

**UNITED STATES  
SECURITIES AND EXCHANGE COMMISSION  
WASHINGTON, DC 20549**

**SCHEDULE 14A**  
(Rule 14A-101)

**INFORMATION REQUIRED IN  
PROXY STATEMENT**

**SCHEDULE 14A INFORMATION**

**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

**MKS Instruments, Inc.**

(Name of Registrant as Specified in its Charter)

Payment of Filing Fee (Check the appropriate box):

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

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

2) Aggregate number of securities to which transaction applies:

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

4) Proposed maximum aggregate value of transaction:

5) Total fee paid:

Fee paid previously with preliminary materials.

Check box if any part of the fee is offset as provided by Exchange Act Rule 0-11(a)(2) and identify the filing for which the offsetting fee was paid previously. Identify the previous filing by registration statement number, or the Form or Schedule and the date of its filing.

1) Amount Previously Paid:

2) Form, Schedule or Registration Statement No.:

3) Filing Party:

4) Date Filed:

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**MKS INSTRUMENTS, INC.**  
**2 TECH DRIVE, SUITE 201**  
**ANDOVER, MASSACHUSETTS 01810**

March 14, 2013

Dear shareholder:

You are cordially invited to attend the 2013 Annual Meeting of Shareholders of MKS Instruments, Inc. to be held on Monday, May 6, 2013, at 10:00 a.m. at the Wyndham Boston Andover Hotel, 123 Old River Road, Andover, Massachusetts 01810.

The enclosed notice of Annual Meeting and proxy statement describe the business to be transacted at the Annual Meeting and provide additional information about us that you should know when voting your shares. The principal business at the Annual Meeting will be (i) to elect three Class II Directors, (ii) to approve a non-binding advisory vote on executive compensation, and (iii) to ratify the selection of our independent registered public accounting firm for the year ending December 31, 2013.

Whether or not you plan to attend the Annual Meeting, please complete, date, sign and return your Proxy Card promptly in the enclosed envelope, which requires no postage if mailed in the United States. If you attend the Annual Meeting, you may vote in person if you wish, even if you have previously returned your Proxy Card, in which case your proxy vote will be revoked.

On behalf of MKS, I would like to express our appreciation for your continued interest in our company.

Sincerely,

**LEO BERLINGHIERI**  
Chief Executive Officer



**MKS INSTRUMENTS, INC.  
2 TECH DRIVE, SUITE 201  
ANDOVER, MASSACHUSETTS 01810**

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**NOTICE OF 2013 ANNUAL MEETING OF SHAREHOLDERS  
TO BE HELD ON MAY 6, 2013**

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To the shareholders:

NOTICE IS HEREBY GIVEN that the 2013 Annual Meeting of Shareholders of MKS INSTRUMENTS, INC., a Massachusetts corporation, will be held on Monday, May 6, 2013 at 10:00 a.m. at the Wyndham Boston Andover Hotel, 123 Old River Road, Andover, Massachusetts 01810. At the meeting, shareholders will consider and vote on the following matters:

1. To elect three Class II Directors, each for a three-year term;
2. To approve a non-binding advisory vote on executive compensation; and
3. To ratify the selection of PricewaterhouseCoopers LLP as our independent registered public accounting firm for the year ending December 31, 2013.

The shareholders will also act on any other business as may properly come before the meeting.

The Board of Directors has fixed the close of business on March 12, 2013 as the record date for the determination of shareholders entitled to notice of, and to vote at, the Annual Meeting and any adjournment or adjournments thereof. Our stock transfer books will remain open for the purchase and sale of our Common Stock.

If you would like to attend the Annual Meeting and your shares are held by a broker, bank or other nominee, you must bring to the Annual Meeting a letter from the nominee confirming your beneficial ownership of such shares. In order to vote your shares at the Annual Meeting, you must obtain from the nominee a proxy issued in your name. You must also bring a form of personal identification.

By Order of the Board of Directors,

RICHARD S. CHUTE  
Secretary

Andover, Massachusetts  
March 14, 2013

**IMPORTANT**

**WHETHER OR NOT YOU EXPECT TO ATTEND THE ANNUAL MEETING IN PERSON, PLEASE PROMPTLY SIGN, DATE, AND RETURN THE ENCLOSED PROXY. PROMPTLY SIGNING, DATING AND RETURNING THE PROXY WILL SAVE US THE EXPENSE AND EXTRA WORK OF ADDITIONAL SOLICITATION. AN ADDRESSED ENVELOPE FOR WHICH NO POSTAGE IS REQUIRED IF MAILED IN THE UNITED STATES IS ENCLOSED FOR THAT PURPOSE. SENDING IN YOUR PROXY WILL NOT PREVENT YOU FROM VOTING YOUR STOCK AT THE ANNUAL MEETING IF YOU DESIRE TO DO SO, AS YOUR PROXY IS REVOCABLE AT YOUR OPTION.**

**MKS INSTRUMENTS, INC.  
2 TECH DRIVE, SUITE 201  
ANDOVER, MASSACHUSETTS 01810**

**PROXY STATEMENT**

This Proxy Statement is furnished in connection with the solicitation of proxies by the Board of Directors of MKS Instruments, Inc., a Massachusetts corporation, for use at the 2013 Annual Meeting of Shareholders to be held on May 6, 2013, at 10:00 a.m. at the Wyndham Boston Andover Hotel, 123 Old River Road, Andover, Massachusetts 01810, and at any adjournment or postponement thereof (the "Annual Meeting"). References in this proxy statement to "we," "us," the "Company" or "MKS" refer to MKS Instruments, Inc. and its consolidated subsidiaries.

All proxies will be voted in accordance with the shareholders' instructions. If no choice is specified in the proxy, the shares will be voted in favor of the matters set forth in the accompanying Notice of 2013 Annual Meeting of Shareholders. Any proxy may be revoked by a shareholder at any time before its exercise by delivery of written revocation to the Secretary of MKS. Attendance at the Annual Meeting will not in itself be deemed to revoke a proxy unless the shareholder gives affirmative notice at the Annual Meeting that the shareholder intends to revoke the proxy and vote in person.

**VOTING SECURITIES AND VOTES REQUIRED**

At the close of business on March 12, 2013, the record date for the determination of shareholders entitled to notice of, and to vote at, the Annual Meeting, there were issued and outstanding and entitled to vote 52,833,599 shares of our common stock, no par value per share (the "Common Stock"). Each outstanding share entitles the record holder to one vote on each matter submitted at the Annual Meeting.

In order to transact business at the Annual Meeting, we must have a quorum. Under our Amended and Restated By-Laws, the holders of a majority of the shares of Common Stock issued and outstanding and entitled to vote at the Annual Meeting shall constitute a quorum for the transaction of business at the Annual Meeting. Shares of Common Stock held by shareholders present in person or represented by proxy (including "broker non-votes" and shares that abstain or do not vote with respect to a particular proposal to be voted upon) will be counted for purposes of determining whether a quorum exists at the Annual Meeting. If a quorum is not present, the meeting will be adjourned until a quorum is obtained.

The affirmative vote of the holders of a plurality of the votes cast on the matter is required for the election of directors (Proposal One). The approval of the advisory vote on executive compensation (Proposal Two), and the ratification of PricewaterhouseCoopers LLP, or PwC (Proposal Three) require the affirmative vote of the holders of a majority of the votes cast on the matter.

Shares held by shareholders who abstain from voting as to a particular matter, and "broker non-votes," which are shares held in "street name" by banks, brokers or nominees, who indicate on their proxies that they do not have discretionary authority to vote such shares as to a particular non-routine matter, including the election of directors and advisory votes on executive compensation, will not be counted as votes in favor of, or as votes cast for, a matter. Accordingly, abstentions and broker non-votes will have no effect on the voting on a matter that requires the affirmative vote of a certain percentage of the shares voting on the matter. Proposal Two is a non-binding proposal. If the shares you own are held in street name by a bank or brokerage firm, your bank or brokerage firm, as the record holder of your shares, is required to vote your shares according to your instructions. In order to vote your shares, you will need to follow the directions your bank or brokerage firm provides you.

**THE NOTICE OF ANNUAL MEETING, THIS PROXY STATEMENT AND OUR ANNUAL REPORT TO SHAREHOLDERS FOR THE YEAR ENDED DECEMBER 31, 2012 ARE BEING MAILED TO SHAREHOLDERS ON OR ABOUT MARCH 20, 2013.**

**IMPORTANT NOTICE REGARDING THE AVAILABILITY OF PROXY MATERIALS FOR THE SHAREHOLDER MEETING TO BE HELD ON  
MAY 6, 2013**

A copy of (i) our Annual Report to Shareholders for the year ended December 31, 2012, which contains consolidated financial statements and other information of interest to shareholders, (ii) this proxy Statement and this Notice, and (iii) information on how to obtain directions to be able to attend the meeting and vote in person can be accessed on our website at <http://investor.mksinst.com/annualproxy.cfm> or by calling (800) 227-8766 ext. 5578 and requesting a copy.

**A COPY OF OUR ANNUAL REPORT ON FORM 10-K FOR THE YEAR ENDED DECEMBER 31, 2012 AS FILED WITH THE SECURITIES AND EXCHANGE COMMISSION, OR THE SEC, EXCLUDING EXHIBITS, WILL BE FURNISHED WITHOUT CHARGE TO ANY SHAREHOLDER UPON WRITTEN REQUEST TO: INVESTOR RELATIONS DEPARTMENT, MKS INSTRUMENTS, INC., 2 TECH DRIVE, SUITE 201, ANDOVER, MA 01810. EXHIBITS WILL BE PROVIDED UPON WRITTEN REQUEST AND PAYMENT OF AN APPROPRIATE PROCESSING FEE.**

**SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT**

The following table sets forth certain information with respect to the beneficial ownership of Common Stock by (i) the executive officers named in the Summary Compensation Table below; (ii) each of our current directors; (iii) each shareholder known to us to be the beneficial owner of more than 5% of the outstanding shares of Common Stock; and (iv) all of our directors and executive officers as a group. Unless otherwise indicated in the footnotes to the table, all information set forth in the table is as of January 1, 2013; and the address for each of our directors and executive officers is: c/o MKS Instruments, Inc., 2 Tech Drive, Suite 201, Andover, Massachusetts 01810.

| <u>Name of Beneficial Owners</u>  | <u>Number of Shares Beneficially Owned(1)</u> | <u>Percentage of Common Stock Beneficially Owned</u> |
|---|---|--|
| <i>Named Executive Officers</i>   |   |  |
| Leo Berlinghieri  | 156,309(2)                                    | *  |
| Seth H. Bagshaw   | 22,686(3)                                     | *  |
| Gerald G. Colella   | 21,275(4)                                     | *  |
| John T.C. Lee   | 7,013(5)                                      | *  |
| John A. Smith   | 4,801(6)                                      | *  |
| <i>Directors Not Included Above</i>   |   |  |
| Cristina H. Amon  | 17,667(7)                                     | *  |
| Robert R. Anderson  | 30,000(8)                                     | *  |
| Gregory R. Beecher  | 18,400(9)                                     | *  |
| John R. Bertucci  | 714,263(10)                                   | 1.34%  |
| Richard S. Chute  | 37,000(11)                                    | *  |
| Peter R. Hanley   | 10,222(12)                                    | *  |
| Elizabeth A. Mora   | 1,875(13)                                     | *  |
| <i>5% shareholders</i>  |   |  |
| Royce & Associates, LLC<br>745 Fifth Avenue<br>New York, NY 10151                                       | 7,051,179(14)                                 | 13.40%   |
| Black Rock, Inc.<br>40 East 52 <sup>nd</sup> Street<br>New York, NY 10022                               | 4,071,587(15)                                 | 7.74%  |
| The Vanguard Group, Inc.<br>100 Vanguard Blvd.<br>Malvern, PA 19355                                     | 3,099,591(16)                                 | 5.88%  |
| Dimensional Fund Advisors LP.<br>Palisades West, Building One<br>6300 Bee Cave Road<br>Austin, TX 78746 | 2,989,987(17)                                 | 5.68%  |
| Kornitner Capital Management, Inc.<br>5240 West 61 <sup>st</sup> Place<br>Shawnee Mission, KS 66205     | 2,722,621(18)                                 | 5.17%  |
| <u>All directors and officers as a group (14 persons)</u>   | <u>1,061,403(19)</u>                          | <u>1.97%</u>   |

\* Represents less than 1% of the outstanding Common Stock.

- (1) We believe that each shareholder has sole voting and investment power with respect to the shares listed, except as otherwise noted. The number of shares beneficially owned by each shareholder is determined under rules of the Securities and Exchange Commission (the "SEC"), and the information is not necessarily indicative of ownership for any other purpose. Under such rules, beneficial ownership includes any shares as to which the person has sole or shared voting or investment power and also any shares that the individual has the right to acquire within 60 days after January 1, 2013 subject to the vesting of restricted stock units (RSUs) or the exercise of any stock option or other right. The inclusion herein of any shares of Common

Stock deemed beneficially owned does not constitute an admission by such shareholder of beneficial ownership of those shares of Common Stock. Shares of Common Stock which an individual or entity has a right to acquire within the 60-day period following January 1, 2013 pursuant to the vesting of RSUs or the exercise of any stock options or other right are deemed to be outstanding for the purpose of computing the percentage ownership of such individual or entity, but are not deemed to be outstanding for the purpose of computing the percentage ownership of any other person or entity shown in the table.

- (2) Consists of 73,566 shares held directly by Mr. Berlinghieri and 82,743 shares subject to options exercisable or RSUs that will vest within 60 days of January 1, 2013.
- (3) Consists of 12,015 shares held directly by Mr. Bagshaw and 10,671 shares subject to RSUs that are subject to vesting within 60 days after January 1, 2013.
- (4) Consists of 25 shares held directly by Mr. Colella and 21,250 shares subject to options exercisable or RSUs that are subject to vesting within 60 days after January 1, 2013.
- (5) Consists of 479 shares held directly by Mr. Lee and 6,534 shares subject to RSUs that are subject to vesting within 60 days after January 1, 2013.
- (6) Consists of 0 shares held directly by Mr. Smith and 4,801 shares subject to RSUs that are subject to vesting within 60 days after January 1, 2013.
- (7) Consists of 17,667 shares held directly by Ms. Amon.
- (8) Consists of 10,000 shares held directly by Mr. Anderson and 20,000 shares subject to options exercisable within 60 days after January 1, 2013.
- (9) Consists of 18,400 shares held directly by Mr. Beecher.
- (10) Consists of 408,422 shares held directly by Mr. Bertucci and 305,841 shares held directly or indirectly by Mr. Bertucci's wife.
- (11) Consists of 1,000 shares held directly by Mr. Chute and 36,000 shares subject to options exercisable that will vest within 60 days after January 1, 2013.
- (12) Consists of 10,222 shares held directly by Mr. Hanley.
- (13) Consists of 1,250 shares held directly by Ms. Mora and 625 shares subject to RSUs that are subject to vesting within 60 days after January 1, 2013.
- (14) Based on information set forth in Schedule 13G/A filed by Royce & Associates, LLC on behalf of itself and its affiliates on January 14, 2013, reporting stock ownership as of December 31, 2012.
- (15) Based on information set forth in Schedule 13G/A filed by Black Rock, Inc. on February 8, 2013, reporting stock ownership as of December 31, 2012.
- (16) Based on information set forth in Schedule 13G/A filed by The Vanguard Group, Inc. on February 12, 2013, reporting stock ownership as of December 31, 2012, and consists of 3,020,701 shares of which The Vanguard Group, Inc. has sole voting and investment power and 78,890 shares of which The Vanguard Group, Inc. has sole voting power and shared investment power.
- (17) Based on information set forth in Schedule 13G/A filed by Dimensional Fund Advisors LP on February 11, 2013, reporting stock ownership as of December 31, 2012, and consists of 2,932,991 shares of which Dimensional Fund Advisors LP has sole voting and investment power and 56,996 shares of which Dimensional Fund Advisors has sole investment power. Dimensional Fund Advisors, Inc. disclaims beneficial ownership of such securities.
- (18) Based on information set forth in Schedule 13G/A filed by Kornitzer Capital Management, Inc. on January 24, 2013, reporting stock ownership as of December 31, 2012, and consists of 2,672,918 shares of which Kornitzer Capital Management, Inc. has sole voting and investment power and 49,703 shares of which Kornitzer Capital Management, Inc. has sole voting power and shared investment power.
- (19) Consists of 873,483 shares held directly or indirectly by such persons and 187,920 shares subject to options exercisable or RSUs that will vest within 60 days after January 1, 2013.

