in the semiconductor capital equipment industry. The median revenues for the Peer Group over the 12 month period prior to the report were \$560.9 million in comparison to \$370.4 million for the Company in the same period.

The Compensation Committee sets compensation by using this information together with an evaluation of the unique education, training and experience of the executive officer and his or her overall value to the Company. Factors considered by the Compensation Committee in valuing the NEO's services include the executive's contributions to the Company's competitive position in the marketplace, individual performance, and the past and expected contribution by the executive officer toward the achievement of the Company's performance objectives. While the benchmarking information is a very important starting point, this subjective review is necessary to ensure that the level and mix of types of executive compensation is appropriate for the particular individual and will drive the performance of the executive.

All elements of an executive's 2006 compensation were reviewed in the context of the executive's total compensation. This was done by reviewing comprehensive reports on each executive's current and historical base and annual incentive cash compensation, equity portfolio and contractual arrangements with the Company. The Committee had no pre-established policy or target for the allocation between cash and non-cash compensation or between short-term and long-term incentive compensation. It determined such allocations based on the factors discussed below.

Material Elements of Named Executive Officer Compensation

The key elements of NEO compensation are: base salaries; an annual cash incentive program; equity compensation; and a “double-trigger” Change of Control Agreement. Executives also may participate, on the same terms as all other employees, in an Employee Stock Purchase Plan, a 401(k) retirement savings plan and health and welfare benefits.

The following discussion seeks to explain why Axcelis has chosen to pay each compensation element, how Axcelis determines the amount of each element, and how the element and the Company’s decisions regarding that element in 2006 fit into the Company’s overall compensation objectives and affect decisions regarding other elements.

Base Salary. The Company pays a base salary to each of its NEOs. The objective is to provide base compensation to the executive which is competitive with base compensation the executive could earn in a similar position at other companies. Base pay for NEOs is set on commencement of employment with the Company and annually reviewed thereafter. The process of fixing and adjusting base pay involves the Committee’s review of peer group benchmark compensation and subjective considerations, as discussed above. Typically, the Chief Executive Officer makes recommendations to the Compensation Committee with regard to base pay for the other executive officers that she believes are justified in light of these considerations. In fixing or adjusting base pay, the Committee considers the impact increases in base pay will have on annual incentive cash compensation and equity grants, which are both currently based on a percentage of base pay.

Increases in executive officer base pay are only made if the Committee determines that the executive’s current compensation is insufficient. This determination may be reached because the market pay for the position has increased, the executive has taken on additional responsibilities, or the value of the executive to the Company has increased due to exceptional performance. At its meeting in August 2006, the Compensation Committee reviewed the cash compensation of each incumbent executive, including the named executive officers. In doing so, the Committee reviewed the Peer Group report for each position and subjective factors relating to each executive. The Peer Group report showed that on average, the base compensation of the Company’s nine executive officers was at the 55th percentile of the compensation paid in the Peer Group for comparable positions.

As a result of this process, in 2006 only one of the named executive officers, Matthew Flynn, had an adjustment in base salary, which became effective on August 19, 2006. Mr. Flynn’s base pay had last been adjusted in May 2005. No adjustments were made in 2006 to the base pay of Ms. Puma (which was last adjusted in July 2004), Mr. Bassett (which has not changed since he joined the Company in 2003), Ms. Fallon (which was last adjusted in January 2004) or Mr. Brewer (which was last adjusted in May 2005). In 2006, the base pay of these four NEOs was determined to be adequate by the Committee in light of the Peer Group report and subjective factors.

Annual Cash Incentive. Axcelis offers an annual cash incentive target as part of executive compensation to incent and reward the executive to achieve specific company goals. Although executives understand that the payout under a cash incentive program will depend on the Company’s performance overall and the executive’s individual performance, the stated cash incentive target for a particular position is an important part of a competitive compensation package to attract and retain executives. NEOs at Axcelis participate along with all other employees in an annual cash incentive plan called the Axcelis Team Incentive plan. Annual cash incentive compensation under the Axcelis Team Incentive plan is the result of a four step process, in which the Compensation Committee:

- (1) sets the officer’s cash incentive target, as a percentage of the officer’s actual base earnings for the year (this is done at hire and reviewed annually);

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- (2) approves, at its first meeting in each calendar year, the specific annual financial and operational goals that will drive the payout under the plan and the weighting of each goal;
- (3) determines, after the conclusion of each year, the payout under the plan by fixing the “Company Performance Score” based on goal achievement; and
- (4) determines each executive officer’s individual performance score to reflect the officer’s performance during the course of the year.

Each of these steps is discussed in more detail below.

Cash Incentive Targets. Cash incentive targets are fixed and adjusted based on the annual review of cash compensation at comparable companies, such as the Peer Group used in 2006, and subjective factors discussed above. Typically, the Chief Executive Officer makes recommendations to the Compensation Committee with regard to the initial and subsequent executive officer incentive targets that she believes are justified. At its meeting in August 2006, the Compensation Committee reviewed the cash incentive compensation of each incumbent executive, including the named executive officers. The Peer Group report showed that, on average, the target total cash compensation (base plus cash incentive) of the Company’s nine executive officers was at the 55th percentile of the compensation paid in the Peer Group for comparable positions, and the average actual total cash compensation of the group was at the 50th percentile of the Peer Group comparables.

As a result of this process, in 2006 only one of the named executive officers, Matthew Flynn, had an adjustment in his cash incentive target, which became effective on August 19, 2006. Mr. Flynn’s cash incentive target had last been adjusted in June 2005. No adjustments were made in 2006 to the cash incentive targets of Ms. Puma (which was last adjusted in July 2003), Mr. Bassett (which was last adjusted in June 2005), Ms. Fallon (which was last adjusted in June 2005) or Mr. Brewer (which was last adjusted in June 2005). In 2006, the cash incentive targets of these four NEOs were determined to be adequate by the Committee in light of the Peer Group report and subjective factors.

The current target opportunities for the NEOs under the 2006 Axcelis Team Incentive plan are fixed at percentages of base compensation ranging from 50%, in the case of Mr. Brewer, to 60%, in the cases of Mr. Flynn, Mr. Bassett and Ms. Fallon, to 100%, in the case of Ms. Puma.

Structure of the Axcelis Team Incentive Plan. The 2006 Axcelis Team Incentive plan Company Performance Score was based 70% on financial goals and 30% on non-financial operational goals. The Company Performance Score may range from 0% to 200%, based on goal achievement. A 100% Company Performance Score results in each executive having the opportunity to receive his or her target cash incentive, subject to adjustment for an individual performance score, which can range from 0% to 150%. The financial goals in the 2006 Axcelis Team Incentive plan were derived from the Company’s profit plan for 2006, and included specific targets for 2006 revenues, gross margin, pre-tax profit and cash generation. Since these financial targets are set at the beginning of the year, they will vary from publicly-announced quarterly financial guidance as the Company’s anticipated performance changes during the

year. The plan also requires the Committee to consider factors relating to the quality of the financial results (such as sources of revenue, whether operational improvements impacted gross margin, and whether certain types of investment impacted earnings) as well as the actual quantitative results. The operational goals are derived from the Company's 2006 strategic plan and include multiple detailed targets in the areas of product development and customer relationships, such as goals to ship initial new products and penetrate specific numbers of new customers.

