

NANOMETRICS INC
Form DEF 14A
April 07, 2014

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

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

NANOMETRICS INCORPORATED

(Name of Registrant as Specified In Its Charter)

(Name of Person(s) Filing Proxy Statement if Other Than the Registrant)

Payment of Filing Fee (Check the appropriate box)

No fee required.

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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):

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-1-

1. Amount Previously Paid:

2. Form, Schedule or Registration Statement No.:

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4. Date Filed:

-2-

NANOMETRICS INCORPORATED
NOTICE OF ANNUAL MEETING OF STOCKHOLDERS
TO THE STOCKHOLDERS OF NANOMETRICS INCORPORATED:

NOTICE IS HEREBY GIVEN that the annual meeting of stockholders of Nanometrics Incorporated, a Delaware corporation, will be held on Tuesday, May 20, 2014, at 8:00 a.m., local time, at our Corporate Headquarters located at 1550 Buckeye Drive, Milpitas, California 95035. At the annual meeting you will be asked to consider and vote upon the following:

1. A proposal to elect the Board's five nominees for director of Nanometrics, each to serve for a term of one year or until his successor has been duly elected and qualified.
2. A proposal to approve, as an advisory (non-binding) vote, the compensation paid to our executive officers, as disclosed in this Proxy Statement.
3. A proposal to ratify the appointment of PricewaterhouseCoopers LLP as Nanometrics' independent registered public accounting firm for the fiscal year ending December 27, 2014.
4. Such other business as may properly come before the annual meeting or any postponements or adjournments thereof.

These items are more fully described in the Proxy Statement accompanying this notice of annual meeting of stockholders.

Only stockholders of record at the close of business on March 27, 2014, are entitled to notice of and to vote at the annual meeting and any postponements or adjournments thereof. The Notice of Internet Availability of Proxy Materials is first being mailed to the stockholders of record on or about April 7, 2014.

All stockholders are cordially invited to attend the annual meeting in person. Whether or not you expect to attend the annual meeting, you are urged to mark, sign, date and return the proxy card that may be mailed to you or vote over the telephone or the Internet as instructed in the Notice of Internet Availability of Proxy Materials as promptly as possible to ensure your representation at the meeting. Any stockholder of record attending the annual meeting may vote in person even if that stockholder previously voted by proxy for the annual meeting.

BY ORDER OF THE BOARD OF DIRECTORS,

/s/ Bruce C. Rhine

Bruce C. Rhine

Chairman of the Board of Directors

Milpitas, California

April 7, 2014

NANOMETRICS INCORPORATED
PROXY STATEMENT
INFORMATION CONCERNING SOLICITATION AND VOTING

General

Pursuant to rules adopted by the Securities and Exchange Commission, we have elected to provide access to our proxy materials over the Internet. Accordingly, we have sent you a Notice of Internet Availability of Proxy Materials (the "Notice") because the Board of Directors is soliciting your proxy to vote at our 2014 annual meeting of stockholders. All stockholders will have the ability to access the proxy materials on the website referred to in the Notice or request to receive a printed set of the proxy materials. Instructions on how to access the proxy materials over the Internet or to request a printed copy may be found in the Notice.

We intend to mail the Notice on or about April 7, 2014, to stockholders of record entitled to vote at the annual meeting.

Date, Time and Place

The annual meeting will be held on Tuesday, May 20, 2014, at 8:00 a.m., local time, at our Corporate Headquarters located at 1550 Buckeye Drive, Milpitas, California 95035. Directions to the annual meeting may be found on our website www.nanometrics.com by clicking on "Contact" then "Map & Local Driving Directions."

Purpose; Other Matters

The annual meeting is being held to consider and vote upon the following:

1. A proposal to elect the Board's five nominees for director of Nanometrics, each to serve for a term of one year or until his successor has been duly elected and qualified.
2. A proposal to approve, as an advisory (non-binding) vote, the compensation paid to our executive officers, as disclosed in this Proxy Statement.
3. A proposal to ratify the appointment of PricewaterhouseCoopers LLP as Nanometrics' independent registered public accounting firm for the fiscal year ending December 27, 2014.

Stockholders will also be asked to consider and vote upon any other business that may properly come before the annual meeting or any adjournments or postponements of the annual meeting. We do not expect that any additional matters will be brought before the annual meeting. If any other matters are properly brought before the meeting, it is the intention of the persons named in the proxy to vote on those matters in accordance with their best judgment.