To our knowledge, there are no voting trusts or similar arrangements among any of the foregoing persons or entities with respect to the voting of shares of Common Stock.

**PROPOSAL ONE**

**ELECTION OF DIRECTORS**

Our Amended and Restated By-Laws provide for a Board of Directors that is divided into three classes. The term of the Class I Directors expires at the 2015 Annual Meeting, the term of the Class II Directors expires at the 2013 Annual Meeting and the term of the Class III Directors expires at the 2014 Annual Meeting. Cristina H. Amon, Richard S. Chute and Peter R. Hanley are currently proposed for election to serve as Class II Directors for a term to expire at the 2016 Annual Meeting. Each nominee has consented to being named herein, and, if elected, to serve as a director until his or her successor is duly elected and qualified.

Shares represented by all proxies received by the Board of Directors and not so marked as to withhold authority to vote for an individual director will be voted (unless one or more nominees are unable or unwilling to serve) for the election of the nominees named below. The Board of Directors expects that each of the nominees named below will be available for election, but if any of them is not a candidate at the time the election occurs, it is intended that such proxies will be voted for the election of a substitute nominee to be designated by the Board of Directors.

**BOARD RECOMMENDATION**

**THE BOARD OF DIRECTORS BELIEVES THAT APPROVAL OF THE ELECTION OF CRISTINA H. AMON, RICHARD S. CHUTE AND PETER R. HANLEY TO SERVE AS CLASS II DIRECTORS IS IN THE BEST INTERESTS OF MKS AND OUR SHAREHOLDERS AND THEREFORE, RECOMMENDS A VOTE "FOR" ALL NOMINEES.**

## DIRECTORS

The Board of Directors, upon the recommendation of the Nominating and Corporate Governance Committee has nominated Cristina H. Amon, Richard S. Chute and Peter R. Hanley, to serve as Class II directors. Set forth below are the names and ages of each member of our Board of Directors (including those who are nominees for election as Class II Directors) and the positions and offices held, principal occupation and business experience during at least the past five years, the names of other publicly held companies of which the individual currently serves, or in the past five years has served, as a director and the year of commencement of the term as our director. We have also included information about each director's specific experience, qualifications, attributes, or skills that led the Board of Directors to conclude that he or she should serve as a director of MKS. Information with respect to the number of shares of Common Stock beneficially owned by each director, directly or indirectly, as of January 1, 2013, appears in this proxy statement under the heading "Security Ownership of Certain Beneficial Owners and Management."

| <u>Name</u>              | <u>Age</u> | <u>Position</u>                   | <u>Class to Which Director Currently Belongs</u> |
|--------------------------|------------|-----------------------------------|--|
| John R. Bertucci         | 72         | Director, Chair                   | III  |
| *Cristina H. Amon(2)(3)  | 56         | Director                          | II   |
| Robert R. Anderson(1)(3) | 75         | Director                          | III  |
| Gregory R. Beecher(1)    | 55         | Director                          | III  |
| Leo Berlinghieri         | 59         | Director, Chief Executive Officer | I  |
| *Richard S. Chute(2)     | 74         | Director, Secretary               | II   |
| *Peter R. Hanley(2)(3)   | 73         | Director                          | II   |
| Elizabeth A. Mora(1)     | 52         | Director                          | I  |

(1) Member of Audit Committee

(2) Member of Nominating and Corporate Governance Committee

(3) Member of Compensation Committee

\* Nominee for election at this meeting

### *John R. Bertucci*

Mr. Bertucci has served as our director since 1974, and has been Chair of the Board of Directors since November 1995. Mr. Bertucci served as Executive Chair from July 2005 until December 2006. Mr. Bertucci served as our Chief Executive Officer from November 1995 to July 2005 and served as President from 1974 to May 1999 and again from November 2001 to April 2004. From 1970 to 1974, he was our Vice President and General Manager. Mr. Bertucci holds an M.S. in Industrial Administration and a B.S. in Metallurgical Engineering from Carnegie Mellon University. Mr. Bertucci has served as a member of the Board of Trustees of Carnegie Mellon University since May 2002. He has also served as a member of the Executive Board of The Massachusetts High Technology Council since February 1999, serving as Chair from February 2005 to February 2007. He also serves as a member of the Board of Trustees or the Board of Directors of three non-profit organizations. Mr. Bertucci's over 30 years of experience working for MKS, including a combined 28 years as President, gives him a unique insight into the challenges and strategies relevant to the semiconductor industry as a whole, and to our Company in particular.

### *Cristina H. Amon*

Ms. Amon has served as our director since 2007. She has served as the Dean, Faculty of Applied Science and Engineering, Alumni Chair Professor of Bioengineering and a member of the Department of Mechanical and Industrial Engineering at the University of Toronto since July 2006. Prior to that, Ms. Amon served at Carnegie Mellon University, as Director of the Institute for Complex Engineered Systems from September 1999 until July 2006, and was a Raymond Lane Distinguished Professor, Mechanical Engineering and Biomedical Engineering from September 2001 until July 2006. In her roles at the University of Toronto and Carnegie Mellon, Ms. Amon has led research in micro-fabrication, sustainable energy, thermal management of electronics and nano-scale

transport in silicon thin films. Ms. Amon has served as Executive Board Member of the American Society for Engineering Education (ASEE), Engineering Deans Council since 2007 and a Member of its Global Engineering Deans Council from 2008 through 2010. She has also served as the Nominating Committee Chair for the American Association for the Advancement of Science (AAAS) from 2006 to 2007, served as an Executive Board Member of the American Society of Mechanical Engineers (ASME), Electronic and Photonic Packaging division since 2001, served on the External Advisory Board for the Department of Mechanical and Aerospace Engineering at the University of Texas, Department of Mechanical Engineering at Stanford University since 2008, and served on the Board of Visitors for the College of Engineering at UIUC since 2009. She is a Fellow of AAAS, ASEE, ASME, EIC, IEEE, NAE, RSC and CAE. Ms. Amon's extensive engineering background, particularly in micro-fabrication, thermal management and silicon thin-films, provides the Board of Directors with a technical perspective and insight into the challenges and opportunities we face.

*Robert R. Anderson*

Mr. Anderson has served as our director since January 2001. Mr. Anderson is a private investor. From October 1998 to April 2000, Mr. Anderson served as CEO of Yield Dynamics, Inc., a private semiconductor control software company, which was acquired by MKS in 2007 and later sold in 2010. Mr. Anderson served as CEO of Silicon Valley Research, Inc., a semiconductor design automation software company, from December 1996 to August 1998 and as Chair from January 1994 to January 2001. Mr. Anderson was co-founder and served as Chief Financial Officer, Chief Operating Officer and Chair of KLA Instruments, a supplier of process control and yield management solutions for the semiconductor and related nanoelectronics industries, from 1975 through 1994. He was Chief Financial Officer of Computervision from 1970 through 1975. Mr. Anderson has served as the President and a director of a private family foundation since September 2000. He has also served as a director of Aehr Test Systems, Inc., a manufacturer of semiconductor test and burn-in equipment, since October 2000, and currently serves on Aehr's Audit and Compensation committees. He has also served as a director of Energetiq Technology, Inc., a privately held company, since May 2005. Mr. Anderson served as a director of Yield Dynamics from October 1998 to December 2003, serving as its Chair from October 1998 to October 2000. In addition, he served as a director of NPL, Inc. from 2000 to January 2005, as a director of Trikon Technologies from 1998 to December 2005, and a director of Aviza Technology, Inc. from December 2005 to March 2009. Mr. Anderson has served on over 18 public and private boards, and has served as CFO, CEO and Chair of several public corporations. His extensive business experience, particularly within the semiconductor industry, provides him with insight into the challenges we face within the industry. In addition, his financial acumen is an important asset in his role as a member of our Audit and Compensation Committees.

*Gregory R. Beecher*

Mr. Beecher has served as our director since August 2006. Mr. Beecher has served as CFO of Teradyne, Inc., a semiconductor and system level test equipment provider, since 2001, and was an audit partner with PricewaterhouseCoopers LLP from October 1993 to March 2001, working with numerous semiconductor equipment and instrument providers, along with other technology-related enterprises, and advising on complex accounting issues. Mr. Beecher served as a director, and Chair of the Audit Committee, of MatrixOne, from 2004 through 2006. Mr. Beecher has an M.S. in accounting from Northeastern University. Mr. Beecher's extensive financial background, including his previous experience at a public accounting firm, and his current role as CFO of a public corporation, provide valuable insights for the Board of Directors and the Audit Committee.

*Leo Berlinghieri*

Mr. Berlinghieri has served as our director and as our Chief Executive Officer since February 2013, and served as director, Chief Executive Officer and President from July 2005 until February 2013. He previously served as our President and Chief Operating Officer from April 2004 to July 2005, and as our Vice President and Chief Operating Officer from July 2003 until April 2004. From November 1995 to July 2003, he served as our Vice President, Global Sales and Service. From 1980 to November 1995, he served in various management positions of MKS, including Manufacturing Manager, Production and Inventory Control Manager, and Director of Customer Support Operations. Mr. Berlinghieri has served as a director of Massachusetts High Technology

Council since May 2012 and has served as a director of Rudolph Technologies, Inc. since September 2008. Mr. Berlinghieri's over 30 years of experience within the Company gives him particularly deep insight into the organization.

*Richard S. Chute*

Mr. Chute has served as our director since 1974. Mr. Chute was a member of the law firm of Hill & Barlow, a Professional Corporation, from 1971 to January 2003, with an extensive corporate practice, and is currently an attorney in private practice. Mr. Chute has served as a director of Massachusetts Audubon Society, Inc. since October 2004, currently serving as Chair of its Audit Committee and a member of its Administration and Finance Committee, the Committee on the Board and its Diversity Committee. Mr. Chute has also served as a director and member of the Nominating Committee of Manomet, Inc. since November 1993. He has served on over 15 other non-profit and private company boards. Mr. Chute's extensive legal experience provides him with a unique perspective, which is particularly valuable in Mr. Chute's current roles as Secretary of the Company and as Chair of the Nominating and Corporate Governance Committee.

*Peter R. Hanley*

Mr. Hanley has served as our director since March 2008. From December 2009 until November 2010, Mr. Hanley served as an occasional consultant to Novellus Systems, Inc., a leading developer of semiconductor manufacturing equipment. From January 2004 until December 2007, Mr. Hanley served as a part-time employee of Novellus, engaged primarily in executive training. Mr. Hanley served as President of Novellus from May 2001 to December 2003. Prior to that, he served as Novellus' Executive Vice President of Worldwide Sales from June 1992 until May 2001. Prior to joining Novellus, Mr. Hanley served from 1985 to 1992 at Applied Materials, Inc., a leader in the semiconductor capital equipment industry, most recently as Group Vice President of Worldwide Sales and Service and previously as Vice President and General Manager of their Etch Products Division. Before joining Applied Materials, Mr. Hanley served from 1978 to 1984 at Varian Associates, a leader in the semiconductor capital equipment industry, most recently as Vice President of Technology and previously as Vice President and General Manager of their Extrinsic Ion Implantation Division. Mr. Hanley has served as a director of Crossing Automation since January 2010, and has served as a director of a non-profit organization since 2008. From 2004 to May 2007, Mr. Hanley served as a director of Thermawave, Inc., a developer of process control metrology systems used in the manufacture of semiconductors, which was sold to KLA Tencor. Mr. Hanley's substantial background in the semiconductor industry for more than 25 years, including senior management roles at Novellus and Applied Materials, two of MKS' largest customers, provides the Board of Directors with insights into the industry's sales and marketing challenges and opportunities.

*Elizabeth A. Mora*

Ms. Mora has served as our director since May 2012. Ms. Mora has served since 2008 as the Chief Financial Officer of The Charles Stark Draper Laboratory, Inc., a non-profit engineering research and development laboratory serving the national interest in applied research, engineering development, advanced technical education, and technology transfer. From 1997 until 2008, she worked for Harvard University, ultimately serving as Chief Financial Officer and Vice President for Finance at the University, and previously serving as Associate Vice President, Research Administration and the Director of the Office of Sponsored Research. Prior to joining Harvard, Ms. Mora worked for Coopers and Lybrand (now PricewaterhouseCoopers LLP) from 1989 to 1997 and was one of the founding members of its National Regulatory Consulting Practice. Ms. Mora is a Certified Public Accountant and has an M.B.A. from the Simmons College Graduate School of Management. She also serves as a member of the Audit Committee of the Olin College of Engineering. Ms. Mora's extensive financial background, including her current role as CFO of a research and development organization, provides valuable insights for the Board of Directors and the Audit Committee.

**Agreements as to Nomination**

Mr. Bertucci resigned from his employment with MKS effective December 31, 2006. Mr. Bertucci's employment agreement provided that if Mr. Bertucci resigned from his employment, then, subject to applicable law, our

Amended and Restated By-Laws, our Restated Articles of Organization and the directors' fiduciary duties, the Board of Directors shall nominate Mr. Bertucci for election as a Class III director and consider Mr. Bertucci for appointment as Chair of the Board of Directors, until such time as Mr. Bertucci is no longer eligible for nomination as a director.

## CORPORATE GOVERNANCE

### Board Independence

The Board of Directors has determined that all of the members of the Board of Directors, other than Mr. Berlinghieri, are independent as defined under the rules of the NASDAQ Stock Market.

### Board Leadership Structure

Since 2005, we have separated the roles of CEO and Chair of the Board of Directors in recognition of the differences between the two roles. The CEO is responsible for setting the strategic direction for the Company and the day-to-day leadership and performance of the Company, while the Chair of the Board of Directors provides guidance to the CEO, sets the agenda for Board meetings and presides over meetings of the full Board.

In addition, the Board of Directors has established the position of Lead Director. Our Corporate Governance Guidelines provide that during any period in which the Chair of the Board of Directors is not an independent director, a Lead Director shall be elected by and from the independent directors. While we are not obligated under our Corporate Governance Guidelines to have a Lead Director, as the Chair of the Board of Directors is independent, we have currently elected to continue to do so.

The primary role of the Lead Director is to serve as a liaison between the independent directors and the Chair of the Board of Directors and the Chief Executive Officer and to represent the interest of the independent directors, as appropriate. Gregory R. Beecher has served as Lead Director since 2012. Pursuant to our Corporate Governance Guidelines (which are posted on our website at <http://www.mksinst.com> in the Corporate Governance Section under the Investors tab), the Lead Director shall, among other matters:

- Have the authority to call meetings of the independent directors.
- Preside at all meetings of the Board of Directors at which the Chair of the Board of Directors is not present, including executive sessions of the independent directors.
- Assure that at least two meetings per year of only the independent directors are held and chair any such meetings of the independent directors.
- Facilitate communications and serve as a liaison between the independent directors and the Chair of the Board of Directors and the Chief Executive Officer, provided that any director is free to communicate directly with the Chair of the Board of Directors and with the Chief Executive Officer.
- Work with the Chair of the Board of Directors and the Chief Executive Officer in the preparation of the agenda for each Board of Directors meeting and approve each such agenda.
- If a meeting is held between a major shareholder and a representative of the independent directors, the Lead Director shall serve, subject to availability, as such representative of the independent directors.
- Otherwise consult with the Chair of the Board of Directors and the Chief Executive Officer on matters relating to corporate governance and performance of the Board of Directors.