The Compensation Committee believes that achievement of each of the specific 2006 goals was challenging, but attainable. These goals were formulated in the same way as past Axcelis Team Incentive plan goals. Over the five years ending with 2006, the Company Performance Scores have ranged from a low

of 0% to a high of 123%, illustrating the variability of achievement of these types of goals and therefore the inherent challenge to management.

Determination of the 2006 Company Performance Score. In its meetings throughout 2006, the Compensation Committee monitored the Company's performance against the Axcelis Team Incentive goals. In February 2007, the Committee determined that the Company's performance against the 2006 financial goals scored at 86.71% against a target of 70%. Based on management's report on its performance against operational goals, the Committee determined that the Company's performance against the operational goals drove a 19.35% score out of a target of 30%. These scores resulted in an aggregate Company Performance Score of 106%.

Determination of the 2006 Individual Performance Scores for Each Named Executive Officer. Also in February 2007, the Compensation Committee established the 2006 individual performance score for each NEO. The Committee made this assessment based on the executive's achievement of his or her personal and team goals set at the beginning of the year, taking into account the Chief Executive Officer's recommendation and the business results in the executive's area of responsibility. The individual performance scores were 105% for the Chief Executive Officer and an average of 106% for the other NEOs. The resulting amounts paid to the NEOs under the 2006 Axcelis Team Incentive Plan are set forth in the "Non-equity incentive plan compensation" column in the Summary Compensation Table in this Proxy Statement.

Long Term Incentive Compensation through Equity. The Compensation Committee also grants the NEOs equity compensation under the 2000 Stock Plan. Equity compensation for NEOs, which has taken the form of stock options and restricted stock units, is designed to align the interests of executives with our investors and to retain executives during multi-year vesting periods. Equity grants are a key retention device as a result of vesting provisions which typically extend over four years. 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. In the case of the NEOs, the required ownership ranges from 20,000 shares in the case of Ms. Puma to 12,000 shares in the case of the other NEOs. These levels were set to create meaningful investments by executives in shares of the Company, so that their interest in the value of the Company's stock was not limited to stock price appreciation via options without a downside.

Equity grants are also intended to drive performance, in that the value ultimately realized is linked to stock price appreciation. Option grants have no value without stock price appreciation, and restricted stock units have value at grant that can increase with stock price appreciation. Thus, equity grants should constructively influence management's motivation to enhance the value of the Company's stock.

Equity grants to executives are made upon hire and, typically, thereafter on an annual basis. Annual equity grants to executive officers have been made in most years in order to ensure a meaningful retentive effect by maintaining the percentage of the executive's equity position that is unvested.

Form, Size and Timing of Equity Grants. The Compensation Committee determines the form of equity grants made to the NEOs. The 2000 Stock Plan permits the Compensation Committee to award several different forms of equity rights, including restricted stock, restricted stock units, incentive stock options and non-qualified stock options. Past equity grants to NEOs have taken the form of non-qualified stock options and restricted stock units. From the Company's initial public offering through 2004, the executive officers received annual stock option grants in the Company's annual equity program.

In 2005, the Compensation Committee determined that restricted stock units were an attractive form of equity grants in light of required equity compensation expensing under Financial Accounting Standard 123(R), which took effect January 1, 2006. Under FAS 123(R), the expense the Company records with respect to option grants can be much greater than the perceived value of those grants or the value

ultimately delivered to the recipient. Providing "whole share" equity compensation allows the Committee to better align the expense to the Company of executive equity grants with the perceived value of such grants by the executive at the current time.

In the Compensation Committee's meeting in June 2005, the Committee reviewed the then current option portfolios of the executive officers and concluded that these options did not offer any substantial retention benefit or alignment with stockholders, in light of their high exercise prices. At that time, the Committee had significant concerns regarding the retention of the executive team due to recent executive departures, a recent reorganization of the Company's functions and the Company's financial condition and product alignment situation. The Committee determined, with the advice of compensation consultants, that for an equity portfolio to have a meaningful retentive effect on an executive, it should have a value of approximately three times the annual base compensation of the executive.

Based on this information, in 2005, the Committee commenced a program to reach the recommended level of equity portfolio value over the course of a three-year period using restricted stock unit grants. The Compensation Committee made an initial restricted stock unit grant to executive officers in 2005 and expressed an intention to make additional restricted stock unit grants to each of the executive officers employed in good standing with the Company in 2006 and 2007 in amounts equal to 100% of such executive's base salary in effect at the time of grant. Accordingly, in 2006, after reviewing the values of each executive's equity portfolio, the Committee made an additional grant of restricted stock units to each executive officer, including the NEOs, having a value at grant equal to one times salary. These grants are set forth in the Grants of Plan-Based Awards in Fiscal 2006 table below.

The 2006 restricted stock unit grants to NEOs were approved by the Compensation Committee at a regularly scheduled meeting on May 3, 2006. The Committee's approval specified that the grant would become effective on July 3, 2006. It is the Committee's general practice to approve equity awards at a single annual regularly scheduled meeting, with a future effective date, typically four to eight weeks after the meeting date. 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, felt 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.

Vesting Provisions. Restricted stock units granted to executives will forfeit in the event of a termination of employment prior to vesting. In setting the vesting provisions for the restricted stock unit grants to named executive officers in 2006, the Committee sought to optimize the retentive effect of such equity grants by setting the vest date for 50% of the grant on each of the third and fourth anniversaries of the grant date. The Committee sought to provide additional incentive and reward through these equity grants by allowing for the acceleration of the vesting of 50% of the grants in the event that the market capitalization of the Company exceeds \$1 billion and of the other 50% of the grants in the event that the market capitalization of the Company exceeds \$1.3 billion, but not earlier than the second anniversary of the grant date.

Change of Control Agreements

Part of the Company's executive compensation package is a "double-trigger" Change of Control Agreement. These agreements were entered into with each NEO on assumption of the position of an executive officer. These Change of Control Agreements are referred to as "double trigger" because they only provide for payment in the event of (1) a change of control of the Company that is (2) followed by or preceded by the termination of employment of the executive for reasons other than voluntary resignation, cause, death or disability. The Committee believes that these Change of Control Agreements are a part of a competitive compensation package and will assist in the retention of critical talent if a possible or actual

change of control should arise. It is important in a change of control to retain executive talent both to assist in the completion of the transaction and to be able to deliver all or a specified member of the management to an acquirer if that is a condition of closing. Under the Change of Control Agreements, an officer's resignation because of a demotion or reduction in compensation, benefits or position is a termination by us and is not a voluntary resignation. This type of "good reason" termination is needed to ensure that the executive's position after a change of control is in fact substantively the same as the executive's position prior to the change of control.

The Axcelis Change of Control Agreements have two material elements: (A) a lump sum cash payment equal to three years' base salary and estimated cash incentive and (B) acceleration of the unvested portion of the executive's options or restricted stock units. As shown in the table under the heading "Payments on Termination or Change in Control—Change of Control Agreements," the Company will make an additional payment to the NEOs to insulate them from the impact of excise taxes due under Sections 280G and 4999 of the Internal Revenue Code (IRC). The effects of Sections 280G and 4999 generally are unpredictable and can have widely divergent and unexpected effects based on an executive's personal compensation history. Therefore, to provide a predictable and equal level of benefit across individuals without regard to the effect of the excise tax, the Company determined that it was appropriate to pay the cost of this excise tax plus an amount needed to pay income taxes due on such additional payment. This practice is consistent with competitive pay packages and ensures the executive will receive the three years base salary and estimated cash incentive less only ordinary income taxes on that amount.