Recommendation of the Board of Directors

The Board of Directors unanimously recommends that you vote:

- "FOR" the election of the Board's nominees for director named in this Proxy Statement.
- "FOR" the approval of the compensation paid to Nanometrics' executive officers as disclosed in this Proxy Statement.
- "FOR" the ratification of the appointment of PricewaterhouseCoopers LLP as Nanometrics' independent registered public accounting firm for the fiscal year ending December 27, 2014.

Record Date; Outstanding Shares; Voting Rights

Only holders of record of common stock at the close of business on the record date for the annual meeting, March 27, 2014, are entitled to notice of and to vote at the annual meeting. As of the record date, there were 23,874,166 shares of common stock outstanding and entitled to vote at the annual meeting, held by approximately 196 holders of record. Each record holder of common stock on the record date is entitled to one vote for each share of common stock held as of the record date with respect to all proposals.

A list of stockholders will be available for review at the annual meeting and our executive offices during regular business hours for a period of ten days before the annual meeting.

Admission to the Annual Meeting

Only stockholders, their designated proxies and guests of Nanometrics may attend the annual meeting. If you plan to attend the annual meeting and wish to vote in person, you will be given a ballot at the annual meeting. Please note, however, that if your shares are held in “street name,” which means your shares are held of record by a broker, bank or other nominee, and you wish to vote at the annual meeting, you must bring to the annual meeting a “legal proxy” from the record holder of your shares authorizing you to attend and vote at the annual meeting.

Quorum and Vote Required

The presence, either in person or by proxy, of the holders of a majority of outstanding shares of our common stock entitled to vote at the annual meeting is required to constitute a quorum necessary to hold a valid annual meeting of stockholders.

If your broker holds your shares in its name, the broker is permitted to vote your shares on “discretionary” matters, even if it does not receive voting instructions from you. Proposal 3 is the only “discretionary” matter being considered by our stockholders. Therefore, we urge you to give voting instructions to your broker on all voting items. Shares that are not permitted to be voted by your broker on a proposal absent your voting instructions are called “broker non-votes” with respect to that proposal. Broker non-votes are counted toward a quorum, but are not considered votes for or against such a proposal and therefore will have no direct impact on whether that proposal receives stockholder approval.

In addition, the vote required to approve each proposal is as follows:

Proposal 1

In the election of our directors, the nominees receiving the highest number of “FOR” votes will be elected. Votes marked “WITHHOLD” will have no effect on the election of directors. However, the Board of Directors has adopted a Majority Vote Policy, pursuant to which any director-nominee that is elected but fails to receive more “FOR” votes than “WITHHELD” votes must submit his resignation for consideration by the Board. The Board will then decide whether to accept the director’s resignation. Details of the Majority Vote Policy are set out below under “Corporate Governance – Voting for Directors – Majority Vote Policy.”

Proposal 2

The affirmative vote (“FOR”) of holders of a majority of the shares present in person or represented by proxy at the annual meeting and entitled to vote on the matter at the annual meeting is required for the approval of the advisory resolution on Nanometrics’ executive compensation. If you “ABSTAIN,” it will have the same effect as a vote “AGAINST.” The results of this vote will not be binding on the Board of Directors.

Proposal 3

The affirmative vote (“FOR”) of holders of a majority of the shares present in person or represented by proxy at the meeting and entitled to vote on the matter at the annual meeting is required to ratify the appointment of PricewaterhouseCoopers LLP as Nanometrics’ independent registered public accounting firm for the fiscal year ending December 27, 2014. If you “ABSTAIN,” it will have the same effect as a vote “AGAINST.”

Voting

General

Stockholders of record as of the record date may vote their shares by attending the annual meeting and voting their shares in person or by proxy by using a proxy card that they may request or that we may elect to deliver at a later time, by telephone or by Internet as instructed below. Even if you plan to attend the annual meeting, we recommend that you vote by proxy prior to the annual meeting. You can always change your vote prior to or at the annual meeting as described below.

- To vote in person, come to the annual meeting and we will give you a ballot when you arrive.
- To vote by mail, simply complete, sign and date the proxy card that you request or that may be delivered and return it promptly in the envelope provided. If you return your signed proxy card to us before the annual meeting, we will vote your shares as you direct.
- To vote over the telephone, dial toll-free 1-800-690-6903 using a touch-tone phone and follow the recorded instructions. You will be asked to provide the Control Number from the Notice. Your vote must be received by 11:59 p.m. ET, May 19, 2014, to be counted.
- To vote through the internet, go to www.proxyvote.com to complete an electronic proxy card. You will be asked to provide the Control Number from the Notice. Your vote must be received by 11:59 p.m. ET, May 19, 2014, to be counted.