Our Board of Directors believes that its leadership structure is appropriate at this time for our Company because it strikes an effective balance between management and independent leadership participation in the Board of Directors process.

### Board's Role in Risk Oversight

Management is responsible for the day-to-day management of risks the Company faces, while the Board of Directors, as a whole and through its committees, has the ultimate responsibility for the oversight of risk management. Senior management attends quarterly meetings of the Board of Directors, provides presentations on

operations including significant risks, and is available to address any questions or concerns raised by the Board of Directors. Additionally, our three board committees assist the Board of Directors in fulfilling its oversight responsibilities in certain areas of risk. Pursuant to its charter, the Audit Committee coordinates the Board of Directors' oversight of the Company's internal control over financial reporting, disclosure controls and procedures and code of conduct. Management regularly reports to the Audit Committee on these areas. The Compensation Committee assists the Board of Directors in fulfilling its oversight responsibilities with respect to the management of risks arising from our compensation policies and programs as well as succession planning as it relates to our Chief Executive Officer. The Nominating and Corporate Governance Committee assists the Board of Directors in fulfilling its oversight responsibilities with respect to the management of risks associated with board organization, membership and structure, succession planning for our directors and corporate governance. When any of the committees receives a report related to material risk oversight, the Chair of the relevant committee reports on the discussion to the full Board of Directors.

#### **Board of Director Meetings and Committees of the Board of Directors**

The Board of Directors held four meetings in 2012. During 2012, each director attended at least 75% of the aggregate of the total number of meetings of the Board of Directors and the total number of meetings of all committees of the Board of Directors on which he or she served. Pursuant to our Corporate Governance Guidelines, directors are encouraged to attend our Annual Meeting of Shareholders. All of the directors then serving on the Board of Directors, attended the 2012 Annual Meeting of Shareholders.

The Board of Directors has established three standing committees — Audit, Compensation and Nominating and Corporate Governance — each of which operates under a charter that has been approved by the Board of Directors. Each committee's current charter is posted under the Investors tab on our website, <http://www.mksinst.com>, under the heading Corporate Governance.

#### ***Audit Committee***

The Audit Committee consists of Messrs. Anderson, Beecher (Chair) and Ms. Mora. The Audit Committee's responsibilities include:

- appointing, approving the fees of and assessing the independence of, our independent registered public accounting firm;
- overseeing the work of our independent registered public accounting firm, including through the receipt and consideration of certain reports from the independent registered public accounting firm;
- reviewing and discussing our annual audited financial statements and related disclosures with management and the independent registered public accounting firm;
- reviewing our quarterly unaudited financial statements;
- coordinating oversight of our internal controls over financial reporting, disclosure controls and procedures and code of business conduct and ethics;
- overseeing our internal audit function;
- establishing procedures for the receipt and retention of accounting related complaints and concerns;
- meeting independently with our internal auditing staff, independent registered public accounting firm and management;
- reviewing any related party transactions; and
- preparing the Audit Committee report required to be included in this proxy statement.

The Audit Committee held five meetings in 2012.

### ***Compensation Committee***

The Compensation Committee consists of Ms. Amon, and Messrs. Anderson (Chair) and Hanley. The Compensation Committee's responsibilities include:

- determining the CEO's compensation;
- reviewing and approving, or making recommendations to the Board of Directors with respect to, the compensation of our other executive officers;
- CEO succession planning;
- annually reviewing and approving our management incentive bonus plan;
- reviewing the Compensation Discussion and Analysis required to be included in the annual proxy statement;
- overseeing and administering our equity incentive plans; and
- reviewing and making recommendations to the Board of Directors with respect to director compensation.

The Compensation Committee held four meetings in 2012. See section below titled "Executive Compensation — Compensation Discussion & Analysis" for further information about the role of the Compensation Committee and scope of its activities.

### ***Nominating and Corporate Governance Committee***

The Nominating and Corporate Governance Committee consists of Ms. Amon and Messrs. Chute (Chair) and Hanley. The Nominating and Corporate Governance Committee's responsibilities include:

- identifying individuals qualified to become members of the Board of Directors;
- recommending to the Board of Directors the persons to be nominated for election as directors and to each of the Board's committees;
- developing and recommending corporate governance principles to the Board of Directors; and
- overseeing the annual self-evaluations of the Board of Directors and each of the Board of Directors' committees.

The Nominating and Corporate Governance Committee held two meetings in 2012.

For information relating to the nomination of directors, see "Director Candidates" below.

### ***Audit Committee Financial Expert***

The Board of Directors has determined that each of the three current members of the Audit Committee is an "audit committee financial expert" as defined in applicable SEC regulations in Item 407(d)(5) of Regulation S-K.

### ***Director Candidates***

The Nominating and Corporate Governance Committee recommended to the Board of Directors that the director nominees be nominated by the Board of Directors for election as Class II directors. The process followed by the Nominating and Corporate Governance Committee to identify and evaluate director candidates includes requests to Board members and others for recommendations, meetings from time to time to evaluate biographical information and background material relating to potential candidates and interviews of selected candidates by the members of the Committee and the Board of Directors.

In considering whether to recommend any particular candidate for inclusion in the Board of Directors' slate of recommended director nominees, the Nominating and Corporate Governance Committee applies the criteria attached to the Committee's charter. These criteria include the candidate's integrity, business acumen, knowledge of our business and industry, experience, diligence, conflicts of interest and the ability to act in the interests of all

shareholders. Nominees should generally be under the age of 75 at the time of nomination. The Committee does not assign specific weights to particular criteria and no particular criterion is a prerequisite for each prospective nominee. Nominees shall not be discriminated against on the basis of race, religion, national origin, sex, sexual orientation, disability or any other basis proscribed by law. In considering director candidates, the Committee takes into account the value of diversity on the Board. While the Nominating and Corporate Governance Committee does not have a formal policy with respect to diversity, the Board and the Committee believe that it is essential that the Board members represent diverse viewpoints. In considering candidates for the Board, the Nominating and Corporate Governance Committee considers the entirety of each candidate's credentials in the context of these standards. We believe that the backgrounds and qualifications of our directors, considered as a group, should provide a composite mix of experience, knowledge and abilities that will allow the Board of Directors to fulfill its responsibilities.

Shareholders may recommend individuals to the Nominating and Corporate Governance Committee for consideration as potential director candidates by submitting their names, together with appropriate biographical information and background materials and a statement as to whether the shareholder or group of shareholders making the recommendation has beneficially owned more than 5% of our Company's Common Stock for at least a year as of the date such recommendation is made, to the Nominating and Corporate Governance Committee, in care of Kathleen F. Burke, Esq., Vice President and General Counsel, MKS Instruments, Inc., 2 Tech Drive, Suite 201, Andover, MA 01810. Assuming that appropriate biographical and background material has been provided on a timely basis, the Nominating and Corporate Governance Committee will evaluate shareholder-recommended candidates by following substantially the same process, and applying the same criteria, as it does in considering other candidates.

Shareholders also have the right under our Amended and Restated By-Laws to directly nominate director candidates, without any action or recommendation on the part of the Nominating and Corporate Governance Committee or the Board of Directors, by following the procedures set forth under the heading "Deadline for Submission of Shareholder Proposals for the 2014 Annual Meeting" below.

#### **Communications from Shareholders**

The Board of Directors will give appropriate attention to written communications that are submitted by shareholders, and will respond if appropriate. The Chair of the Nominating and Corporate Governance Committee, with the assistance of our General Counsel, is primarily responsible for monitoring communications from shareholders and for providing copies or summaries to the other directors as he considers appropriate. Communications are forwarded to all directors if they relate to important substantive matters and include suggestions or comments that the Chair of the Nominating and Corporate Governance Committee considers to be important for the directors to know. In general, communications relating to corporate governance and long-term corporate strategy are more likely to be forwarded than communications relating to ordinary business affairs, personal grievances and matters as to which we tend to receive repetitive or duplicative communications.

Shareholders who wish to send communications on any topic to the Board of Directors should address such communications to the Board of Directors in care of Kathleen F. Burke, Esq., Vice President and General Counsel, MKS Instruments, Inc., 2 Tech Drive, Suite 201, Andover, MA 01810.

#### **Code of Ethics**

We have adopted a written code of business conduct and ethics that applies to all of our directors, officers and employees (including the principal executive officer, principal financial officer, principal accounting officer or controller, or persons performing similar functions), which is posted in the Investors tab on our website, <http://www.mksinst.com>, under the heading Corporate Governance. We intend to disclose on our website any amendments to, or waivers for our executive officers or directors from, our code of business conduct and ethics.

#### **Compensation Committee Interlocks and Insider Participation**

In 2012, the Compensation Committee was comprised of Ms. Amon, and Messrs. Anderson and Hanley. None of the members of the Compensation Committee during 2012 were, at any time, officers or employees of

MKS or our subsidiaries, and none of them had any relationship with us requiring disclosure under Item 404 of Regulation S-K under the Securities Exchange Act of 1934, as amended. None of our executive officers serves, or has served, as a member of the Board of Directors or Compensation Committee (or other committee serving an equivalent function) of any other entity which has one or more executive officers serving as a member of our Board of Directors or Compensation Committee.

#### EXECUTIVE OFFICERS

The following is a brief summary of the background of each of our current executive officers, other than Mr. Berlinghieri, whose background is described under the heading "Directors" above:

*Gerald G. Colella, President and Chief Operating Officer, Age 56*

Mr. Colella has served as our President and Chief Operating Officer since February 2013. He served as Vice President and Chief Operating Officer from January 2010 until February 2013, and served as our Vice President and Chief Business Officer from April 2005 until January 2010. In addition, Mr. Colella also served as Acting Group Vice President, PRG Products from July 2007 to March 2010. From October 1997 to April 2005, he served as our Vice President, Global Business and Service Operations, from March 1996 to October 1997, he served as our Director of Materials Planning and Logistics, and from 1994 to 1996, he served as our Materials Planning and Logistics Manager. Mr. Colella joined MKS in 1983. He holds a B.A. in Secondary Education from the University of Massachusetts and an M.B.A. from Southern New Hampshire University.

*Seth H. Bagshaw, Vice President, Chief Financial Officer and Treasurer, Age 53*

Mr. Bagshaw has served as our Vice President and Chief Financial Officer since January 2010 and as Treasurer since March 2011. From March 2006 until January 2010, Mr. Bagshaw served as our Vice President and Corporate Controller. Prior to joining MKS, Mr. Bagshaw served as Vice President and Chief Financial Officer of Vette Corp., an integrated global supplier of thermal management systems from 2004 until 2006. From 1999 until 2004, Mr. Bagshaw served as Vice President and Corporate Controller of Varian Semiconductor Equipment Associates, Inc., a leading producer of ion implantation equipment used in the semiconductor manufacturing industry, and from 1998 until 1999, he served as Vice President and Chief Financial Officer of Palo Alto Products International, Inc., an industrial design, engineering and manufacturing company, until its acquisition by Flextronics International, Ltd. Prior to that, Mr. Bagshaw held several senior financial management positions at Waters Corporation, a developer of innovative analytical science solutions, most recently as Vice President and Chief Financial Officer of its Asia-Pacific region, and was a Senior Manager at PricewaterhouseCoopers LLP. Mr. Bagshaw is a Certified Public Accountant and has a B.S. in Business Administration from Boston University and an M.B.A. from Cornell University.

*Paul M. Eyerman, Vice President and General Manager, ENI Products, Age 51*

Mr. Eyerman has served as our General Manager, ENI Products since January 2004 and has additionally been a Vice President since March 2010. From January 2002 until January 2004, Mr. Eyerman served as our General Manager, Medical Electronics. Prior to joining MKS, from March 1999 to November 2001, Mr. Eyerman served as Vice President Marketing at Fujant, Inc., a developer of advanced power amplifier products. From 1997 to 1999, Mr. Eyerman served as Senior Director Product Management at ADC Telecommunications, Inc., a leading producer of telecommunications equipment. From 1983 to 1997, he served in various positions at Motorola, Inc., most recently as Senior Product Manager. Mr. Eyerman has a B.S. in Electrical Engineering from the University of Illinois Champaign/Urbana, an M.S. in Electrical Engineering from Illinois Institute of Technology and an M.B.A. from Northwestern University.

*John T.C. Lee, Senior Vice President, Controls, HPS and PFMC, Age 50*

Dr. Lee has served as our Senior Vice President, Controls, HPS and PFMC, since November 2012. Previously, beginning in January 2011, Dr. Lee served as Senior Vice President, Controls and PFMC. Beginning in

October 2007, Dr. Lee served as our Group Vice President, CIT Products. Prior to joining MKS, Dr. Lee served as the Managing Director of Factory Technology and Projects within the Solar Business Group at Applied Materials, Inc., a global leader in nanomanufacturing and technology solutions, from February 2007 until October 2007. From 2002 until 2007, he served as General Manager of the Cleans Product Group and the Maydan Technology Center at Applied Materials. Prior to Applied Materials, Dr. Lee served from 1997 until 2002 as the Research Director of the Silicon Fabrication Research Department at Lucent Technologies, a voice, data and video communications provider, and from 1991 until 1997 as a Member of Technical Staff in the Plasma Processing Research Group within Bell Labs. Dr. Lee holds a B.S. from Princeton University and both an M.S.C.E.P. and Ph.D. from the Massachusetts Institute of Technology, all in Chemical Engineering.

*Paul A Loomis, Vice President and General Manager, ASTeX Products, Age 48*

Mr. Loomis has served as General Manager, ASTeX Products since July 2007 and has additionally been a Vice President since March 2010. From August 2002 until July 2007, Mr. Loomis served as Product / Business Unit Manager, ASTeX Products. Prior to joining MKS, Mr. Loomis served in various leadership positions including Product Manager, Operations Manager and Strategic Marketing Manager at Axcelis Technologies (formerly Eaton Semiconductor Equipment Operations), a global supplier of ion implantation equipment used in the semiconductor manufacturing industry. Prior to that, Mr. Loomis served in various engineering leadership positions at General Dynamics Electric Boat, a designer and builder of nuclear powered submarines. Mr. Loomis received his M.B.A. from Boston University, M.S.E.E. from Rensselaer Polytechnic Institute and B.S.E.E. from the University of Maryland.

*John A. Smith, Senior Vice President, ASG Products, Age 62*

Dr. Smith has served as our Senior Vice President, ASG Products (our Analytical Solutions Group) since January 2011. Dr. Smith served as Vice President and Chief Technology Officer from January 2005 until January 2011. From December 2002 to January 2005, Dr. Smith served as Vice President of Technology and General Manager of the Instruments and Control Systems Product Group, which was comprised of Pressure Measurement and Control, Materials Delivery, Gas Composition and Analysis, and Control and Information Technology products. Prior to this position, Dr. Smith served as Vice President and General Manager of Materials Delivery Products and Advanced Process Control, from February 2002 to December 2002. From July 1994 until February 2002, he was Managing Director of MKS Instruments, U.K. Ltd. Dr. Smith has a Ph.D. in electronic engineering from the University of Manchester, U.K.

Our executive officers are appointed by the Board of Directors on an annual basis and serve until their successors are duly appointed and qualified. There are no family relationships among any of our executive officers or directors.

## EXECUTIVE COMPENSATION

### Compensation Discussion and Analysis

#### *Compensation Philosophy and Objectives*

The primary objective of our executive compensation program is to attract, retain and motivate the critical talent that is required to execute our business strategy and lead us to achieve our long-term growth and earnings goals. This section summarizes our compensation philosophy and objectives relating to our principal executive officer, principal financial officer, and each of the three other most highly compensated executive officers, who we refer to in this proxy statement as the “Named Executive Officers.”