The Company believes that these particular elements will assist in retaining executive talent through a change of control event because the cash payment and the ability to access the value in otherwise unvested equity grants will insulate the executive from the hardship of the loss of the executive's job.

The Company has the right each year to terminate its obligation to make change of control payments effective on the date three years after the next anniversary date of the agreement. To do so, the Company must provide notice of non-renewal to the executive prior to such anniversary date. At its August 2006 meeting, the Compensation Committee reviewed payments that would have been due under these agreements if the change of control had occurred midyear. This review did not lead to a conclusion that the Change of Control Agreements were no longer appropriate, and therefore the Company did not provide a termination notice to any executive officer in 2006. Additional information on these Change of Control Agreements is provided under "Payments on Termination or Change of Control" below.

Other Compensation Components

In order to encourage our executives to obtain adequate financial and tax planning assistance, Axcelis reimburses up to \$5,500 of an executive's annual tax and financial planning expenses. This program is the only executive perquisite at Axcelis and amounts paid to NEOs in 2006 under this program are included in the "All other compensation" column in the Summary Compensation Table.

Executives may elect to make contributions to a retirement account in the Company's IRC Section 401(k) plan, which is available to all employees and under which the Company made a matching contribution to each participant in 2006. The matching contribution under the 401(k) Plan is the greater of (1) 100% of the employee's pre-tax contributions to the plan, capped at a \$1,000, or (2) 50% of the employee's pre-tax contributions to the plan, up to the first 6% of eligible pre-tax compensation contributed to the plan. The Company's matching contributions to the accounts of the NEOs under the 401(k) plan are shown in the "All other compensation" column in the Summary Compensation Table.

NEOs may also participate in the Company's medical and dental insurance offerings by electing to make payroll deductions designed to cover approximately 25% of the cost of those programs (the Company covers the other 75% of the cost). The Company provides life, accidental death and

dismemberment and disability insurance for all employees, and the opportunity to increase coverage levels via payroll deductions. Finally, the Company maintains the Employee Stock Purchase Plan, an IRC Section 423 plan, a voluntary plan in which employees may purchase Axcelis shares through salary deductions.

Tax Implications

In setting NEO compensation, the Committee takes into account the impact of IRC Section 162(m), which bars the Company from taking a tax deduction for compensation for any NEO that exceeds \$1 million, subject to exceptions for certain performance-based compensation. To the extent that compensation under the Axcelis Team Incentive plan and/or in the form of restricted stock units causes the total compensation paid to an NEO to exceed \$1 million in any year, such excess compensation would not be tax deductible to the Company. In the case of cash incentive payments, this is because certain components of the Axcelis Team Incentive plan, such as the Committee's determination that some operational and individual performance goals have been achieved, require subjectivity that does not meet the requirements of Section 162(m). In the case of restricted stock unit awards, it is because vesting is based on the length of the NEO's service, which is not performance-based for purposes of Section 162(m).

The Compensation Committee believes that the structure of the Axcelis Team Incentive plan provides benefits to the Company that outweigh the potential tax deductions that might be available (at the levels potentially realizable under the current plan) if the plan included only objective performance measures. It also believes that the benefits of the use of service-based restricted stock units to provide long-term incentives outweigh the potential loss of tax deductions from such equity compensation. To date, the Company's tax deductions for compensation have not been limited by Section 162(m) except in connection with the Axcelis Team Incentive bonuses paid to the Chief Executive Officer with respect to 2004 and 2006. The Committee expects to continue to take Section 162(m) into account as it makes decisions in future years and may modify the forms of compensation used accordingly.

In addition, the Committee considers the impact of IRC Section 409A, which imposes certain requirements on "nonqualified deferred compensation plans." These may be particularly relevant in the case of compensation paid after termination of an NEO's employment under the Change of Control Agreements discussed above. The Company believes that this compensation is in compliance with the applicable requirements of Section 409A.

2006 Compensation Committee Report

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

By the Compensation Committee,

H. Brian Thompson, Chairman
R. John Fletcher
Stephen R. Hardis

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2006 Summary Compensation Table

The Summary Compensation Table below sets forth the 2006 salary, value of stock and option awards expensed by the Company in 2006, the 2006 Axcelis Team Incentive plan compensation and all other compensation paid in respect of 2006 to each of the Company's principal executive officer (Mary G. Puma), principal financial officer (Stephen G. Bassett), and the three most highly compensated other executive officers serving as executive officers at December 31, 2006. The terms of the 2006 Axcelis Team Incentive plan are set forth in detail in the Compensation Discussion and Analysis above.

<u>Name and Principal Position</u>	<u>Year</u>	<u>Salary \$(1)</u>	<u>Stock awards \$(2)</u>	<u>Option awards \$(2)</u>	<u>Non-equity incentive plan compensation \$(3)</u>	<u>All other compensation \$(4)</u>	<u>Total \$(5)</u>
Mary G. Puma, <i>Chairman, Chief Executive Officer and President</i>	2006	\$ 500,001	\$ 197,690	\$ 249,407	\$ 556,501	\$ 6,600	\$ 1,510,199
Stephen G. Bassett, <i>Executive Vice President and Chief Financial Officer</i>	2006	\$ 275,999	\$ 109,125	\$ 27,111	\$ 175,536	\$ 0	\$ 587,771
Matthew P. Flynn, <i>Senior Vice President, Customer Operations</i>	2006	\$ 288,847	\$ 143,080	\$ 47,736	\$ 197,194	\$ 6,600	\$ 683,457
Lynnette C. Fallon, <i>Executive Vice President HR/Legal and General Counsel</i>	2006	\$ 305,001	\$ 120,590	\$ 68,822	\$ 193,981	\$ 6,600	\$ 694,994
Kevin J. Brewer, <i>Senior Vice President, Manufacturing Operations</i>	2006	\$ 249,999	\$ 130,074	\$ 40,259	\$ 139,125	\$ 7,160	\$ 566,617

- (1) Other than Ms. Puma, the named executive officers (NEOs) do not have employment agreements. Ms. Puma's employment agreement is described under the heading "Payments on Termination or Change in Control" in this Proxy Statement.
- (2) Represents the compensation expense incurred by the Company relating to stock awards and option awards held by the NEO determined in accordance with FAS 123(R), using the assumptions described in Note 15 to the Company's Financial Statements included in the Form 10-K filed with the Securities and Exchange Commission for the year ended December 31, 2006 (the 2006 10-K), provided that no forfeitures of awards have been assumed for the NEOs.
- (3) Non-equity incentive plan compensation represents amounts that were paid under the 2006 Axcelis Team Incentive plan, as described in the Compensation Discussion and Analysis above.
- (4) The amounts in this column represent 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 and amounts reimbursed under the Company's Executive Tax and Financial Planning Reimbursement Program.
- (5) The proportion that an NEO's salary and non-equity incentive compensation bears to the NEO's total compensation is largely a result of the various factors involved in the calculation of the payout under the Axcelis Team Incentive plan as described in the Compensation Discussion and Analysis above.