Voting by Proxy

All properly executed proxies that are received prior to the annual meeting and not revoked will be voted at the annual meeting according to the instructions indicated on the proxies. If your proxy does not specify how you wish us to vote your shares, your shares will be voted:

- “FOR” the election of the Board’s nominees for director named in this Proxy Statement;
- “FOR” the approval of the compensation paid to Nanometrics’ executive officers, as disclosed in this Proxy Statement; and
- “FOR” the ratification of the appointment of PricewaterhouseCoopers LLP as Nanometrics’ independent registered public accounting firm for the fiscal year ending December 27, 2014.

You may receive more than one Notice depending on how you hold your shares of common stock. For example, if you hold shares through someone else, such as a broker, you may also receive a Notice from that person. Please follow the instructions on each of the Notices to ensure that all of your shares are voted.

Changing Your Vote

If you are the record holder of your shares of common stock, you can revoke or change your vote at any time before your proxy is voted at the annual meeting by:

- delivering to our corporate secretary a signed notice of revocation;
- granting the proxy holders a new, later dated proxy, which if provided by mail must be signed and delivered to our corporate secretary in advance of the vote at the annual meeting, or if provided by telephone or Internet must be submitted by following the instructions above before the deadline indicated above; or
- attending the annual meeting and voting in person (although simply attending the annual meeting will not, by itself, revoke your proxy).

If you have provided voting instructions to your broker, bank or other nominee for the annual meeting, you must follow the instructions provided by your broker, bank or other nominee to change your voting instructions for the annual meeting.

Proxy Solicitation

Nanometrics is making this solicitation and will pay the entire cost of preparing, assembling, printing, mailing and distributing these proxy materials and soliciting votes. In addition to mailing these proxy materials, proxies or votes may be solicited in person, by telephone or by electronic communication by our directors, officers and employees, who will not receive any additional compensation for such solicitation activities. Upon request, we will reimburse reasonable out of pocket

expenses to brokerage houses and other custodians, nominees and fiduciaries for forwarding proxy and solicitation materials to stockholders.

Assistance

If you need assistance in completing your proxy card or have questions regarding the annual meeting, please contact Investor Relations at (408) 545 6000 or write to Nanometrics Incorporated, at our executive offices located at 1550 Buckeye Drive, Milpitas, California 95035, Attn: Investor Relations.

“Householding” of Proxy Materials

The Securities and Exchange Commission has adopted rules that permit companies and intermediaries such as brokers to satisfy delivery requirements for Notices of Internet Availability of Proxy Materials or other annual meeting materials with respect to two or more stockholders sharing the same address by delivering a single Notice of Internet Availability of Proxy Materials or set of other annual meeting materials addressed to those stockholders. This process, which is commonly referred to as “householding,” potentially provides extra convenience for stockholders and cost savings for companies. Nanometrics and some brokers household proxy materials, delivering a single Notice of Internet Availability of Proxy Materials or set of other annual meeting materials to multiple stockholders sharing an address unless contrary instructions have been received from the affected stockholders. Upon written or oral request to our Investor Relations department, by mail at 1550 Buckeye Drive, Milpitas, California, 95035 or by telephone at (408) 545 6000, we will promptly deliver a copy of the Notice of Internet Availability of Proxy Materials or other annual meeting materials to a stockholder if that stockholder shares an address with another stockholder to which a single copy of such notice or other annual meeting materials was delivered. A stockholder may notify us as described above if the stockholder wishes to receive a separate copy of such notice or other annual meeting materials in the future or, alternatively, if the stockholder wishes to receive a single copy of the notice or other annual meeting materials instead of multiple copies.

Stockholder Proposals

Stockholders are entitled to present proposals for action at the 2015 annual meeting of stockholders. For any proposal to be considered for inclusion in our Proxy Statement and form of proxy for submission to the stockholders at the 2015 annual meeting of stockholders, the proposal must comply with the requirements of Rule 14a-8 under the Exchange Act and be submitted in writing by notice delivered or mailed by first class United States mail, postage prepaid, to Nanometrics Incorporated, 1550 Buckeye Drive, Milpitas, California 95035, Attention: Office of the Secretary, which must be received by us no later than December 8, 2014. If the date of our 2015 annual meeting is changed by more than 30 days from the one year anniversary of the date of the 2014 annual meeting, the proposal must be received a reasonable time before we begin to print and mail our proxy materials. The submission of a stockholder proposal does not guarantee that it will be included in our proxy statement.