At our 2012 Annual Meeting of Shareholders, held on May 7, 2012, we submitted to our shareholders an advisory vote on executive compensation. Although this annual advisory “say-on-pay” vote is non-binding, the Compensation Committee has considered, and will continue to consider, the outcome of this vote each year when making compensation decisions for our Named Executive Officers. At last year’s Annual Meeting, our shareholders overwhelmingly approved the compensation of our named executives, with approximately 97% of the shares voting in favor.

The Compensation Committee considered the results of the 2012 say-on-pay vote, and based upon the strong shareholder support, does not believe that our executive compensation program requires material changes. The Compensation Committee will continue to consider the views of our shareholders in connection with our executive compensation program and make improvements based upon evolving best practices, market compensation information and changing regulatory requirements. The Compensation Committee believes that this shareholder vote is an endorsement of the compensation philosophy of the Company.

Our executive compensation program is guided by the following principles:

- Offer compensation programs that are competitive with programs at companies of similar size and in a similar industry.
- Reward individual initiative, leadership and achievement.
- Provide short-term annual performance bonus incentives for management to meet or exceed our earnings goals.
- Provide long-term equity incentive compensation, such as restricted stock units, or RSUs, to encourage management to focus on shareholder return.
- Emphasize our pay-for-performance philosophy.
- Align our executives' interests with those of our shareholders.

Our executive compensation program is designed to provide an overall compensation package that is competitive, on a position-by-position basis, when benchmarked against that of comparable companies, while factoring in an executive's individual performance, tenure and potential with the Company. The differentiation in compensation among the executive officers reflects the relative value that the market places on these positions, as well as each individual's performance, tenure and potential with the Company. Our goal is to use executive compensation programs to closely align the interests of our management with the interests of shareholders so that our management has incentives to achieve short-term performance goals while building long-term value for our shareholders. We review our executive compensation programs from time to time in order to determine their competitiveness and to take into account factors that are unique to us.

In February 2013, our Compensation Committee approved a clawback policy, which is applicable to incentive-based compensation (such as a cash-based management incentive bonus or performance-based restricted stock units) that is awarded to executive officers after the adoption of the policy. Pursuant to the policy, in the event we are required to prepare an accounting restatement due to material noncompliance with financial reporting requirements, we will use reasonable efforts to recover any amount in excess of what would have been paid to such executive officers (or such former executive officers) under the accounting restatement for any such incentive-based compensation during the 3-year period preceding the restatement. In addition, in February 2013, our Board of Directors adopted amendments to our Insider Trading Policy which, among other things, prohibit any of our directors or employees from engaging in transactions involving financial instruments (including pre-paid variable forward contracts, equity swaps, collars and exchange funds) that are designed to hedge or offset any decrease in the market value of Company securities, and prohibits such individuals from purchasing Company securities on margin or pledging such securities as collateral for a loan.

#### ***Elements of Compensation***

The following summarizes the compensation elements for our Named Executive Officers. We benchmark each of the various compensation elements, including salary, short-term incentives, and long-term incentives, to the median levels for the individual position in the market. In considering the compensation of an executive relative to the market level, we look qualitatively at the individual's overall performance, tenure and potential with the Company. Currently, all of our Named Executive Officers are paid in the range of their competitive market. We have entered into employment agreements with our Named Executive Officers (except Dr. Lee), elements of which are described below.

## *Base Salary*

Base salaries are designed to provide executives with a level of predictability and stability with respect to a portion of their total compensation package. In establishing base salaries for executive officers, the Compensation Committee considers the executive's responsibilities, performance, historical salary levels, internal equity among executives and the base salaries of executives at comparable companies and, with respect to salaries other than that of the Chief Executive Officer, the Chief Executive Officer's recommendations. Because of the highly cyclical nature of our business, we have from time to time imposed temporary salary reductions. For example, in 2008 and 2009, because of the economic downturn, our Named Executive Officers were subject to temporary salary reductions.

## *Short-term Incentives — Bonus Plan*

Our Management Incentive Bonus Plan provides a short-term incentive to reward management for reaching our overall earnings goals and to reinforce our pay-for-performance philosophy. We believe that our plan provides significant incentive to the executive officers to exceed our financial goals. In 2012, each executive was eligible for a performance bonus calculated based on a specified target percentage of base salary, called an "Individual Incentive Target." We use solely a corporate performance objective, rather than business unit objectives, which we believe eliminates complexity, fosters a cooperative effort and closely aligns all executives' interests with those of our shareholders. While the 2012 bonus program reflects our typical strategy with respect to bonuses, we do, from time to time, customize our bonus program to take into account special circumstances. For example, due to the worldwide economic crisis in 2009, the Company did not offer a Management Incentive Bonus Plan, and with the return of the market in 2010, the Company offered a six-month component to the bonus plan, in addition to the annual component, to reward management for exceptional growth in early 2010. Any such variations to the program are only expected to occur in unusual circumstances.

In 2012, the Management Incentive Bonus Plan formula was calculated as follows:

$$\text{Base Salary} \times \text{Individual Incentive Target} \times \text{Corporate Performance Multiplier}$$

In 2012, the Individual Incentive Targets were 100% of base salary for Mr. Berlinghieri, 60% for Mr. Bagshaw, 75% for Mr. Colella, 60% for Mr. Lee and 50% for Mr. Smith.

Annual achievement of the Management Incentive Bonus Plan has varied widely, from no payment in some years to the maximum of 200% in others. The average bonus payout in the past ten years through 2012 has been approximately 79.4% (out of a maximum of 200%). While the Company endeavors to set reasonable, but challenging, targets for the plan each year, consistent achievement is particularly challenging in the semiconductor industry, which is subject to wide and often unpredictable demand shifts.

The "Corporate Performance Multiplier" for the bonus in 2012 ranged from 0% for achievement below the specified minimum annual corporate goal to a maximum of 200% for achievement of the maximum annual corporate goal. Accordingly, the maximum payout possible for each executive was 200% of the target bonus and the minimum payout was zero, with incremental payouts for performance between these levels, beginning at 70%. In 2012, performance bonuses were based upon our achievement of specific goals based on adjusted operating income after bonus and excluding special items. Participants would not receive any portion of their bonus if such income was less than the minimum threshold of \$85.3 million. Participants would receive 70% of their bonus if such income was \$85.3 million, and would receive the maximum 200% if such income was \$173 million or more, with incremental payments for achievement in between. In 2012, because our adjusted operating income after bonus and excluding special items was \$88.5 million, participants received 73% of their bonuses.

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

We provide our executives with long-term incentive compensation, in the form of RSUs, in order to:

- Align our executives' interests with those of our shareholders.
- Balance the short-term focus of annual incentive compensation with creating long-term shareholder value.
- Retain executives because equity-based compensation vests over time.

We use RSUs as our equity incentive because we believe RSUs help ensure our executives' interests are aligned with our shareholders in both a rising and a declining stock market. We believe RSUs are preferable to options, which have a relatively high accounting cost as compared to their potential value to the executive, and preferable to restricted stock, which gives the executive voting and dividend rights prior to full vesting.

The Named Executive Officers receive half of their targeted annual equity grant value in the form of performance-based RSUs to further our pay-for-performance philosophy. The other half of their grant is in the form of time-based RSUs. In 2012, our performance objectives were tied to targets for adjusted operating cash flow from operations (net income plus depreciation, amortization and non-cash stock-based compensation and excluding special items), set at varying revenue levels. We try to select performance criteria that best align with our corporate objective. For example, in 2009 and 2010, due to the unusual economic conditions at that time, our performance objectives related to achievement of annual corporate cash break-even levels, to motivate executives to control costs during the downturn.

In 2012, according to our performance targets, participants would forfeit all of their performance-based RSUs if our adjusted operating cash flow from operations was less than identified amounts at specified revenue ranges. For example, full forfeiture would occur if our adjusted operating cash flow from operations was less than \$52.2 million at a revenue level of \$600 million, or if such cash flow was less than \$126.9 million at a revenue level of \$900 million (with intermediate adjusted cash flow minimum thresholds at different revenue levels in between). However, if the operating cash flows set forth in the preceding sentence were achieved at the respective revenue levels identified, participants would receive 50% of their target performance-based RSUs. If our adjusted operating cash flow from operations was \$70.5 million or more at a revenue level of \$600 million, or was greater than \$171.2 million at a revenue level of \$900 million (with incremental thresholds in between), then participants would receive the maximum 150% of their target. Incremental payments for operating cash flow achievements between the minimum and maximum levels were also identified. In 2012, because our adjusted operating cash flow was \$85.0 million, participants achieved 147% of their target for their performance-based RSUs. RSUs granted to Named Executive Officers vest in equal annual installments over three years, subject to achievement of the performance goal with respect to the performance-based portion.

When establishing equity grant levels, the Compensation Committee considers general corporate performance and material economic conditions, comparable company grants to comparable executives, executive seniority and experience, the dilutive impact of the grants, previous grant history for each executive, vesting schedules of outstanding equity-based grants, the current stock price and individual contributions to our financial, operational and strategic objectives and, with respect to grants made to individuals other than the Chief Executive Officer, the Chief Executive Officer's recommendations.

It is our practice to make an initial equity-based grant to all executives at the time they commence employment, in an amount that is consistent with those granted to executive officers in the industry at similar levels of seniority. In addition, we typically make an annual grant of equity-based compensation to executives during the first fiscal quarter of each year. Discretionary equity-based grants may be made throughout the year to provide an incentive to achieve a specific goal or to reward a significant achievement.

In January 2013, our Board of Directors adopted Stock Retention Guidelines, effective for years beginning with 2013, which is applicable to members of the Board of Directors, the Chief Executive Officer and any other person who is or was a Named Executive Officer while the guidelines are effective. The Stock Retention Guidelines provide that (1) members of the Board of Directors shall own an amount of stock of the Company with a value equal to at least three times the annual retainer for Board service (exclusive of any compensation for Committee service, meeting fees, leadership roles and the like), (2) the Chief Executive Officer shall own an amount of stock of the Company with a value equal to at least three times his or her annual base salary (excluding any bonus, award or special compensation), and (3) other Named Executive Officers shall own an amount of stock of the Company with a value equal to at least two times his or her annual base salary (excluding any bonus, award or special compensation), based in each case, on values in effect as of December 31 of the applicable year and subject to the terms in the guidelines. The guidelines provide for a phase-in period over five years to achieve the respective ownership goals.

### *Retirement Benefits*

Pursuant to employment agreements, we provide supplemental retirement benefits to certain executives, including Messrs. Berlinghieri and Colella, or, in the event of such executive's death, to his spouse. We also provide certain supplemental retirement benefits to Dr. Smith. These supplemental benefits are designed to reward long service with us and to serve as a significant incentive for these executives to remain with us. These benefits are designed to provide for supplemental retirement benefits for executives that are not available under our company-wide employee benefit plans due to regulatory limitations on benefit accruals.

We also provide retiree medical benefits to Messrs. Berlinghieri and Colella, and their respective spouses, for their lifetimes, upon meeting specified criteria. This benefit was designed to retain these executives over the long-term from the time that the benefit was first granted to the executive because it is contingent upon the executive maintaining his employment with us until age 62, with specified exceptions.

Since 2011, it has been our policy not to grant certain post-retirement benefits to executives in the future, including post-retirement medical benefits, post-retirement car allowance, and Section 4999 excise tax gross ups in the event of termination following a change-in-control. While these benefits were attractive elements to retain certain executives historically, the elimination of any future grants of these benefits more closely meets our objective to align executive compensation with performance.

### *Perquisites*

We offer certain perquisites to the Named Executive Officers to allow executives to focus on corporate strategy and enhancing shareholder value, to provide competitive pay packages and, in certain circumstances, to entertain customers. Examples of these perquisites are car payments, health cost reimbursements and club memberships.

### *Severance and Change-in-Control Provisions*

We have entered into employment agreements with each of the Named Executive Officers other than Dr. Lee, providing for certain severance provisions and benefits associated with various termination scenarios and restricting the officers' ability to compete with us during and following the termination of employment. In addition, RSU agreements with the Named Executive Officers provide for acceleration of vesting in the event the executive is terminated without cause or resigns with good reason within 24 months after a change-in-control. The severance and change-in-control provisions are designed to be competitive in the marketplace, to provide security for Named Executive Officers in the event that we are acquired and his respective position is impacted and to provide an incentive for the executive to stay with us through such a change-in-control event. They are also intended to protect us from competitive harm, by compensating the Named Executive Officers for agreeing to substantial non-compete provisions after termination. See "Potential Payments Upon Termination of Employment or Change-in-Control" for more information about these agreements.

### *Compensation Consultant; Market Comparison*

The Company periodically engages a compensation consultant to serve as an independent advisor to the Compensation Committee regarding compensation for the Board of Directors and our executives. The Compensation Committee utilizes the compensation consultant in the following ways:

- to provide the Compensation Committee and the Company with occasional consultation regarding compensation strategies and programs;
- to review our peer group to determine the appropriateness of its composition;
- to provide benchmarking compensation data for executives and non-executives;
- to conduct, from time to time, formal competitive compensation analysis for the Compensation Committee regarding the Board of Directors and each executive, on a position-by-position basis, in comparison to similarly situated executives in our peer group; and
- to periodically conduct a risk assessment of the Company's compensation policies and practices.

The Compensation Committee may form and delegate authority to one or more subcommittees as it deems appropriate, from time to time, under the circumstances including (a) a subcommittee consisting of a single member, and (b) a subcommittee consisting of at least two members, each of whom qualifies as a “non-employee director,” as such term is defined, from time to time, in Rule 16b-3 promulgated under the Exchange Act, and an “outside director,” as such term is defined, from time to time, in Section 162(m) of the Internal Revenue Code of 1986, as amended, and the rules regulations thereunder.

Since 2007, the Compensation Committee has engaged Radford, An Aon Hewitt Company (“Radford”), as its compensation consultant. The Compensation Committee has determined that the engagement of Radford as a compensation consultant does not raise any conflicts of interest with the Company.

When determining executive compensation for 2012, the Compensation Committee, with the assistance of Radford, reviewed size and industry-appropriate broad survey data from The 2011 Radford Global Technology Compensation Survey as well as publicly available compensation data from the following comparable peer companies:

Advanced Energy Industries, Inc.  
Axcelis Technologies, Inc.  
Brooks Automation, Inc.  
Cymer, Inc.  
Daktronics, Inc.  
Entegris, Inc.  
FEI Co.

Itron, Inc.  
Kulicke & Soffa Industries, Inc.  
Newport Corp.  
Photronics, Inc.  
Teradyne, Inc.  
Varian Semiconductor Equipment Assoc., Inc.

These peer companies were selected because they compete in the semiconductor industry and are similar to MKS in terms of revenue size, market capitalization, net income and total headcount.

In October 2012, the Compensation Committee engaged Radford to prepare a competitive compensation analysis for each of our executives on a position-by-position basis for the purposes of determining executive compensation for 2013. This 2013 peer group differs from our prior peer group listed above as follows: Varian Semiconductor Equipment Assoc., Inc. was removed because it was acquired. Axcelis Technologies, Inc., Daktronics, Inc. and Itron, Inc. were removed to better align MKS’ market capitalization with the median of the peer group; and Coherent, Inc., ESCO Technologies, Inc., FLIR Systems, Inc., GT Advanced Technologies, Inc., JDS Uniphase Corp., MTS Systems Corporation, Plantronics, Inc., Varian Medical Systems, Inc. and Veeco Instruments, Inc. were added to maintain a robust sample size of similar semiconductor companies in terms of revenue size, market capitalization, net income and total headcount.