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Grants of Plan Based Awards in Fiscal 2006

Name	Year	Grant Date	Date of Compensation Committee Approval	Estimated Possible Payouts Under Non-Equity Incentive Plan Awards (1)		All Other Stock Awards: Number of Shares of Stock or Units (#)(2)	Grant Date Fair Value of Stock and Option Awards
				Target (\$)	Maximum (\$)		
Mary G. Puma	2006	7/3/2006	5/3/2006			83,333	\$ 499,998
			2/1/2006	\$ 500,000	\$ 1,500,000		
Stephen G. Bassett	2006	7/3/2006	5/3/2006			46,000	\$ 276,000
			2/1/2006	\$ 155,028	\$ 465,083		
Matthew P. Flynn	2006	7/3/2006	5/3/2006			45,833	\$ 274,998
			2/1/2006	\$ 189,000	\$ 567,000		
Lynnette C. Fallon	2006	7/3/2006	5/3/2006			50,833	\$ 304,998
			2/1/2006	\$ 183,000	\$ 549,000		
Kevin J. Brewer	2006	7/3/2006	5/3/2006			41,667	\$ 250,002
			2/1/2006	\$ 125,000	\$ 375,000		

- (1) Estimated Possible Payouts under Non-Equity Incentive Plan represent amounts that were targeted and possible under the 2006 Axcelis Team Incentive plan, approved by the Compensation Committee on February 1, 2006, as discussed in the Compensation Discussion and Analysis above. The minimum payment under this plan is \$0.00. All payouts under this plan are subject to the discretion of the Board of Directors and the executives have no contractual right to receive any payment thereunder. Actual payments under the 2006 Axcelis Team Incentive plan were determined by the Compensation Committee in February 2007 and are shown in the Summary Compensation Table above.
- (2) The only equity awards issued to NEOs during 2006 were restricted stock units granted under the Company's 2000 Stock Plan granted effective July 3, 2006. Half of these units will vest on July 3, 2009 and the remaining half of the units will vest on July 3, 2010 (in each case subject to acceleration on achievement of a market capitalization goal as discussed in the Compensation Discussion and Analysis), provided however, that such vesting shall in no event be earlier than July 3, 2008. Other than future services to the Company, no consideration was paid or will be due in respect of these restricted stock units or the shares issued thereon. These restricted stock units will be forfeited if the NEO's employment terminates prior to vesting. No dividends on the shares underlying these units are paid until the shares are issued.

Outstanding Equity Awards at Fiscal 2006 Year End

Name		Option Awards				Stock Awards	
		Number of Securities Underlying Unexercised Options (#) Exercisable	Number of Securities Underlying Unexercised Options (#) Unexercisable	Option Exercise Price (\$)	Option Expiration Date	Number of Shares or Units of Stock that Have Not Vested(#)	Market Value of Shares or Units of Stock that Have Not Vested (\$)(14)
Mary G. Puma	1					72,569	\$ 423,077.27
	2					83,333	\$ 485,831.39
		606,100	0	\$ 22.00	7/10/2010		
		12,705	0	\$ 10.44	1/27/2008		
		84,699	0	\$ 8.44	1/25/2010		
		177,870	0	\$ 8.43	1/26/2009		
		100,000	0	\$ 10.28	6/21/2012		
		100,000	0	\$ 5.85	6/21/2012		
	3	93,750	31,250	\$ 5.70	5/1/2013		
	4	125,000	0	\$ 11.48	5/1/2013		
	5	100,000	0	\$ 11.87	6/25/2014		
6	50,000	50,000	\$ 7.97	6/25/2014			
Stephen G. Bassett	1					40,058	\$ 233,538.14
	2					46,000	\$ 268,180.00
	7	20,000	\$ 0	\$ 9.90	12/18/2013		
	6	25,000	\$ 0	\$ 11.87	6/25/2014		
Matthew P. Flynn	6	12,500	12,500	\$ 7.97	6/25/2014		
	1					59,869	\$ 349,036.27
	2					45,833	\$ 267,206.39
		5,082	0	\$ 10.44	1/27/2008		
		2,329	0	\$ 8.43	1/26/2009		
		3,388	0	\$ 8.44	1/25/2010		
		4,500	0	\$ 22.00	7/10/2010		
		4,911	0	\$ 14.10	1/7/1900		
		4,910	0	\$ 13.20	7/31/2011		
		5,000	0	\$ 10.28	6/21/2012		
		15,500	0	\$ 6.88	11/5/2012		
	3,750	0	\$ 5.85	6/21/2012			
3	11,250	3,750	\$ 5.70	5/1/2013			
8	15,000	0	\$ 11.48	5/1/2013			
9	15,000	0	\$ 11.87	6/25/2014			
6	7,500	7,500	\$ 7.97	6/25/2014			
Lynnette C. Fallon	1					44,267	\$ 258,076.61
	2					50,833	\$ 296,356.39
		27,000		\$ 11.75	4/9/2011		
		13,500		\$ 14.10	7/30/2011		
		13,500		\$ 13.20	7/30/2011		
		30,000		\$ 10.28	6/21/2012		
		30,000		\$ 5.85	6/21/2012		
	3	22,500	7,500	\$ 5.70	5/1/2013		
	10	30,000		\$ 11.48	5/1/2013		
	11	30,000		\$ 11.87	6/25/2014		
	6	15,000	15,000	\$ 7.97	6/25/2014		
Kevin J. Brewer	1					54,427	\$ 317,309.41
	2					41,667	\$ 242,918.61
		12,705	0	\$ 8.44	1/25/2010		
		7,200	0	\$ 22.00	7/10/2010		
		10,715	0	\$ 14.10	7/30/2011		
		10,714	0	\$ 13.20	7/30/2011		
		7,143	0	\$ 10.28	6/21/2012		
		15,000	0	\$ 6.88	11/5/2012		

3	7,143	0	\$ 5.85	6/21/2012
12	10,000	2500	\$ 5.70	5/1/2013
13	15,000	0	\$ 11.48	5/1/2013
6	7,500	0	\$ 11.87	6/25/2014
		7,500	\$ 7.97	6/25/2014

- (1) These restricted stock units vest as to 1/3 of the shares on each of July 1, 2007, 2008 and 2009.
- (2) These restricted stock units vest as to 50% of the shares on July 3, 2009 and 2010, provided that such vesting may accelerate, but not earlier than July 3, 2008, on achievement of market capitalization targets.

- (3) The unexercisable options will become exercisable on May 1, 2007.
- (4) Of the shares that may be acquired on exercise of these options, 31,250 may not be sold by the executive until after May 1, 2007.
- (5) Of the shares that may be acquired on exercise of these options, 25,000 may not be sold by the executive until after June 25, 2007 and 25,000 may not be sold by the executive until after June 25, 2008.
- (6) Half of the unexercisable options will become exercisable on each of June 25, 2007 and June 25, 2008.
- (7) Of the shares that may be acquired on exercise of these options, 6,250 may not be sold by the executive until after June 25, 2007 and 6,250 may not be sold by the executive until after June 25, 2008.
- (8) Of the shares that may be acquired on exercise of these options, 3,750 may not be sold by the executive until after May 1, 2007.
- (9) Of the shares that may be acquired on exercise of these options, 3,750 may not be sold by the executive until after June 25, 2007 and 3,750 may not be sold by the executive until after June 25, 2008.
- (10) Of the shares that may be acquired on exercise of these options, 7,500 may not be sold by the executive until after May 1, 2007.
- (11) Of the shares that may be acquired on exercise of these options, 7,500 may not be sold by the executive until after June 25, 2007 and 7,500 may not be sold by the executive until after June 25, 2008.
- (12) Of the shares that may be acquired on exercise of these options, 2,500 may not be sold by the executive until after May 1, 2007.
- (13) Of the shares that may be acquired on exercise of these options, 3,750 may not be sold by the executive until after June 25, 2007 and 3,750 may not be sold by the executive until after June 25, 2008.
- (14) Using closing market price on December 29, 2006 of \$5.83

Option Exercises and Stock Vested During Fiscal 2006

None of the named executive officers exercised options or had any unvested stock vest during fiscal year 2006.

Payments on Termination or Change in Control

Employment Agreement with Ms. Puma. We entered into an Employment Agreement with Ms. Puma effective in July 2000. This agreement provided for an initial three-year term of employment at a minimum annual base salary of \$380,000 and an annual target incentive compensation opportunity of 45% of base salary. Actual incentive compensation for any year may be greater or less if actual performance is greater or less than the target. Ms. Puma's base salary and incentive opportunities were increased by our Board of Directors in the past, and may be subject to future adjustment by the Board, but not to less than the minimum levels in her Employment Agreement. See "Compensation Discussion and Analysis" above. The term of Ms. Puma's agreement automatically renews on a year-to-year basis unless one party notifies the other that the agreement will not be extended. Such termination notice must be sent between January 14th and March 14th of each year. Since no termination notice was sent prior to March 14, 2007, the agreement will continue until July 14, 2008, subject to further renewal. The agreement also provides that Ms. Puma will participate in the 2000 Stock Plan, the 401(k) savings plan and the welfare benefit plans that we sponsor. In the agreement, Ms. Puma has agreed not to compete with us for a period of 12 months after termination of her active employment and not to reveal confidential information during the term of her employment and thereafter, unless the information has otherwise become public knowledge.

In the event Ms. Puma's employment is terminated prior to the end of the term for reasons other than cause, death, disability or voluntary resignation without "good reason," she is entitled to receive all compensation accrued to date, acceleration of vesting of options and other equity rights and a cash separation payment. The cash separation payment will equal 24 months of her base compensation and 2 times an annual bonus amount determined in accordance with the agreement. For this purpose, Ms. Puma's annual bonus compensation will be her current base multiplied by the greater of (a) the percentage of her base that she actually received as a bonus for the prior fiscal year or (b) 25%. The following table sets forth the separation pay that would be due to Ms. Puma if a qualifying termination occurred on December 31, 2006:

Lump sum cash payment(1)	Value of accelerated vesting on equity awards(2)	Value of life, disability and health coverage(3)	Total
\$1,440,000	\$ 912,972	\$ 57,454	\$ 2,410,426

- (1) This represents 24 months of Ms. Puma's base salary at December 31, 2006 plus two times an annual bonus amount. The annual bonus amount is a percentage of her current base salary equaling the percentage of her base salary paid to her as a bonus in respect of the 2005 fiscal year. This amount is due within 30 days of termination.
- (2) This amount reflects a valuation of the acceleration of Ms. Puma's outstanding equity awards calculated in accordance with IRC 280G. The actual amount received by Ms. Puma on exercise of options and sales of shares issued on restricted stock units will depend on the market values at the time of such transactions.
- (3) Ms. Puma's employment agreement provides that the Company shall either maintain Ms. Puma's life, disability and health coverage for 24 months, or pay Ms. Puma two times the projected cost of these benefits in a lump sum. The amount in the table represents an estimation of the cost to the Company of maintaining such benefits, based on the terms of the plans, the premiums in effect at the time of this Proxy Statement, premiums available for similar coverage for non-employees in the market place and Ms. Puma's coverage elections.

In the event of an actual termination of Ms. Puma's employment, it is possible that her separation pay would be renegotiated by Ms. Puma and the Board of Directors, in which case the amounts payable might differ from the foregoing.

Change of Control Agreements. The Company has entered into a Change of Control Agreement with each of our executive officers, including Ms. Puma, to provide that severance compensation will be paid in a lump sum within 30 days of a covered termination following a change in control, as

defined in the agreement. These Change of Control Agreements provide that executive officers are entitled to severance compensation in the event there is both (1) a change in control and (2) a termination of employment within three years of that change in control for reasons other than voluntary resignation, cause, death or disability. Under the Change of Control Agreements, a resignation by an officer for reasons of a demotion or reduction in compensation, benefits or position is a termination by us and is not a voluntary resignation. A "change of control" is defined in the agreement and covers a number of events, including a merger or acquisition involving the Company in which the persons holding the Company's shares immediately prior to the transaction hold less than 75% of the shares outstanding after the transaction.

In these agreements, the executives have agreed not to be engaged by, or own, any business competing with any of the businesses conducted by the Company for a period of 12 months following any termination of employment (whether or not following a change of control). The executives also agreed not to solicit employees of the Company to leave employment with the Company or solicit or induce customers of the Company to cease doing business with the Company, during such period.

If severance compensation is payable, it would consist of a cash payment equal to the sum of (a) the Company's accrued obligations for base pay and incentive compensation and (b) the amount determined by multiplying the executive's then salary and average bonus by three. For this purpose, an executive's average bonus is his or her current bonus opportunity multiplied by the average of the individual performance scores given to the executive in the last three years, but without taking into account company performance scores. In the event such severance is payable, all unvested restricted stock units and options held by the executive will become vested until termination or expiration in accordance with their terms. We will also reimburse the executive for the effects, including federal, state and local income tax consequences, of any excise tax due on severance compensation, as shown the chart below.

The amounts due to each named executive officer in the event that a change of control and termination occurred on December 31, 2006 are set forth in the table below:

Estimated Payments under the Change of Control Agreements if due at December 31, 2006

Name	Lump sum cash payment(1)	Value of accelerated vesting on equity awards(2)	Excise Tax Due under IRC 280G, plus gross-up amount(3)	Total
Mary G. Puma	\$ 3,615,000	\$ 912,972	\$ 1,701,300	\$ 6,229,272
Stephen G. Bassett	\$ 1,490,400	\$ 501,718	\$ 726,739	\$ 2,718,857
Matthew P. Flynn	\$ 1,818,180	\$ 616,731	\$ 969,054	\$ 3,403,965
Lynnette C. Fallon	\$ 1,665,300	\$ 555,408	\$ 853,579	\$ 3,074,287
Kevin J. Brewer	\$ 1,238,375	\$ 560,553	\$ 654,998	\$ 2,453,926

- (1) This amount, which represents three times the NEO's current base salary plus an estimated bonus amount, is due within 30 days of termination.
- (2) This amount reflects a valuation of the acceleration of the NEO's outstanding equity awards calculated in accordance with IRC 280G. The actual amount received by the NEO on exercise of options and sales of shares issued on restricted stock units will depend on the market values at the time of the change of control.
- (3) As discussed in the Compensation Discussion and Analysis, the Change of Control Agreement with each NEO provides for the Company's reimbursement of the excise tax liability due on the separation pay under IRC Section 280G, which amount is grossed up to cover income taxes due on such reimbursement. Therefore, the amounts shown in this column represent amounts due to taxing authorities and will not be retained by the executive.