In January 2013, the Compensation Committee also engaged Radford to conduct a formal competitive analysis of our compensation for the Board of Directors using board compensation data from the same 2013 peer group listed above for executive compensation. In February 2013, the Compensation Committee recommended, and the Board of Directors approved, changes to the compensation for the Board of Directors to more closely reflect standard practices, by eliminating meeting fees and establishing value-based equity grants. These changes are reflected in greater detail below in the section titled “Director Compensation.”

#### ***Role of Company Executives***

The Chief Executive Officer reviews the performance of all of the other executive officers with the Compensation Committee and makes recommendations relating to executive compensation of such executives. Management develops proposed goals for review and approval by the Compensation Committee for the annual performance bonus and performance-based equity, develops proposals relating to potential changes in compensation programs for review and approval by the Compensation Committee and provides the Compensation Committee and advisors with information necessary to evaluate and implement compensation proposals and programs.

## **Impact of Accounting and Tax on the Form of Compensation**

### *Impact of Code Section 162(m)*

Section 162(m) of the Internal Revenue Code of 1986, as amended, generally disallows a tax deduction to public companies for certain compensation in excess of \$1.0 million per person paid to such company's chief executive officer and other executive officers whose compensation is required to be reported to shareholders pursuant to the Securities Exchange Act of 1934, as amended, by reason of being among the four most highly-paid executive officers. Certain compensation, including qualified performance-based compensation, will not be subject to the deduction limit if certain requirements are met. The Compensation Committee reviews the potential effect of Section 162(m) periodically and generally seeks to structure the compensation granted to its executive officers in a manner that is intended to avoid disallowance of deductions under Section 162(m). However, because neither our 2004 Stock Incentive Plan (other than with respect to stock options) nor our Management Incentive Bonus Plan is designed to qualify as performance-based compensation under Section 162(m), it is possible that a portion of any bonus payable to, or compensation arising under equity awards (other than stock options) granted to, the Chief Executive Officer and certain other executives will not be deductible for federal income tax purposes. The Compensation Committee reserves the right to use its judgment to authorize compensation payments which may be in excess of the Section 162(m) limit when the Committee believes such payments are appropriate, after taking into consideration changing business conditions or the officer's performance, and are in the best interests of the shareholders.

### *Impact of ASC 718*

The Compensation Committee has considered the impact of the Financial Accounting Standards Board ("FASB") Accounting Standards Codification ("ASC") 718 (formerly SFAS 123R), on our use of equity incentives as a key retention tool. Because of the significant cost associated with options under ASC 718 as compared to the potential value delivered, beginning in 2006, the Compensation Committee elected to grant more efficient equity instruments instead of stock options. Accordingly, it granted to executives restricted stock in 2006 and RSUs beginning in 2007. The Compensation Committee will regularly review its choice of equity instruments taking into account both tax and accounting considerations.

## **COMPENSATION COMMITTEE REPORT**

The Compensation Committee has reviewed and discussed the "Compensation Discussion and Analysis" required by Item 402(b) of Regulation S-K with management. Based on such review and discussions, the Committee recommended to the Board of Directors that the "Compensation Discussion and Analysis" be included in this proxy statement.

Respectfully submitted,  
Robert R. Anderson, Chair  
Cristina H. Amon  
Peter R. Hanley

## Summary Compensation Table for 2012

The following table sets forth the aggregate amounts of compensation earned by our Named Executive Officers in the years ended December 31, 2012, 2011 and 2010.

| Name and Principal Position                      | Year | Salary (\$) | Bonus (\$) | Stock Awards \$(1) | Non-Equity Incentive Plan Compensation \$(2) | Change in Pension Value and Nonqualified Deferred Compensation Earnings \$(3) | All Other Compensation \$(4) | Total (\$)  |
|--|------|-------------|------------|--------------------|--|---|------------------------------|-------------|
| Leo Berlinghieri,<br>CEO(5)                      | 2012 | \$624,519   | \$ 0       | \$ 2,000,000       | \$ 455,899                                   | \$ 2,639,240  | \$ 52,773                    | \$5,772,431 |
|  | 2011 | \$600,005   | \$ 0       | \$ 1,875,000       | \$ 534,004                                   | \$ 3,999,642  | \$ 55,768                    | \$7,064,419 |
|  | 2010 | \$574,150   | \$ 0       | \$ 1,445,340       | \$ 1,320,546                                 | \$ 2,239,680  | \$ 44,268                    | \$5,623,984 |
| Seth H. Bagshaw,<br>VP, CFO & Treasurer          | 2012 | \$324,519   | \$ 0       | \$ 500,000         | \$ 142,139                                   | \$ 0  | \$ 55,311                    | \$1,021,969 |
|  | 2011 | \$300,005   | \$ 0       | \$ 500,000         | \$ 133,502                                   | \$ 0  | \$ 54,465                    | \$ 987,972  |
|  | 2010 | \$274,440   | \$ 0       | \$ 266,832         | \$ 315,606                                   | \$ 0  | \$ 45,885                    | \$ 902,763  |
| Gerald G. Colella,<br>President & COO(6)         | 2012 | \$431,673   | \$ 0       | \$ 687,500         | \$ 236,341                                   | \$ 1,142,227  | \$ 52,880                    | \$2,550,621 |
|  | 2011 | \$411,200   | \$ 0       | \$ 625,000         | \$ 256,178                                   | \$ 1,578,248  | \$ 55,102                    | \$2,925,728 |
|  | 2010 | \$399,332   | \$ 0       | \$ 555,900         | \$ 642,925                                   | \$ 849,239  | \$ 47,976                    | \$2,495,372 |
| John T.C. Lee, Sr. VP,<br>Controls, HPS and PFMC | 2012 | \$334,712   | \$ 0       | \$ 312,500         | \$ 146,604                                   | \$ 0  | \$ 60,125                    | \$ 853,941  |
|  | 2011 | \$320,002   | \$ 0       | \$ 300,000         | \$ 156,641                                   | \$ 0  | \$ 231,990                   | \$1,008,633 |
|  | 2010 | \$299,538   | \$ 0       | \$ 277,950         | \$ 378,916                                   | \$ 0  | \$ 56,280                    | \$1,012,684 |
| John A. Smith, Sr. VP,<br>ASG Products           | 2012 | \$304,904   | \$ 0       | \$ 225,000         | \$ 111,290                                   | \$ 144,689  | \$ 42,847                    | \$ 828,730  |
|  | 2011 | \$295,467   | \$ 0       | \$ 225,000         | \$ 131,483                                   | \$ 69,046   | \$ 46,132                    | \$ 767,128  |
|  | 2010 | \$288,199   | \$ 0       | \$ 222,360         | \$ 332,450                                   | \$ 141,085  | \$ 40,790                    | \$1,024,884 |

- Represents the grant date fair value for each RSU granted to the executive officer during the covered year, calculated in accordance with FASB ASC Topic 718 (formerly FAS 123R). The assumptions used in determining the grant date fair values of awards are set forth in Note 19 to our consolidated financial statements, which are included in our Annual Report on Form 10-K filed with the SEC on February 26, 2013.
- Amounts shown reflect compensation under the Management Incentive Bonus Plan earned for the year indicated, which was paid in the following year. For 2012, 2011 and 2010, each executive was eligible for an annual performance bonus calculated based on a specified target percentage of base salary, called an "Individual Incentive Target." The maximum bonus payout possible was 200% of this Individual Incentive Target and the minimum payout was zero, with incremental pay-outs for performance between these levels. Annual performance bonuses were paid out upon achievement of specific pro forma pre-tax operating income goals. In 2010, in addition to the annual bonus, each executive was also eligible for a six-month component of the bonus, up to 30% of the Individual Incentive Target. In 2012, the Individual Incentive Targets for the Named Executive Officers were: Mr. Berlinghieri — 100%, Mr. Bagshaw — 60%, Mr. Colella — 75%, Mr. Lee — 60% and Mr. Smith — 50%. In 2011 and 2010, the Individual Incentive Targets for the Named Executive Officers were: Mr. Berlinghieri — 100%, Mr. Bagshaw — 50%, Mr. Colella — 70%, Mr. Lee — 55% and Mr. Smith — 50%. For 2012, we paid a bonus of 73% of Individual Incentive Targets to the Named Executive Officers. For 2011, we paid a bonus of 89% of Individual Incentive Targets to the Named Executive Officers. For 2010, we paid a bonus of 200% of Individual Incentive Targets to the Named Executive Officers for the annual component, and a bonus of 30% of Individual Incentive Targets for the 2010 six-month component.
- The employment agreements for each of Messrs. Berlinghieri and Colella provide for supplemental retirement benefits. The amounts listed represent the actuarial increase in present value for each year indicated, from the prior fiscal year. The employment agreement for Mr. Smith provides for a deferred compensation program and the amount listed represents the Company contributions plus any market gains or losses.

- (4) For Mr. Berlinghieri, with respect to 2012, this amount was comprised of \$13,113 for car related expenses, \$5,870 for golf club membership, \$26,290 for company paid health and life insurance and \$7,500 for 401(k) matching contributions. With respect to 2011, this amount was comprised of \$13,172 for car related expenses, \$5,870 for golf club membership, \$28,385 for company paid health and life insurance, \$1,000 for a length of service award and \$7,341 for 401(k) matching contributions. With respect to 2010, this amount was comprised of \$14,091 for car related expenses, \$5,870 for golf club membership, \$23,586 for company paid health and life insurance and \$721 for a length of service award. For Mr. Bagshaw, with respect to 2012, this amount was comprised of \$13,858 for car related expenses, \$5,870 for golf club membership, \$28,083 for company paid health and life insurance and \$7,500 for 401(k) matching contributions. With respect to 2011, this amount was comprised of \$13,799 for car related expenses, \$5,870 for golf club membership, \$26,946 for company paid health and life insurance, \$500 for a length of service award and \$7,350 for 401(k) matching contributions. With respect to 2010, this amount was comprised of \$12,479 for car related expenses, \$5,870 for golf club membership, \$23,861 for company paid health and life insurance and \$3,675 for 401(k) matching contributions. For Mr. Colella, with respect to 2012, this amount was comprised of \$14,260 for car related expenses, \$5,870 for golf club membership, \$25,250 for company paid health and life insurance and \$7,500 for 401(k) matching contributions. With respect to 2011, this amount was comprised of \$14,102 for car related expenses, \$5,870 for golf club membership, \$26,780 for company paid health and life insurance, \$1,000 for a length of service award and \$7,350 for 401(k) matching contributions. With respect to 2010, this amount was comprised of \$13,806 for car related expenses, \$5,870 for golf club membership, \$25,992 for company paid health and life insurance and \$2,308 for 401(k) matching contributions. For Mr. Lee, with respect to 2012, this amount was comprised of \$19,779 for car related expenses, \$3,779 for golf club membership, \$28,217 for company paid health and life insurance, \$850 for a patent award and \$7,500 for 401(k) matching contributions. With respect to 2011, this amount was comprised of \$174,913 for relocation expenses, \$15,679 for car related expenses, \$7,121 for golf club membership, \$26,677 for company paid health and life insurance, \$250 for a length of service award and \$7,350 for 401(k) matching contributions. With respect to 2010, this amount was comprised of \$15,470 for car related expenses, \$6,253 for golf club membership, \$29,884 for company paid health and life insurance and \$4,673 for 401(k) matching contributions. For Mr. Smith, with respect to 2012, this amount was comprised of \$12,041 for car related expenses, \$5,870 for golf club membership, \$15,908 for company paid health and life insurance, \$732 for a length of service award, \$1,750 for a patent award and \$6,546 for 401(k) matching contributions. With respect to 2011, this amount was comprised of \$12,102 for car related expenses, \$5,870 for golf club membership, \$14,560 for company paid health and life insurance, \$1,000 for a length of service award, \$5,250 for a patent award and \$7,350 for 401(k) matching contributions. With respect to 2010, this amount was comprised of \$12,803 for car related expenses, \$5,870 for golf club membership, \$18,321 for company paid health and life insurance and \$3,796 for 401(k) matching contributions.
- (5) Mr. Berlinghieri also served as President for all the periods presented and until February 2013.
- (6) Mr. Colella served as Vice President and Chief Operating Officer for all of the periods presented and became President and Chief Operating Officer in February 2013.

#### Grants of Plan-Based Awards in Fiscal Year 2012

| Name              | Grant Date(1) | Estimated Future Payouts Under Non-Equity Incentive Plan Awards(2) |             |              | Estimated Future Payouts Under Equity Incentive Plan Awards(3) |            |             | All Other Stock Awards: Number of Shares of Stock or Units (#)(4) | Grant Date Fair Value of Stock Awards \$(5) |
|-------------------|---------------|--|-------------|--------------|--|------------|-------------|---|---|
|                   |               | Threshold (\$)   | Target (\$) | Maximum (\$) | Threshold (#)  | Target (#) | Maximum (#) |   |   |
| Leo Berlinghieri  | 2/23/2012     | \$ 437,500   | \$625,000   | \$ 1,250,000 | 12,715   | 25,429     | 38,144      | 25,429  | \$ 2,000,000                                |
| Seth H. Bagshaw   | 2/23/2012     | \$ 136,500   | \$195,000   | \$ 390,000   | 3,179  | 6,357      | 9,536       | 6,357   | \$ 500,000                                  |
| Gerald G. Colella | 2/23/2012     | \$ 227,325   | \$324,750   | \$ 649,500   | 4,371  | 8,741      | 13,112      | 8,741   | \$ 687,500                                  |
| John T.C. Lee     | 2/23/2012     | \$ 140,700   | \$201,000   | \$ 402,000   | 1,987  | 3,973      | 5,960       | 3,973   | \$ 312,500                                  |
| John A. Smith     | 2/23/2012     | \$ 106,750   | \$152,400   | \$ 305,000   | 1,431  | 2,861      | 4,291       | 2,861   | \$ 225,000                                  |

- (1) This column shows the date of grant for all equity awards granted in 2012.

- (2) Represents aggregate threshold, target and maximum payout levels under the 2012 Management Incentive Bonus Plan. The actual amount of incentive bonus earned by each Named Executive Officer in 2012 is reported under the Non-Equity Incentive Plan Compensation column in the Summary Compensation Table. See footnote 3 to the Summary Compensation table for details on the terms of the plan.
- (3) These RSUs vest in equal annual installments over three years, subject to achievement of performance criteria.
- (4) These RSUs vest in equal annual installments over three years.
- (5) Reflects the grant date fair value of RSUs. The fair value was \$31.46 per share for RSUs awarded on February 23, 2012.