In the event Ms. Puma receives payment under her Change of Control Agreement, she will not receive amounts and benefits due under her Employment Agreement unless such amounts are in excess of the amounts paid under the Change of Control Agreement. Also, in the event of an actual termination of an NEO's employment in connection with a change of control, it is possible that the NEO's separation pay would be renegotiated by the NEO and the Board of Directors, in which case the amounts payable might differ from the foregoing.

COMPENSATION OF DIRECTORS

The Nominating and Governance Committee has responsibility under its charter to review and determine recommended non-employee director compensation for adoption by the full Board. All equity grants to non-employee directors are either made under automatic granting language in the 2000 Stock Plan or by the Compensation Committee on the recommendation of the Board of Directors.

2006 Director Fees. Mr. Hardis, the Lead Director, received an annual retainer, payable quarterly. Mr. Hardis' annual retainer was set at \$100,000 for the period from July 1, 2005 through June 30, 2006, at which time it was reduced to \$50,000 annually. Each non-employee director (other than Mr. Hardis) received an annual retainer of \$30,000 payable quarterly. In addition, each non-employee director (other than Mr. Hardis) assuming responsibility as Chairman of a committee of the Board of Directors received an annual retainer of \$7,500. Non-employee directors also receive cash fees for attendance at Board and committee meetings. Mr. Hardis did not receive meeting fees for meetings held prior to July 1, 2006. The meeting fees are: (1) \$2,000 for attendance in person at a meeting of the Board of Directors; (2) \$1,000 for attendance at a meeting of any committee of the Board of Directors; and (3) \$1,000 for participation in a telephonic meeting of the Board of Directors or committee of the Board of Directors. Fees are paid only to committee members with respect to attendance at a committee meeting. Non-employee directors also receive reimbursement of out-of-pocket expenses incurred in attending Board and committee meetings. Non-employee directors do not receive any Company-paid perquisites.

2006 Equity Awards. All non-employee directors of Axcelis receive an automatic initial stock option grants under our 2000 Stock Plan for 40,000 shares upon initial election to the Board. These non-employee director options have an exercise price equal to the closing price of our common stock on the grant date and are fully exercisable on the 181st day after the date the option is granted, provided the optionee is still a director on that date. The options have a term of ten years from the date of grant. Kirk Pond received an initial stock option grant upon his election to the Board in February 2006, but it was

forfeited prior to vesting on his resignation from the Board later that month. Mr. Wild received such an initial stock option grant upon his election to the Board in November 2006.

Also, effective July 3, 2006, the Compensation Committee approved the issuance under the 2000 Stock Plan of 8,333 shares of restricted stock to each of the non-employee directors elected in years prior to 2006. The number of restricted shares granted to each director had a value equal to \$50,000, based on the closing price on the date of grant. These restricted stock grants became fully vested on the 181st day after the date of grant if the director remained in service on that date. Long term ownership of equity awards by directors is encouraged through the Company's director stock ownership guidelines, which provide that non-employee directors should own a minimum of 20,000 shares of Axcelis common stock. This level was set to create meaningful investments by directors in shares of the Company, so that their interest in the value of the Company's stock was not limited to stock price appreciation via options without a downside.

The chart below shows compensation paid to all directors who served the Company during 2006 (both Mr. Cutler and Mr. Pond resigned during 2006):

2006 Non-Employee Director Compensation

Name	Fees earned or paid in cash (\$)	Stock awards (\$)(1)(2)	Option awards (\$)(1)(3)	Total (\$)
Alexander M. Cutler	\$ 11,500	\$ —	\$ —	\$ 11,500
R. John Fletcher	\$ 53,000	\$ 48,911	\$ —	\$ 101,911
Stephen R. Hardis	\$ 86,000	\$ 48,911	\$ —	\$ 134,911
William C. Jennings	\$ 57,500	\$ 48,911	\$ —	\$ 106,411
Michio Naruto	\$ 40,000	\$ 48,911	\$ —	\$ 88,911
Patrick H. Nettles	\$ 52,500	\$ 48,911	\$ —	\$ 101,411
Kirk P. Pond	\$ —	\$ —	\$ —	\$ —
H. Brian Thompson	\$ 60,500	\$ 48,911	\$ —	\$ 109,411
Geoffrey Wild	\$ 3,000	\$ —	\$ 38,904	\$ 41,904

- (1) Represents the compensation expense incurred by the Company relating to stock and option awards held by the Director during 2006 determined in accordance with FAS 123(R), using the assumptions

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described in Note 15 to the Company's Financial Statements included in the 2006 10-K, provided that no forfeitures of awards have been assumed.

- (2) On July 3, 2006, each of R. John Fletcher, Stephen Hardis, William C. Jennings, Michio Naruto, Patrick Nettles and H. Brian Thompson received a restricted stock grant for 8,333 shares of Axcelis common stock, vesting on January 3, 2007. The grant date fair value of this equity award was \$49,998.00. As of December 31, 2006, each of Messrs. Hardis, Fletcher, Thompson, Jennings and Nettles held an aggregate of 15,590 shares of common stock received as restricted stock grants from the Company. Mr. Wild does not hold any shares of common stock received as restricted stock grants from the Company.
- (3) On November 8, 2006, Geoffrey Wild received a non-qualified stock option grant for 40,000 shares of Axcelis common stock, exercisable at \$6.61 and vesting on May 8, 2007. The grant date fair value of this option was \$131,200. These are the only options held by Mr. Wild. As of December 31, 2006, the other non-employee directors in office held the following total stock options, all of which were fully vested and had exercise prices ranging from \$6.03 to \$16.63:

	Aggregate # of shares subject to outstanding options	Lowest exercise price	Highest exercise price
Fletcher	55,000	\$ 8.75	\$ 11.91
Hardis	100,000	\$ 6.08	\$ 16.63
Jennings	55,000	\$ 6.03	\$ 11.91
Naruto	40,000	\$ 6.09	\$ 6.09
Nettles	85,000	\$ 6.08	\$ 14.17
Thompson	85,000	\$ 6.08	\$ 13.22

CORPORATE GOVERNANCE

Board of Directors Independence and Meetings

The Board of Directors has determined that all directors who served on the Board during 2006, other than Ms. Puma, are or were independent under the criteria established by NASDAQ, and that the members of the Audit Committee also meet the additional independence requirements of the Securities and Exchange Commission. None of the directors, to the Company's knowledge, had any business, financial, family or other type of relationship with the Company or its management (other than as a director and stockholder of the Company), except for any relationships that the Board considered to be immaterial under the NASDAQ independence standards. In determining that each such director is independent, the Board was aware that the Company purchases and sells products and services in the ordinary course of business on arms-length business terms from and to companies (or their affiliates) at which certain directors are or have been employed as officers or serve as directors. During 2006, Messrs. Hardis, Cutler and Pond served as officers and/or directors of entities that purchased or sold products or services to or from the Company. In each case, the amount paid to or received from the other entity by the Company was below the total revenue threshold in the NASDAQ independence standards (that is, the greater of \$200,000 or 5% of the recipient's consolidated gross annual revenues). None of these relationships were determined by the Board determined to impair the independence of the respective directors.

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Our Board of Directors held nine meetings during 2006. Each of our incumbent directors attended at least 75% of the meetings of the Board and of the committees on which such director served. The average rate of attendance at Board and committee meetings for all current directors was 94%. All Board members whose terms continue after the annual meeting of stockholders are expected to attend the annual meeting of stockholders, subject to special circumstances. All current Board members then in office attended the annual meeting in 2006. Our Board has standing Audit, Compensation and Nominating and Governance Committees. Independent directors have regularly scheduled meetings at which only independent directors are present.

Compensation Committee

Until May 3, 2006, the Compensation Committee was composed of Mr. Thompson (Chairman), Mr. Hardis and Alexander M. Cutler, who resigned from the Board on that date. During the remainder of 2006, the Compensation Committee was composed of Mr. Thompson (Chairman), Mr. Hardis and Mr. Fletcher. 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 2006, the Compensation Committee met four times and acted once by written consent. The Compensation Committee operates under a written charter, a copy of which is available on our website at www.axcelis.com.

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

The Compensation Committee meets in the first quarter of each year to establish the goals and targets applicable to the executives' annual incentive compensation for the coming year, as well as to determine the results for the year just ended. The Compensation Committee usually makes annual equity grants in its second meeting in each year (which typically occurs in May or June), selecting a future date for the effectiveness of the annual equity grants, which is usually four to six weeks after the meeting date. Other compensation decisions are made throughout the year, as circumstances warrant and as described in detail in "Compensation Discussion and Analysis" above.

To support its decision-making processes, the Compensation Committee accesses the advice of an independent compensation consultant with respect to the structure and competitiveness of the Company's executive compensation programs, as well as the programs' consistency with the Company's executive compensation philosophy. The Committee has the sole authority to hire and fire all outside compensation consultants providing information and advice to the Committee. During 2006, the Compensation Committee's compensation consultant was Pearl Meyer & Partners. At the request of the Committee, management will make specific proposals to the Committee regarding compensation for executive officers. Management will often work with the Committee's outside consultant to ensure that the consultant has access to the appropriate information to enable the consultant to complete its analyses for the Committee. Management ensures that the consultant's invoices are paid from Company funds. The Chief Executive Officer, the Chief Financial Officer and the Executive VP HR/Legal usually participate in Compensation Committee meetings to present and discuss the material. After such a discussion, Mr. Bassett and Ms. Fallon will leave the meeting, allowing the Compensation Committee time to meet alone with Ms. Puma, after which she leaves the Committee in executive session. All decisions on executive compensation are made by the Compensation Committee in executive session without Ms. Puma.

For a discussion on the Compensation Committee's actions during 2006, see the "Compensation Discussion and Analysis" above.

Nominating and Governance Committee

During 2006, the Nominating and Governance Committee was composed of Mr. Nettles (Chairman), Mr. Hardis and Alexander M. Cutler, until Mr. Cutler's resignation from the Board in May. The Nominating and Governance Committee is responsible for identifying and nominating candidates for membership on the Board of Directors, making recommendations to the Board on non-employee director compensation and establishing governance policies for the Board and management. The Committee operates under a written charter and governance policies, copies of which are available on our website at www.axcelis.com. The Committee held four meetings in 2006.

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

The Nominating and Governance Committee seeks new nominees for election to the Board, when necessary, through a variety of channels, including the engagement of director search firms and less formal recommendations through business and personal contacts. Mr. Naruto, who is standing for election by the stockholders for the first time, was identified as a board candidate to the Nominating and Governance Committee by one of the other non-employee directors. Mr. Wild, who is also standing for election by the stockholders for the first time, was identified as a board candidate to the Nominating and Governance Committee by a third-party search firm. Director search firms engaged by the Company are paid a retainer fee to identify and screen candidates meeting specifications established by the Committee for a particular Board nominee search. Such specifications will change from one search to another based on the Committee's determination of the needs of Board composition at the time a particular search is initiated.

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

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

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. 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 Securities and Exchange Commission, the Nasdaq listing standards, and the Internal Revenue Code 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 recommend a candidate for consideration by the Nominating and Governance Committee, a stockholder must provide the Committee with the candidate's name, background and relationship with the proposing stockholder, a brief statement outlining the reasons the candidate would be an effective director of Axcelis and information relevant to the considerations described above. Such information should be sent to the Nominating and Governance Committee of Axcelis Technologies, Inc., 108 Cherry Hill Drive, Beverly, Massachusetts 01915, Attn: Corporate Secretary. The Committee may require further information.

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 internal and independent auditors. The Audit Committee has adopted procedures for the handling of complaints regarding accounting, internal controls and auditing matters which are described in our Code of Ethics. The Audit Committee's charter and the Company's Code of Ethics are both available on our website at www.axcelis.com. The Audit Committee met ten times during 2006. Until November 10, 2006, the Audit Committee consisted of Mr. Jennings (Chairman) and Messrs. Thompson and Fletcher. Beginning November 10, 2006, the Audit Committee consisted of Mr. Jennings (Chairman), and Messrs. Fletcher and Wild.

The Board of Directors has determined that each of Mr. Jennings, Mr. Fletcher and Mr. Wild are audit committee financial experts as defined in Item 401 of Regulation S-K promulgated by the Securities and Exchange Commission. The Board's conclusions regarding the qualifications of a director as an audit committee financial expert are based on his certification that he has (1) an understanding of generally accepted accounting principles and financial statements; (2) the ability to assess the general application of such principles in connection with the accounting for estimates, accruals and reserves; (3) experience preparing, auditing, analyzing or evaluating financial statements that present a breadth and level of complexity of accounting issues that are generally comparable to the breadth and complexity of issues that can reasonably be expected to be raised by the Company's financial statements, or experience actively supervising one or more persons engaged in such activities; (4) an understanding of internal controls and procedures for financial reporting; and (5) an understanding of audit committee functions.

For a report on the Audit Committee's actions during 2006, see the "2006 Audit Committee Report" below.

2006 Audit Committee Report

The Audit Committee schedules meetings to occur after the preparation of quarterly and annual financial statements but prior to the public release of financial results for the period. The Committee met in May, July and October of 2006, prior to the release of the financial results for the first, second and third quarters of 2006, respectively and in January 2007 prior to the release of our 2006 year-end results. If appropriate, additional meetings may also be held during the year to address a variety of recurring and non-recurring topics, such as the Company's internal control systems, the scope and results of the Company's internal audit plans, changes to the Audit Committee charter and other matters. In addition, throughout 2006, the Audit Committee provided oversight of the Company's preparations for management's assessment of its internal controls over financial reporting as required by Section 404 of the

Sarbanes Oxley Act of 2002. The Committee receives regular reports from management on this topic and confirmation of the processes and timing of preparation from the independent auditors.

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

At the recommendation of the Audit Committee, the Board of Directors appointed Ernst & Young LLP as our Independent Registered Public Accounting Firm to audit our financial statements for 2006. At the 2006 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, 2006 prepared by management and audited by Ernst & Young LLP, management's assessment of the effectiveness of our internal control over financial reporting and Ernst & Young LLP's evaluation of our internal control over financial reporting. In addition, the Committee received from the independent auditors (1) their annual written reports covering matters required to be discussed by the auditors with the Committee under Statement on Auditing Standards No. 61, *Communication with Audit Committees* and (2) their disclosures and the letter regarding independence from the Company and its management, which disclosures and letter are made under Independence Standards Board Standard No. 1, *Independence Discussions with Audit Committees*. Both items were discussed with the auditors and management at an Audit Committee meeting, including a discussion of any relationship that may impact the objectivity and independence of our auditors and whether the provision of any non-audit services by the auditors is compatible with maintaining their independence. The review included a discussion of the quality, not just the acceptability, of the accounting principles, the reasonableness of significant judgments, and the clarity of disclosures in the financial statements.