#### Outstanding Equity Awards at 2012 Fiscal Year-End

| Name              | Option Awards(1)  |                            |                        | Stock Awards(2)   |   |   |   |
|-------------------|---|----------------------------|------------------------|---|---|---|---|
|                   | Number of Securities Underlying Unexercised Options (#) Exercisable | 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(3) (\$) | Equity Incentive Plan Awards: Number of Unearned Shares, Units or Other Rights That Have Not Vested (#) | Equity Incentive Plan Awards: Market or Payout Value of Unearned Shares, Units or Other Rights That Have Not Vested(3) (\$) |
| Leo Berlinghieri  | 31,800<br>9,600   | \$ 27.11<br>\$ 29.93       | 11/11/13<br>01/05/14   | 10,834(4)<br>14,625(4)<br>16,656(5)<br>23,651(5)<br>25,429(6) | \$ 279,300<br>\$ 377,032<br>\$ 429,401<br>\$ 609,720<br>\$ 655,563    | 38,144(6)   | \$ 983,344  |
| Seth H. Bagshaw   | 0   |                            |                        | 2,000(4)<br>2,700(4)<br>4,442(5)<br>6,307(5)<br>6,357(6)      | \$ 51,560<br>\$ 69,606<br>\$ 114,520<br>\$ 162,592<br>\$ 163,891      | 9,536(6)  | \$ 245,836  |
| Gerald G. Colella | 250<br>7,000  | \$ 26.86<br>\$ 29.93       | 12/03/13<br>01/05/14   | 4,167(4)<br>5,625(4)<br>5,553(5)<br>7,884(5)<br>8,741(6)      | \$ 107,425<br>\$ 145,013<br>\$ 143,151<br>\$ 203,240<br>\$ 225,350    | 13,112(6)   | \$ 338,024  |
| John T.C. Lee     | 0   |                            |                        | 2,084(4)<br>2,813(4)<br>2,665(5)<br>3,784(5)<br>3,973(6)      | \$ 53,726<br>\$ 72,519<br>\$ 68,712<br>\$ 97,555<br>\$ 102,432        | 5,960(6)  | \$ 153,647  |
| John A. Smith     | 0   |                            |                        | 1,667(4)<br>2,250(4)<br>1,999(5)<br>2,838(5)<br>2,861(6)      | \$ 42,975<br>\$ 58,005<br>\$ 51,534<br>\$ 73,167<br>\$ 73,751         | 4,291(6)  | \$ 110,626  |

- (1) Stock options listed above have a 10-year term and are fully vested. The grant date for each option is the date on or about 10 years prior to the respective date listed under the heading Option Expiration Date.
- (2) Except as expressly set forth in the footnotes below, RSUs vest in equal annual installments over 3 years commencing on the first anniversary of the grant date. RSUs listed in "Equity Incentive Plan Awards" columns were also subject to achievement of performance criteria as of December 31, 2012.
- (3) Reflects the values as calculated based on the closing price of our common stock on December 31, 2012 of \$25.78 per share.
- (4) Grant date is March 4, 2010.
- (5) Grant date is February 28, 2011.
- (6) Grant date is February 23, 2012.

## Option Exercises and Stock Vested in Fiscal Year 2012

| Name              | Option Awards                             |                                 | Stock Awards                             |                                   |
|-------------------|---|---------------------------------|--|-----------------------------------|
|                   | Number of Shares Acquired on Exercise (#) | Value Realized On Exercise (\$) | Number of Shares Acquired on Vesting (#) | Value Realized on Vesting(1) (\$) |
| Leo Berlinghieri  | 8,600                                     | \$ 27,185                       | 60,227                                   | \$ 1,774,466                      |
| Seth H. Bagshaw   | 0   | \$ 0                            | 15,473                                   | \$ 441,073                        |
| Gerald G. Colella | 0   | \$ 0                            | 21,410                                   | \$ 629,486                        |
| John T.C. Lee     | 0   | \$ 0                            | 15,370                                   | \$ 456,557                        |
| John A. Smith     | 0   | \$ 0                            | 9,136                                    | \$ 268,452                        |

(1) Value realized represents the fair market value of the shares at the time of vesting.

## Equity Compensation Plan Information

The following table provides information about the securities authorized for issuance under our equity compensation plans as of December 31, 2012:

| Plan Category  | Number of securities to be issued upon exercise of outstanding options, warrants and rights (a) | Weighted-average exercise price of outstanding options, warrants and rights (b) | Number of securities remaining available for future issuance under equity compensation plans (excluding securities reflected in column (a)) (c) |
|--|---|---|---|
| Equity compensation plans approved by security holders     | 1,197,852   | \$ 4.64   | 11,841,711(1)(2)  |
| Equity compensation plans not approved by security holders | 0   | \$ 0  | 0   |
| <b>Total</b>   | <b>1,197,852</b>  | <b>\$ 4.64</b>  | <b>11,841,711(1)(2)</b>   |

- Securities available for award under the 2004 Stock Incentive Plan increased on January 1 of each year by 5% of the issued and outstanding shares as of December 31 of the prior year, up to an aggregate maximum of 15,000,000 shares authorized by the shareholders. On January 1, 2010, the maximum of 15,000,000 was achieved and accordingly, securities authorized for issuance under the plan have not increased since.
- Includes 350,748 shares issuable under the Company's Third Restated Employee Stock Purchase Plan and 96,470 shares issuable under the Company's Second Restated International Employee Stock Purchase Plan as of December 31, 2012.

## Pension Benefits

Pursuant to employment agreements, we provide supplemental retirement benefits to Messrs. Berlinghieri and Colella, or, in the event of either such executive's death, to his spouse. These supplemental benefits are designed to reward long-term service with us and to serve as a significant incentive for these executives to remain with us. In addition, these benefits are designed to provide for supplemental retirement benefits for executives that are not available under our company-wide employee benefits due to regulatory limitations on benefit accruals.

The benefits vest upon (a) the employee reaching both (i) specified ages, and (ii) 25 years of service with us, in each case while employed with us, or (b) upon the employee's earlier death, disability, termination without cause (as defined in the employment agreements) or a qualifying termination in connection with a change-in-control (as defined in the agreement), and are forfeited in the event of termination for cause. When vested, the benefits provide for a lump sum payment of an aggregate amount calculated in accordance with actuarial tables, payable not sooner than six months after the date of termination (except in the case of death or disability). The

actuarial calculations include assumptions for decreased benefit continuation for each executive's surviving spouse in the event of the executive's death. The supplemental retirement benefits are not subject to any deduction for social security or other offset amounts. The benefit amount is based upon the final average compensation, which is equal to the average of the respective officer's three highest years of compensation (salary plus bonus) during the 10 years prior to the officer's year of retirement (or other qualifying termination). The benefits for each of Messrs. Berlinghieri and Colella will vest 80%, 90% and 100% at the ages of 60, 61 and 62, respectively.

The table below summarizes the present value as of December 31, 2012 of the accumulated benefits of our Named Executive Officers under their Supplemental Pension arrangements.

#### PENSION BENEFITS

| Name              | Plan Name   | Number of Years Credited Service (#)(1) | Present Value of Accumulated Benefit \$(2) | Payments During the Last Fiscal Year (\$) |
|-------------------|---|---|--|---|
|                   | Supplemental Retirement Benefits under Employment Agreement |   |  |   |
| Leo Berlinghieri  |   | 25                                      | \$ 13,731,216                              | \$ 0                                      |
| Seth H. Bagshaw   | N/A   | N/A                                     | N/A  | N/A                                       |
|                   | Supplemental Retirement Benefits under Employment Agreement |   |  |   |
| Gerald G. Colella |   | 25                                      | \$ 6,220,859                               | \$ 0                                      |
| John T.C. Lee     | N/A   | N/A                                     | N/A  | N/A                                       |
| John A. Smith     | N/A   | N/A                                     | N/A  | N/A                                       |

(1) Maximum number of years credited is 25.

(2) Present value of accumulated benefit is calculated using the same assumptions we used for financial reporting purposes. The calculations use a discount rate of 1.25%, a maturity value rate of 2.5% and salary increases of 4.0% per annum and the 1994 Group Annuity Reserve Mortality Table. As of December 31, 2012, Messrs. Berlinghieri and Colella were not vested in any portion of the amounts set forth above.

#### Nonqualified Deferred Compensation

We have provided supplemental defined contribution retirement benefits to Dr. Smith. We contribute an annual amount equal to 15% of Dr. Smith's salary and bonus, and may elect to contribute additional amounts in our sole discretion. These amounts are placed into investment instruments in accordance with Dr. Smith's instruction. These benefits will vest 80%, 90% and 100% upon Dr. Smith reaching age 63, 64 and 65, respectively. When vested, the benefits provide for a lump sum payment, subject to a six month waiting period after retirement for the initial payment. Dr. Smith may also elect to defer up to 25% of his base salary and up to 100% of his bonus annually, until a time specified by Dr. Smith. These benefits are not subject to any deduction for social security or other offset amounts.

#### NONQUALIFIED DEFERRED COMPENSATION

| Name              | Executive Contributions in Last FY (\$) | Registrant Contributions in Last FY \$(1) | Aggregate Earnings in Last FY \$(1) | Aggregate Withdrawals/Distributions (\$) | Aggregate Balance at Last FYE \$(1) |
|-------------------|---|---|-------------------------------------|--|-------------------------------------|
| Leo Berlinghieri  | N/A                                     | N/A                                       | N/A                                 | N/A                                      | N/A                                 |
| Seth H. Bagshaw   | N/A                                     | N/A                                       | N/A                                 | N/A                                      | N/A                                 |
| Gerald G. Colella | N/A                                     | N/A                                       | N/A                                 | N/A                                      | N/A                                 |
| John T.C. Lee     | N/A                                     | N/A                                       | N/A                                 | N/A                                      | N/A                                 |
| John A. Smith     | \$ 0                                    | \$ 87,297                                 | \$ 57,392                           | \$ 0                                     | \$ 899,877                          |

- (1) Amounts reported in the contributions and earnings columns are fully reported as compensation in the Summary Compensation Table. The amount reported in the aggregate balance at last fiscal year end has been previously reported as compensation to Mr. Smith in the Summary Compensation Table for the years in which he was a Named Executive Officer.

### **Potential Payments Upon Termination of Employment or Change-in-Control**

This section (including the following tables) summarizes each Named Executive Officers estimated payments and other benefits that would be received by the Named Executive Officer or his estate if his employment had terminated on December 31, 2012, under the circumstances set forth below.

For purposes of the following description of such benefits, “cause” means conviction for the commission of a felony, willful failure to perform his responsibilities to the Company, or willful misconduct. “Good reason” means voluntary separation from service within 90 days following (i) a material diminution in positions, duties and responsibilities from those described in the executive’s employment agreement, (ii) a reduction in the executive’s base salary (other than as part of a general salary reduction program affecting senior executives), (iii) a material reduction in the aggregate value of the executive’s pension and welfare benefits from those in effect prior to the change-in-control (other than as proportionate to the reductions applicable to other senior executives pursuant to a cost-saving plan that includes all senior executives), (iv) a material breach of any provision of the employment agreement by the Company, or (v) the Company’s requiring the executive to be based at a location causing a one way commute in excess of 60 miles from the executive’s primary residence.

#### ***Mr. Berlinghieri***

Mr. Berlinghieri’s employment terms are month-to-month, with termination upon death, disability, or at our election if he fails to perform his duties or commits any act not in our best interest, or upon 30 days’ notice by either party. Mr. Berlinghieri is entitled to the following benefits under his employment agreement:

- If Mr. Berlinghieri’s employment is terminated by us (other than for failure or refusal to perform his obligations, commitment of acts not in our interest, commission of a felony or willful misconduct), he will receive salary for 12 months after the date of such termination. He will also receive Company paid medical, dental, life and vision insurance for 12 months.
- If Mr. Berlinghieri’s employment is terminated by us without cause or by Mr. Berlinghieri for good reason, within two years after a change-in-control, and certain other criteria are met, Mr. Berlinghieri will be entitled to:
  - salary and target bonus for 36 months paid in a lump sum and grossed-up for applicable state and federal taxes;
  - paid medical, dental, life and vision insurance for 36 months; and
  - full vesting of RSUs.
- In the event that any payment to Mr. Berlinghieri under his employment agreement would subject him to any excise taxes imposed under Code Section 4999, Mr. Berlinghieri shall receive a gross-up payment for such amounts.
- We provide supplemental retirement benefits to Mr. Berlinghieri, as described under the heading “Pension Benefits” above.
- We provide Mr. Berlinghieri and his spouse with retiree medical benefits for life, in the event Mr. Berlinghieri (i) retires by at least age 62, (ii) is terminated without cause or terminates his employment for good reason, in each case within three years of a change-in-control, or (iii) terminates employment due to death or disability. Mr. Berlinghieri (or his surviving spouse) would pay an annual contribution of \$1,500, and, in the event of retirement between age 62 and 65, would pay a decreasing percentage of the costs until he reaches age 65.

During the term of Mr. Berlinghieri's employment and for a period of one year thereafter (or two years, if employment was terminated by Mr. Berlinghieri other than for good reason), Mr. Berlinghieri may not:

- engage in any competitive business or activity;
- work for or become a partner with any of our employees, officers or agents; or
- have any financial interest in or be a director, officer, 1% shareholder, partner, employee or consultant to any of our competitors.

For a period of two years after termination of employment, Mr. Berlinghieri may not:

- solicit any customer to become a customer, distributor or supplier of any other person or entity or to cease doing business with us; or
- solicit or hire any of our employees or agents to terminate such person's employment or engagement with us or to work for a third party.

#### ***Other Named Executive Officers***

All of the other Named Executive Officers' employment terms are month-to-month, with termination upon death, disability, or at our election if the employee fails to perform his duties or commits any act not in our best interest, or upon 30 days' notice by either party. Messrs. Colella and Smith are entitled to the following benefits under their agreements in the event that they are terminated without cause:

- six months continuation of their base salary; and
- six months continuation of specified health benefits at our cost.

In the event that any payment to Mr. Colella under his employment agreement would subject him to any excise taxes imposed under Code Section 4999, he shall receive gross-up payments for such amounts.

Mr. Colella and his spouse shall also receive retiree medical benefits for life, in the event Mr. Colella (i) retires by at least age 62, (ii) is terminated without cause or terminates his employment for good reason, in each case within three years after a change-in-control, or (iii) terminates employment due to death or disability. Mr. Colella (or his surviving spouse) would pay an annual contribution of \$1,500, and, in the event of his retirement between age 62 and 65, would pay a decreasing percentage of the costs until he reaches age 65.

We provide supplemental retirement benefits to Mr. Colella, as described under the heading "Pension Benefits" above, and supplemental defined contribution retirement benefits to Mr. Smith as described under the heading "Nonqualified Deferred Compensation" above.

The employment agreements of Messrs. Bagshaw and Colella contain non-competition provisions. Mr. Bagshaw's employment agreement provides that he may not, during the term of his employment and for one year after termination of employment, engage in any competitive business or activity. Mr. Colella's employment agreement provides that he may not, during the term of his employment and for the period of one year after termination of employment:

- engage in any competitive business or activity;
- work for, employ, become a partner with, or cause to be employed, any of our employees, officers or agents;
- give, sell or lease any competitive services or goods to any of our customers; or
- have any material financial interest in or be a director, officer, partner, employee or consultant to or exceed specified shareholding limitations in, any of our competitors.

Each of Messrs. Colella and Smith are subject to non-solicitation restrictions. With respect to Dr. Lee, during the term of employment and for one year after the termination of employment, he may not solicit or hire any of our employees or agents to terminate such person's employment or engagement with us or to work for a third party. With respect to Messrs. Colella and Smith, during the term of employment and for a period of two years after termination of employment for Mr. Smith, or one year after termination for Mr. Colella, such executives may not:

- solicit any customer to become a customer, distributor or supplier of any other person or entity or to cease doing business with us; or
- solicit or hire any of our employees or agents to terminate such person's employment or engagement with us or to work for a third party.

Each Named Executive Officer's RSUs provide for 100% acceleration of vesting of all shares if the executive is terminated without cause or resigns with good reason within 24 months following a change-in-control, as defined in the agreement, and, also provide for 100% acceleration of vesting upon retirement, death or disability. Retirement, in this context, means a voluntary termination of employment by the executive after he is at least age 60 and has a combination of years of age plus years of service (full years of employment since the executive's original hire date with the Company or one of its subsidiaries) with us equal to 70 or more. RSUs granted to Named Executive Officers typically vest in three equal annual installments, and half of the target annual equity grant value is subject to performance criteria.

Messrs. Bagshaw and Lee do not have any provision for specific benefits upon termination other than provided for in their equity grants. The value of the acceleration of vesting of RSUs with respect to Messrs. Bagshaw and Lee, who are not included in the following tables, would have been \$808,005 for Mr. Bagshaw and \$548,591 for Mr. Lee, upon such executive's death, disability or termination after a change-in-control as described above, had it occurred on December 31, 2012.