In reliance on these reviews and discussions, and the report of our Independent Registered Public Accounting Firm, the Audit Committee recommended to the Board of Directors that such audited financial statements be included in the Company's 2006 Annual Report on Form 10-K for filing with the Securities and Exchange Commission 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 above under "Proposal 2: Ratification of the Appointment of Our Independent Registered

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, which has the primary responsibility for financial statements and reports, and of the independent auditors, who in their report on the audited annual financial statements, express an opinion on the conformity of the Company’s annual financial statements to accounting principles generally accepted in the United States.

By the Audit Committee,

William C. Jennings, Chairman
R. John Fletcher
Geoffrey Wild

Code of Ethics

Axcelis has set forth its policy on ethical behavior in a document called “Ethical Business Conduct at Axcelis.” This policy applies to the members of our Board of Directors and all employees, including (but not limited to) our principal executive officer, principal financial officer, principal accounting officer or controller and persons performing similar functions. This policy comprises written standards that are reasonably designed to deter wrongdoing and to promote the behavior described in Item 406 of Regulation S-K promulgated by the Securities and Exchange Commission. The text of this code of ethics is posted on the Investors page of our website at www.axcelis.com, where we may also disclose any amendments to and waivers of the code.

Certain Relationships and Related Transactions

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

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

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

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

During 2006, 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 Independence and Meetings,” the Company has arms-length commercial dealings with companies of which certain directors are officers and/or directors, none of which are material individually or in the aggregate.

OTHER MATTERS

Stockholder Communications to the Directors

Security holders may communicate with the Axcelis Board of Directors by mailing a communication to the entire Board or to one or more individual directors in care of the Corporate Secretary, Axcelis Technologies, Inc., 108 Cherry Hill Drive, Beverly, Massachusetts 01915. All communications from

security holders to Board members (other than communications soliciting the purchase of products and services) will be promptly relayed to the Board members to whom the communication is addressed.

Compensation Committee Interlocks and Insider Participation

During 2006, the Compensation Committee of the Board of Directors consisted of Mr. Hardis, Mr. Cutler (until his resignation in May 2006), Mr. Fletcher (commencing May 2006) and Mr. Thompson, as Chairman, none of who has been an officer or employee of Axcelis or had a relationship during 2006 requiring disclosure under Item 404 of Regulation S-K.

Section 16(a) Beneficial Ownership Reporting Compliance

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

To our knowledge, based solely on our review of copies of reports furnished to us and written representations that no other reports were required, during 2006, our directors, officers, and 10% stockholders complied with all Section 16(a) filing requirements.

Deadlines for Stockholder Proposals

Assuming the 2008 annual meeting is not more than 30 days before or 30 days after May 9, 2008, if you wish to bring business before or propose director nominations at the 2008 annual meeting, you must give written notice to Axcelis by February 9, 2008 (the date 90 days before the anniversary of the 2007 annual meeting).

If you intend to bring proposed business to the 2008 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 prior to December 4, 2007 (120 days before the anniversary date of the mailing of this proxy statement), assuming the 2008 annual meeting is not more than 30 days before or 30 days after May 9, 2008.

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.



Axcelis Technologies, Inc.



MR A SAMPLE

DESIGNATION (IF ANY)

- ADD 1
- ADD 2
- ADD 3
- ADD 4
- ADD 5
- ADD 6

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Using a **black ink** pen, mark your votes with an X as shown in this example. Please do not write outside the designated areas.



Annual Meeting Proxy Card

▼ PLEASE FOLD ALONG THE PERFORATION, DETACH AND RETURN THE BOTTOM PORTION IN THE ENCLOSED ENVELOPE. ▼

A Proposals — The Board of Directors recommends a vote FOR all the listed nominees, FOR Proposal 2 and AGAINST Proposal 3.

1. Election of Directors:	For	Withhold		For	Withhold		For	Withhold	
01 - Geoffrey Wild	<input type="radio"/>	<input type="radio"/>	02 - Michio Naruto	<input type="radio"/>	<input type="radio"/>	03 - Patrick H. Nettles	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>

B Non-Voting Items

Change of Address — Please print new address below.

[Empty box for Change of Address]

Comments — Please print your comments below.

[Empty box for Comments]

C Authorized Signatures — This section must be completed for your vote to be counted. — **Date and Sign Below**

Please sign exactly as name(s) appears hereon. Joint owners should each sign. When signing as attorney, executor, administrator, corporate officer, trustee, guardian, or custodian, please give full title.

Date (mm/dd/yyyy) — Please print date below.

[Date input box with slashes]

Signature 1 — Please keep signature within the box.

[Signature 1 input box]

Signature 2 — Please keep signature within the box.

[Signature 2 input box]

C 1234567890

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MR A SAMPLE (THIS AREA IS SET UP TO ACCOMMODATE 140 CHARACTERS) MR A SAMPLE AND MR A SAMPLE AND MR A SAMPLE AND MR A SAMPLE AND MR A SAMPLE AND MR A SAMPLE AND MR A SAMPLE AND MR A SAMPLE AND

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THIS IS YOUR PROXY. YOUR VOTE IS IMPORTANT.

DO YOU NEED ASSISTANCE IN ANY OF THE FOLLOWING AREAS?

- **ADDRESS CHANGES - LEGAL TRANSFERS**
- **CONSOLIDATION OF ACCOUNTS -** ELIMINATE MULTIPLE ACCOUNTS FOR ONE HOLDER AND CERTAIN DUPLICATE SHAREHOLDER MAILINGS GOING TO ONE ADDRESS.

JUST CALL OUR TRANSFER AGENT'S TELEPHONE RESPONSE CENTER:

(781) 575-2725

OR WRITE TO:

COMPUTERSHARE TRUST CO., N.A.

P.O. BOX 43069

PROVIDENCE, RI 02940-3069

▼ PLEASE FOLD ALONG THE PERFORATION, DETACH AND RETURN THE BOTTOM PORTION IN THE ENCLOSED ENVELOPE. ▼

Proxy — Axcelis Technologies, Inc.

Proxy Solicited on Behalf of the Board of Directors for Annual Meeting on May 9, 2007.

The undersigned hereby appoints Mary G. Puma, Stephen G. Bassett or Lynnette C. Fallon, or any of them, and any substitutes, to be the attorneys and proxies of the undersigned at the Annual Meeting of Stockholders of Axcelis Technologies, Inc. ("Axcelis") to be held at 1:30 p.m. EST on Wednesday May 9, 2007 at the offices of Axcelis at 108 Cherry Hill Drive, Beverly, Massachusetts, or at any adjournment thereof, and to vote at such meeting the shares of common stock of Axcelis the undersigned held of record on the books of Axcelis on the record date for the meeting for the election of the nominees listed on the reverse side and on the ratification of Axcelis' independent auditors as described in the Proxy Statement, and on any other business before the meeting, with all powers the undersigned would possess if personally present.

You are encouraged to specify your choices by marking the appropriate boxes, SEE REVERSE SIDE, but you need not mark any boxes if you wish to vote in accordance with the Board of Directors' recommendations. The proxies cannot vote your shares unless you sign and return this card.

PLEASE VOTE, DATE AND SIGN THIS PROXY ON THE OTHER SIDE AND RETURN PROMPTLY IN THE ENCLOSED ENVELOPE.