#### Potential Payments Upon Termination or Change-in-Control — Leo Berlinghieri

| Termination Circumstance   | Cash Severance             |                            | Value of Accelerated Unvested Equity | Benefits Continuation(1) | State and Federal Income Tax Gross-up on Cash Severance | Acceleration of Pension Benefits(2) | Gross up of I.R.C. Golden Parachute excise tax resulting from Change-in-Control(3) | Total        |
|--|----------------------------|----------------------------|--------------------------------------|--------------------------|---|-------------------------------------|--|--------------|
|  | Base Salary                | Management Incentive Bonus |                                      |                          |   |                                     |  |              |
| Involuntary Without Cause Termination  | \$625,000<br>(1x salary)   | N/A                        | N/A                                  | \$23,358                 | N/A   | \$14,902,025                        | N/A  | \$15,550,383 |
| Retirement(4)  | N/A                        | N/A                        | \$0                                  | \$0                      | N/A   | N/A                                 | N/A  | \$ 0         |
| Death(4)   | \$625,000<br>(1x salary)   | N/A                        | \$3,334,360                          | \$591,807                | N/A   | \$7,451,013                         | N/A  | \$12,002,180 |
| Disability(4)  | N/A                        | N/A                        | \$3,334,360                          | \$944,694                | N/A   | \$14,902,025                        | N/A  | \$19,181,079 |
| Within 24 Months Following a Change-in-Control:  |                            |                            |                                      |                          |   |                                     |  |              |
| • Termination by the Company Without Cause or Executive Resignation for Good Reason(5),(6),(7) | \$1,875,000<br>(3x salary) | \$1,875,000<br>(3x bonus)  | \$3,334,360                          | \$944,694                | \$2,489,082   | \$14,902,025                        | \$ 2,879,851   | \$28,300,012 |
| Between 24 Months and 36 Months Following a Change-in-Control:                                 |                            |                            |                                      |                          |   |                                     |  |              |
| • Termination by the Company Without Cause(7)  | \$625,000<br>(1x salary)   | N/A                        | N/A                                  | \$944,694                | N/A   | \$14,902,025                        | N/A  | \$16,471,719 |
| • Executive Resignation for Good Reason(7)   | N/A                        | N/A                        | N/A                                  | \$944,694                | N/A   | \$14,902,025                        | N/A  | \$15,846,719 |

- (1) Reflects (a) our cost for continuation of life insurance, medical, dental and vision coverage for 12 months following involuntary without cause termination, or (b) where applicable, the estimated present value of retiree health benefits, in each case assuming the separation occurred on December 31, 2012.
- (2) This amount represents the present value of the accelerated amount of the accumulated benefit under the Supplemental Retirement Benefit. See also the description under "Pension Benefits" above.

- (3) For purposes of assessing whether Mr. Berlinghieri would be liable for a Section 4999 excise tax on parachute payments (and in turn entitled to a gross-up from us), the calculations assume that if Mr. Berlinghieri was terminated within 24 months following a change-in-control, the vesting on his RSUs would be accelerated (which the Board of Directors may determine at its discretion).
- (4) Upon retirement (as defined in the RSU agreements), death or disability, RSUs fully vest. Because he was not 60 as of December 31, 2012, Mr. Berlinghieri did not qualify for retirement at that time. The stated value assumes the death or disability occurred on December 31, 2012.
- (5) 100% of the unvested RSUs vest. Mr. Berlinghieri is eligible to receive three times his salary and target bonus then in effect.
- (6) We have agreed to reimburse Mr. Berlinghieri for any state and federal income taxes associated with the severance payment, as well as any excise taxes due under Section 4999 applicable to parachute payments.
- (7) To be eligible for retiree medical benefits, the termination only needs to occur within 36 months of the change-in-control.

#### Potential Payments Upon Termination or Change-in-Control — Gerald G. Colella

| Termination Circumstance:                                      | Cash Severance             | Value of Accelerated Unvested Equity | Benefits Continuation(1) | Acceleration of Pension Benefits(2) | Gross up of I.R.C. Golden Parachute excise tax resulting from Change-in-Control(3) | Total        |
|--|----------------------------|--------------------------------------|--------------------------|-------------------------------------|--|--------------|
|  | Base Salary                |                                      |                          |                                     |  |              |
| Involuntary Without Cause Termination                          | \$216,500<br>(0.5x salary) | N/A                                  | \$10,142                 | \$8,221,049                         | N/A  | \$ 8,447,691 |
| Retirement(4)  | N/A                        | \$0                                  | \$0                      | N/A                                 | N/A  | \$ 0         |
| Death(4)   | N/A                        | \$1,162,203                          | \$373,602                | \$4,110,525                         | N/A  | \$ 5,646,330 |
| Disability(4)  | N/A                        | \$1,162,203                          | \$788,847                | \$8,221,049                         | N/A  | \$10,172,099 |
| Within 24 Months Following a Change-in-Control:                |                            |                                      |                          |                                     |  |              |
| • Termination by the Company Without Cause(5),(6),(7)          | \$216,500<br>(0.5x salary) | \$1,162,203                          | \$788,847                | \$8,221,049                         | \$ 0   | \$10,388,599 |
| • Executive Resignation with Good Reason(5),(6),(7)            | N/A                        | \$1,162,203                          | \$788,847                | \$8,221,049                         | \$ 0   | \$10,172,099 |
| Between 24 Months and 36 Months Following a Change-in-Control: |                            |                                      |                          |                                     |  |              |
| • Termination by the Company Without Cause(7)                  | \$216,500<br>(0.5x salary) | N/A                                  | \$788,847                | \$8,221,049                         | N/A  | \$ 9,226,396 |
| • Executive Resignation for Good Reason(7)                     | N/A                        | N/A                                  | \$788,847                | \$8,221,049                         | N/A  | \$ 9,009,896 |

- (1) Reflects (a) our cost for continuation of life insurance, medical, dental and vision coverage for 6 months following involuntary without cause termination, or (b) where applicable, the estimated present value of retiree health benefits, in each case assuming the termination occurred on December 31, 2012.
- (2) This amount represents the present value of the accelerated amount of the accumulated benefit under the Supplemental Retirement Benefit. See also the description under "Pension Benefits" above.
- (3) For purposes of assessing whether Mr. Colella would be liable for a Section 4999 excise tax on parachute payments (and in turn entitled to a gross-up from us), the calculations assume that if Mr. Colella was terminated within 24 months following a change-in-control, the vesting on his RSUs would be accelerated (which the Board of Directors may determine at its discretion).

- (4) Upon retirement (as defined in the RSU agreements), death or disability, RSUs fully vest. Because he was not 60 as of December 31, 2012, Mr. Colella did not qualify for retirement at that time. The stated value assumes the death or disability occurred on December 31, 2012.
- (5) 100% of the unvested RSUs vest.
- (6) Upon a change-in-control, Mr. Colella may be subject to certain excise taxes under Section 4999 applicable to parachute payments. We have agreed to reimburse Mr. Colella for those excise taxes as well as any income and excise taxes payable by Mr. Colella as a result of any reimbursement for the Section 4999 excise taxes. Had Mr. Colella been terminated following a change-in-control on December 31, 2012, there would not have been an excise tax liability due.
- (7) To be eligible for retiree medical benefits, the termination only needs to occur within 36 months of the change-in-control.

**Potential Payments Upon Termination or Change-in-Control — John A. Smith**

| <u>Termination Circumstance:</u>              | <u>Cash Severance</u><br><u>Base Salary</u> | <u>Value of Accelerated Unvested Equity</u> | <u>Benefits Continuation(1)</u> | <u>Total(2)</u> |
|---|---|---|---------------------------------|-----------------|
| Involuntary Without Cause Termination         | \$ 152,500<br>(0.5x salary)                 | N/A   | \$ 7,789                        | \$160,289       |
| Retirement(3)                                 | N/A   | \$ 410,058                                  | N/A                             | \$410,058       |
| Death or Disability(3)                        | N/A   | \$ 410,058                                  | N/A                             | \$410,058       |
| Within 24 Months of a Change-in-Control:      |   |   |                                 |                 |
| • Termination by the Company Without Cause(4) | \$ 152,500<br>(0.5x salary)                 | \$ 410,058                                  | \$ 7,789                        | \$570,347       |
| • Executive Resignation with Good Reason      | N/A   | \$ 410,058                                  | N/A                             | \$410,058       |

- (1) Benefits continuation reflects our cost for continuation of life insurance, medical, dental and vision coverage for 6 months.
- (2) The total does not include the present value of the accumulated benefit of deferred compensation. See the “Nonqualified Deferred Compensation” table for this information.
- (3) Upon retirement (as defined in the RSU agreements), death or disability, RSUs fully vest. The stated value assumes the retirement, death or disability occurred on December 31, 2012.
- (4) 100% of the unvested RSUs vest. For purposes of determining the value of accelerated unvested options, the calculations assume that Mr. Smith was terminated on December 31, 2012 following the change-in-control and the vesting of his RSUs was accelerated by the Board of Directors (which the Board of Directors may determine at its discretion).

## DIRECTOR COMPENSATION

### Cash Compensation

The following table summarizes cash compensation payable by us to non-employee directors effective as of December 31, 2012.

|   | <u>Annual Retainer</u> | <u>Attendance Fee per Meeting</u> |
|---|------------------------|-----------------------------------|
| Chair   | \$75,000               | \$ 2,000                          |
| Board Members other than Chair                            | \$32,000               | \$ 2,000                          |
| Lead Director   | \$16,000               | N/A                               |
| Audit Committee Chair                                     | \$12,000               | \$ 1,500                          |
| Other Audit Committee Members                             | N/A                    | \$ 1,500                          |
| Compensation Committee Chair                              | \$10,000               | \$ 1,500                          |
| Other Compensation Committee Members                      | N/A                    | \$ 1,500                          |
| Nominating & Corporate Governance Committee Chair         | \$ 6,000               | \$ 1,500                          |
| Other Nominating & Corporate Governance Committee Members | N/A                    | \$ 1,500                          |

In February 2013, the Board of Directors approved several changes to their cash compensation program, including the elimination of all meeting fees. The new cash compensation program, effective as of January 1, 2013, is as follows:

|   | <u>Annual Retainer</u> |
|---|------------------------|
| Base Retainer for All Non-Employee Board Members          | \$52,000               |
| <i>Additional Retainers for Services:</i>                 |                        |
| Chair   | \$43,000               |
| Lead Director   | \$18,000               |
| Audit Committee Chair                                     | \$20,000               |
| Other Audit Committee Members                             | \$10,000               |
| Compensation Committee Chair                              | \$15,000               |
| Other Compensation Committee Members                      | \$ 7,500               |
| Nominating & Corporate Governance Committee Chair         | \$10,000               |
| Other Nominating & Corporate Governance Committee Members | \$ 5,000               |

### Equity Compensation

Non-employee directors participate in our 2004 Stock Incentive Plan, which is administered by the Compensation Committee. In 2012, non-employee directors received automatic grants of RSUs as follows:

| <u>Type of Award</u> | <u>Date of Award</u>                        | <u>Number of RSUs</u> | <u>Vesting Schedule</u>  |
|----------------------|---|-----------------------|--|
| Initial Award        | Date of initial election to Board           | 7,500                 | Vests in 12 equal quarterly installments over a three year period.   |
| Annual(1)            | Date of each Annual Meeting of Shareholders | 6,000                 | Fully vests on the day prior to the first annual meeting of shareholders following the date of grant (or if no such meeting is held within 13 months after the date of grant, on the 13 month anniversary of the date of grant). |

- (1) Non-employee directors are eligible to receive annual awards if the non-employee director has been in office for at least six months prior to the date of the respective annual meeting of shareholders.

Effective as of January 2013, non-employee directors shall receive annual grants of RSUs on the date of the Annual Meeting of Shareholders, having a grant date value of \$120,000, which RSUs shall vest in full on the day prior to the first annual meeting of shareholders following the date of grant (or if no such meeting is held within 13 months after the date of grant, on the 13 month anniversary of the date of grant).

*Mr. Bertucci*

Mr. Bertucci resigned from his employment as our Executive Chair effective December 31, 2006. At that time, he remained a Class III director and became non-executive Chair of the Board. Pursuant to the terms of his employment agreement, Mr. Bertucci receives retiree medical benefits for life for himself and his spouse, which had a net present value of \$393,220 as of December 31, 2012, and which requires that he make an annual contribution toward the benefit of \$1,500. Mr. Bertucci also receives a car allowance for life, which had a net present value of \$204,654 as of December 31, 2012. Mr. Bertucci receives no other retirement benefits.

The following table summarizes compensation paid to non-employee directors in 2012. Mr. Berlinghieri is excluded from the table because he is an executive officer, and his compensation is set forth in the Executive Compensation section above, under the heading "Summary Compensation Table."

**Director Compensation Table for 2012**

| Name                 | Fees<br>Earned or<br>Paid in<br>Cash<br>(\$) | Stock<br>Awards<br>\$(1) | All Other<br>Compensation<br>(\$) | Total<br>(\$) |
|----------------------|--|--------------------------|-----------------------------------|---------------|
| Cristina H. Amon     | \$44,500                                     | \$157,560                | \$ 0                              | \$202,060     |
| Robert R. Anderson   | \$63,500                                     | \$157,560                | \$ 0                              | \$221,060     |
| Gregory R. Beecher   | \$69,874                                     | \$157,560                | \$ 0                              | \$227,434     |
| John R. Bertucci     | \$83,000                                     | \$157,560                | \$ 35,370(2)                      | \$275,930     |
| Richard S. Chute     | \$49,000                                     | \$157,560                | \$ 0                              | \$206,560     |
| Peter R. Hanley      | \$47,500                                     | \$157,560                | \$ 0                              | \$205,060     |
| Hans-Jochen Kahl(3)  | \$14,752                                     | \$ 0                     | \$ 0                              | \$ 14,752     |
| Elizabeth A. Mora(4) | \$29,748                                     | \$196,950                | \$ 0                              | \$226,698     |
| Louis P. Valente(3)  | \$27,878                                     | \$ 0                     | \$ 0                              | \$ 27,878     |

- (1) Represents the grant date fair value for each RSU granted during the year, calculated in accordance with FASB ASC Topic 718 (formerly FAS 123R). The assumptions used in determining the grant date fair values of these awards are set forth in Note 19 to our consolidated financial statements, which are included in our Annual Report on Form 10-K filed with the SEC.
- (2) In connection with his retirement, pursuant to the terms of his previous employment agreement, Mr. Bertucci receives retiree medical benefits and a car allowance. The retiree medical benefits consist of benefits for life for himself and his spouse, towards which Mr. Bertucci makes an annual contribution of \$1,500. The Company paid \$15,506 for this benefit in 2012. The Company paid \$19,864 for Mr. Bertucci's car allowance in 2012. Mr. Bertucci receives no other retirement benefits.
- (3) Messrs. Kahl and Valente served as members of our Board of Directors until May 2012.
- (4) Ms. Mora joined as a Board member effective as of May 2012.

**Transactions with Related Persons**

Mr. Stewart, our former Vice President and General Manager of the Vacuum Products Group who retired from the Corporation in April 2012, is married to our Senior Director of Operations for the Vacuum Products

Group. In 2012, Mr. Stewart's spouse received cash compensation of \$203,253, an RSU grant for 1,683 shares of the Company's Common Stock (with an aggregate grant date value of approximately \$50,000), and a management cash bonus (with respect to the prior year's services) in the amount of \$53,822.

Our written Code of Business Conduct and Ethics sets forth the general principle that our directors, officers and employees should refrain from engaging in any activity having a personal interest that presents a conflict of interest. The Code prohibits certain specified activities, and also prohibits directors, officers and employees from engaging in any other activity that may reasonably be expected to give rise to a conflict of interest or to adversely affect our interests. The Code provides that all employees are responsible to disclose any material transaction or relation that reasonably could be expected to give rise to a material conflict of interest to the Chief Financial Officer, and officers and directors must report such transactions to the Board of Directors, who shall be responsible for determining whether such transaction or relationship constitutes a material conflict of interest. In addition, pursuant to its written charter, the Audit Committee must review all "related party transactions" (defined as transactions required to be disclosed pursuant to Item 404 of Regulation S-K) on an ongoing basis. Accordingly, any relationship that arises at any time that constitutes, or could in the future constitute, a "related party transaction" will be reported to the Audit Committee for its review. Additionally, directors and officers are required to submit annual certifications as to whether they are involved in any "related party transaction" and the Audit Committee reviews any such activities annually.

## REPORT OF THE AUDIT COMMITTEE OF THE BOARD OF DIRECTORS

The Audit Committee of our Board of Directors has reviewed our audited financial statements for the year ended December 31, 2012 and discussed them with our management.

The Audit Committee has also received from and discussed with PwC, our independent registered public accounting firm, various communications that our registered public accounting firm is required to provide to the Audit Committee, including the matters required to be discussed by the Statement on Auditing Standards No. 61, as amended (AICPA, *Professional Standards*, Vol. 1, AU section 380), as adopted by the Public Company Accounting Oversight Board in Rule 3200T.

The Audit Committee has received the written disclosures and the letter from our registered public accounting firm required by Independence Standards Board Standard No. 1 (Independence Standards Board Standard No. 1, *Independence Discussions with Audit Committees*), as adopted by the Public Company Accounting Oversight Board in Rule 3600T, and has discussed with our registered public accounting firm their independence.

Based on the review and discussions referred to above, the Audit Committee recommended to our Board of Directors that the audited financial statements be included in our Annual Report on Form 10-K for the year ended December 31, 2012.

By the Audit Committee of the Board of Directors of MKS Instruments, Inc.

Gregory R. Beecher, Chair

Robert R. Anderson

Elizabeth A. Mora

**SECTION 16(a) BENEFICIAL  
OWNERSHIP REPORTING COMPLIANCE**

Section 16(a) of the Securities Exchange Act of 1934, as amended, requires executive officers, directors and shareholders who beneficially own more than ten percent (10%) of our stock to file initial reports of ownership on Form 3 and reports of changes in ownership on Form 4 with the SEC and any national securities exchange on which our securities are registered. Executive officers, directors and greater than ten percent (10%) beneficial owners are required by the SEC's regulations to furnish us with copies of all Section 16(a) forms they file.

Based solely on a review of the copies of such forms, and amendments thereto, furnished to us and written representations from the executive officers and directors, pursuant to Item 405 of Regulation S-K, we believe that all Section 16(a) filing requirements applicable to our executive officers, directors and greater than ten percent (10%) shareholders were complied with except that, Mr. Stewart filed a late report with respect to an April 2012 grant awarded indirectly to him.

**PROPOSAL TWO  
ADVISORY VOTE ON EXECUTIVE COMPENSATION**

The Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010, or the Dodd-Frank Act, which added Section 14A to the Exchange Act, enables our shareholders to vote to approve, on a non-binding, advisory basis, the compensation of our Named Executive Officers as disclosed in this proxy statement under the heading "Executive Compensation" including "Compensation Discussion and Analysis," the tabular disclosure regarding such compensation, and the accompanying narrative disclosure. This vote is not intended to address any specific item of compensation, but rather the overall compensation of our Named Executive Officers and the philosophy, policies and practices of executive compensation described in this proxy statement. The advisory vote is not a vote on the Company's compensation practices for non-executive employees or the Company's Board of Directors. The Dodd-Frank Act requires the Company to hold the advisory vote on executive compensation at least once every three years, but the Company has elected to submit the advisory vote to shareholders annually.

As described in detail under the heading "Executive Compensation — Compensation Discussion and Analysis," our executive compensation programs are designed to attract, motivate, and retain our Named Executive Officers, who are critical to our success. Under these programs, our Named Executive Officers are rewarded for the achievement of specific short-term and long-term goals. Please see the "Compensation Discussion and Analysis" above for additional details about our executive compensation philosophy and programs, including information about the fiscal year 2012 compensation of our Named Executive Officers.

The Compensation Committee continually reviews the compensation programs for our Named Executive Officers to ensure they achieve the desired goals of aligning our executive compensation structure with our shareholders' interests and current market practices.

Our Board of Directors is asking shareholders to approve a non-binding advisory vote on the following resolution:

RESOLVED, that the compensation paid to the Company's Named Executive Officers, as disclosed pursuant to the compensation disclosure rules of the Securities and Exchange Commission, including the Compensation Discussion and Analysis, the compensation tables and any related material disclosed in this proxy statement, is hereby approved.

This vote on the compensation of our Named Executive Officers is advisory, and therefore not binding on the Company, the Compensation Committee or our Board of Directors. Our Board of Directors and our Compensation Committee value the opinions of our shareholders and to the extent there is any significant vote against the Named Executive Officer compensation as disclosed in this proxy statement, we will consider our shareholders' concerns and the Compensation Committee will evaluate whether any actions are necessary to address those concerns.

**THE BOARD OF DIRECTORS BELIEVES THAT THE PROPOSAL TO APPROVE, ON A NON-BINDING, ADVISORY BASIS, THE EXECUTIVE COMPENSATION CONTAINED IN THIS PROXY STATEMENT IS IN THE BEST INTERESTS OF MKS AND OUR SHAREHOLDERS AND THEREFORE RECOMMENDS A VOTE “FOR” THIS PROPOSAL.**

### **PROPOSAL THREE**

#### **RATIFICATION OF APPOINTMENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM**

On January 29, 2013, the Audit Committee appointed PwC as the Company’s independent registered public accounting firm for the fiscal year ending December 31, 2013. PwC was our independent registered public accounting firm for the fiscal year ended December 31, 2012.

Representatives of PwC are expected to be present at the Annual Meeting and will have the opportunity to make a statement if they so desire and will be available to respond to appropriate questions from shareholders. In the event that the ratification of the appointment of PwC as our independent registered public accounting firm is not obtained at the Annual Meeting, the Board of Directors will reconsider its appointment.

**THE BOARD OF DIRECTORS BELIEVES THAT THE PROPOSAL TO RATIFY THE APPOINTMENT OF PWC AS OUR INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM FOR THE FISCAL YEAR ENDING DECEMBER 31, 2013 IS IN THE BEST INTERESTS OF MKS AND OUR SHAREHOLDERS AND THEREFORE RECOMMENDS A VOTE “FOR” THIS PROPOSAL.**

### **OTHER MATTERS**

The Board of Directors does not know of any other matters which may come before the meeting. However, if any other matters are properly presented to the meeting, it is the intention of the persons named in the accompanying proxy to vote, or otherwise act, in accordance with their judgment on such matters.

All costs of solicitation of proxies will be borne by us. In addition to solicitations by mail, our directors, officers and regular employees, without additional remuneration, may solicit proxies by telephone and personal interviews and we reserve the right to retain outside agencies for the purpose of soliciting proxies. Brokers, custodians and fiduciaries will be requested to forward proxy soliciting material to the owners of stock held in their names, and we will reimburse them for their reasonable out-of-pocket expenses incurred in connection with the distribution of proxy materials.

#### **INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM**

For the years ended December 31, 2012 and 2011, aggregate fees for professional services rendered by our independent registered public accounting firm, PwC, in the following categories were as follows:

|                    | <u>2012</u>         | <u>2011</u>         |
|--------------------|---------------------|---------------------|
| Audit Fees         | \$ 1,977,004        | \$ 1,779,597        |
| Audit-Related Fees | 90,000              | 20,960              |
| Tax Fees           | 356,000             | 437,500             |
| All Other Fees     | 1,800               | 1,500               |
| Total              | <u>\$ 2,424,804</u> | <u>\$ 2,239,557</u> |

#### *Audit Fees*

Audit Fees for the years ended December 31, 2012 and 2011 were for professional services provided for the audit of our consolidated financial statements and of our internal control over financial reporting, statutory and subsidiary audits, consents and assistance with review of documents filed with the SEC.

#### *Audit-Related Fees*

Audit related fees were for assistance with SEC correspondence and foreign statutory audit compliance advice.

#### *Tax Fees*

Tax Fees for the year ended December 31, 2012 were for services related to tax compliance, including the preparation of tax returns; and tax planning and tax advice, including assistance with foreign operations and foreign tax audits. Tax fees for the year ended December 31, 2011 were for services related to tax compliance, including preparation of tax returns; and tax planning advice, including assistance with foreign operations.

#### *All Other Fees*

All Other Fees for the year ended December 31, 2012 and 2011 were for accounting research software.

In 2012 and 2011, all Audit Fees, Audit-Related Fees, Tax Fees and All Other Fees were pre-approved pursuant to the Audit Committee pre-approval requirements, described below.

#### ***Pre-Approval Policy and Procedures***

The Audit Committee's charter sets forth the Committee's obligations relating to the approval of all audit and non-audit services that are to be performed by our independent registered public accounting firm. The charter provides that we will not engage our independent registered public accounting firm to provide audit or non-audit services unless the service is pre-approved by the Audit Committee. In addition, we will not engage any other accounting firm to provide audit services unless such services are pre-approved by the Audit Committee. In 2012, the Audit Committee approved that with respect to services performed or to be performed by PwC in connection with the Company's fiscal year 2012, the annual fees for non-audit services in such year shall not exceed one half of an aggregate fees payable to PwC for such year, without the prior express approval of the Committee.

In connection with the foregoing, the Audit Committee may approve specific services in advance. In addition, from time to time, the Audit Committee may pre-approve specified types of services that are expected to be provided to us by our independent registered public accounting firm during the next 12 months. Any such pre-approval of types of services is detailed as to the particular service or type of service to be provided and is also generally subject to a maximum dollar amount.

The Audit Committee has also delegated to the Chair of the Audit Committee the authority to approve any audit or non-audit services to be provided to us by our independent registered public accounting firm. Any approval of services by the Chair of the Audit Committee pursuant to this delegated authority is reported on at the next meeting of the Audit Committee.

The Audit Committee has considered and determined that the provision of the non-audit services noted in the foregoing table is compatible with maintaining PwC's independence.

#### **DEADLINE FOR SUBMISSION OF SHAREHOLDER PROPOSALS FOR THE 2014 ANNUAL MEETING**

Proposals of shareholders intended to be presented at the 2014 Annual Meeting of Shareholders must be received by us at our principal office in Andover, Massachusetts not later than November 14, 2013, for inclusion in the proxy statement for that meeting.

In addition, our Amended and Restated By-Laws (which are on file with the SEC) require that we be given advance notice of matters that shareholders wish to present for action at an Annual Meeting of Shareholders (other than matters included in our proxy statement in accordance with Rule 14a-8 of the Securities Exchange Act of 1934, as amended). The required written notice must be delivered to our Secretary at our principal offices at least 60 days prior to the Annual Meeting, but no more than 90 days prior to such meeting or it will be considered untimely. However, if less than 40 days' notice of the Annual Meeting is provided to the shareholders, the

written notice of the shareholder must be received by our Secretary no later than 10 days after the notice of the Annual Meeting was mailed or publicly disclosed. The advance notice provisions of our Amended and Restated By-Laws contain the requirements of the written notice of shareholders and supersede the notice requirement contained in Rule 14a-4(c)(1) under the Securities Exchange Act of 1934, as amended.

**IMPORTANT NOTICE REGARDING DELIVERY OF SECURITY HOLDER DOCUMENTS**

Some banks, brokers and other nominee record holders are currently “householding” proxy statements and annual reports. This means that only one copy of our proxy statement or annual report may have been sent to multiple shareholders 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 phone number: **MKS Instruments, Inc., 2 Tech Drive, Suite 201, Andover, Massachusetts 01810, Attn: Investor Relations or (800) 227-8766 ext. 5578**. You may also access our proxy statement and related materials at <http://investor.mksinst.com/annualproxy.cfm>. If you want to receive separate copies of the annual report and proxy statement in the future, or if you are receiving multiple copies and would like to receive only one copy for your household, you should contact your bank, broker, or other nominee record holder, or you may contact us at the above address and phone number.

By Order of the Board of Directors,

RICHARD S. CHUTE  
Secretary

March 14, 2013

**THE BOARD OF DIRECTORS ENCOURAGES SHAREHOLDERS TO ATTEND THE ANNUAL MEETING. WHETHER OR NOT YOU PLAN TO ATTEND, YOU ARE URGED TO COMPLETE, DATE, SIGN AND RETURN THE ENCLOSED PROXY IN THE ACCOMPANYING ENVELOPE. A PROMPT RESPONSE WILL GREATLY FACILITATE ARRANGEMENTS FOR THE MEETING AND YOUR COOPERATION WILL BE APPRECIATED. SHAREHOLDERS WHO ATTEND THIS MEETING MAY VOTE THEIR STOCK PERSONALLY EVEN THOUGH THEY HAVE SENT IN THEIR PROXIES.**

**Form of Proxy Card**  
**ANNUAL MEETING OF SHAREHOLDERS OF**  
**MKS INSTRUMENTS, INC.**  
**MAY 6, 2013**

**Please detach and mail in the envelope provided.**

**Important Notice Regarding the Availability of Proxy Materials for the Annual Meeting:** The Annual Report, Notice & Proxy Statement is/are available at <http://www.proxyvote.com>.

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**MKS INSTRUMENTS, INC.**  
**Annual Meeting of Shareholders**  
**May 6, 2013 10:00 AM**

**This proxy is solicited by the Board of Directors**

This proxy, when properly executed, will be voted as directed on the reverse side, or, if no contrary direction is indicated, will be voted FOR the election of three (3) nominees listed on the reverse side as Class II Directors of the Company, and FOR proposals 2 and 3, and as said proxies deem advisable on such matters as may properly come before the meeting.

PLEASE DATE, SIGN AND MAIL YOUR PROXY CARD IN THE ENVELOPE PROVIDED AS SOON AS POSSIBLE.

The undersigned shareholder of MKS Instruments, Inc., a Massachusetts corporation (the "Company"), hereby acknowledges receipt of the Notice of Annual Meeting of Shareholders and Proxy Statement, each dated March 14, 2013, and hereby appoints Leo Berlinghieri, Richard S. Chute and Kathleen F. Burke, and each of them acting singly, proxies and attorneys-in-fact, with full power to each of substitution, on behalf and in the name of the undersigned, to represent the undersigned at the 2013 Annual Meeting of Shareholders of the Company to be held on May 6, 2013, at 10:00 a.m. at the Wyndham Boston Andover Hotel, 123 Old River Road, Andover, MA 01810, and at any adjournment(s) thereof, and to vote all shares of Common Stock which the undersigned would be entitled to vote if then and there personally present, on the matters set forth on the reverse side, and, in their discretion, upon any other matters which may properly come before the meeting.

**Continued and to be signed on reverse side**



**VOTE BY INTERNET – www.proxyvote.com**

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

**Electronic Delivery of Future PROXY MATERIALS**

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

**VOTE BY PHONE – 1-800-690-6903**

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

**VOTE BY MAIL**

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

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

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

THIS PROXY CARD IS VALID ONLY WHEN SIGNED AND DATED.

The Board of Directors recommends you vote FOR the following:

1. Election of Directors

Nominees:

01 Cristina H. Amon                      02 Richard S. Chute                      03 Peter R. Hanley

- FOR ALL
- WITHHOLD ALL
- FOR ALL EXCEPT

To withhold authority to vote for any individual nominee(s), mark "For All Except" and write the number(s) of the nominee(s) on the line below.

The Board of Directors recommends you vote FOR proposals 2 and 3:

2. To approve a non-binding advisory vote on executive compensation.

For    Against    Abstain  
       

3. To ratify the selection of PricewaterhouseCoopers LLP as the Company's independent registered public accounting firm for the year ending December 31, 2013.

For    Against    Abstain  
       

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

\_\_\_\_\_  
Signature [PLEASE SIGN WITHIN BOX]

\_\_\_\_\_  
Date

\_\_\_\_\_  
Signature (Joint Owners)

\_\_\_\_\_  
Date