In addition, Nanometrics’ Bylaws include advance notice provisions that require stockholders desiring to bring other business before the 2015 annual stockholders meeting, but not for inclusion in our Proxy Statement for that meeting, to do so in accordance with the terms of the Bylaws’ advance notice provisions. Nanometrics’ advance notice provisions require, among other things, that stockholders provide timely notice to the secretary of Nanometrics regarding such business, and provide certain additional information to Nanometrics as set forth in the Bylaws. To be timely, a stockholders’ notice must be delivered to or mailed and received at Nanometrics Incorporated, 1550 Buckeye Drive, Milpitas, California 95035, Attention: Office of the Secretary, and must be received by us no later than December 8, 2014. If we set the date of our 2015 annual meeting to a date more than 30 days from the one year anniversary of the date of our 2014 annual meeting, then the deadline for receipt of stockholder proposals will be no later than the close of business on the later of 120 calendar days in advance of the 2015 annual meeting or ten days following the date on which we first publicly announce the date of the 2015 annual meeting. If a stockholder does not provide us with notice of a stockholder proposal in accordance with the deadlines described above, the stockholder will not be permitted to present the proposal to the stockholders for a vote at the meeting.

Meeting Results

Preliminary voting results will be announced at the annual meeting. In addition, final voting results will be published in a current report on Form 8-K that we expect to file within four business days after the annual meeting. If final voting results are not available to us in time to file a Form 8-K within four business days after the meeting, we intend to file a Form 8 K to publish preliminary results and, within four business days after the final results are known to us,

file an additional Form 8-K to publish the final results.

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PROPOSAL 1

ELECTION OF DIRECTORS

At the 2014 annual meeting of stockholders, unless otherwise instructed, the proxy holders will vote the proxies received by them for the nominees named below, each of whom has been nominated by the Board of Directors and is presently a director of Nanometrics.

The Board of Directors currently has seven members. Effective as of the start of the 2014 annual meeting of stockholders the authorized number of directors shall be reduced to five. Mr. Bain and Dr. Oldham will not be standing for reelection. All other current directors are standing for election at the 2014 annual meeting.

The nominees were recommended by the Nominating and Governance Committee of the Board of Directors. All of the nominees named below were previously elected as directors by our stockholders.

If the nominees are unable or decline to serve as a director at the time of the annual meeting, the proxies will be voted for any nominee who shall be designated by the present Board to fill the vacancy. We do not have any reason to believe that any of the nominees will be unable or will decline to serve as a director. Directors are elected by a plurality of the votes of the holders of shares present in person or by proxy and entitled to vote on the election of directors. The five nominees receiving the highest number of affirmative votes will be elected. Pursuant to our Majority Vote Policy, if a nominee for director receives a greater number of "Withhold" votes than "For" votes, that director shall promptly tender to the Nominating and Governance Committee his offer of resignation. Within 90 days following certification of the stockholder vote, the Committee shall recommend to the Board the action to be taken with respect to such offer of resignation, and the Board shall consider and act upon the Committee's recommendation. Unless marked otherwise, the proxy holders will vote proxies returned to us for the nominees named below.

Director Nominees

Set forth below is information regarding each of our directors, including their ages, as of April 5, 2014, the periods during which they have served as a director, and certain information as to principal occupations and directorships held by them in corporations whose shares are publicly registered.

J. Thomas Bentley, 64, has served as a director since April 2004. Mr. Bentley served as a Managing Director at SVB Alliant (formerly Alliant Partners), a mergers and acquisitions firm, from 1990, when he co-founded the firm, until October 2005. Mr. Bentley currently serves on the board of directors of Rambus, Inc., a chip interface technology company. Mr. Bentley holds a B.A. degree in Economics from Vanderbilt University and a Masters of Science in Management from the Massachusetts Institute of Technology. Mr. Bentley's extensive knowledge of the capital markets, strategic planning and mergers and acquisitions from his experience at SVB Alliant provides expertise to the Board in matters regarding Nanometrics' capital requirements and strategic direction.

Edward J. Brown, Jr., 56, has served as a director since February 2013. Mr. Brown is currently the chief executive officer of the Cymer Light Source Division of ASML, a supplier of light sources for deep ultraviolet photolithography systems. Mr. Brown has held this position since the completion of Cymer's merger with ASML Holding, Ltd. in May 2013. Prior to the merger with ASML, Mr. Brown served as president and chief operating officer of Cymer, Inc. since September 2005. From 1984 to 2005, Mr. Brown was employed at Applied Materials, Inc. where he held numerous high-level management positions including group vice president and senior advisor to the president, vice president and general manager of the Intel business unit, as well as managing director heading up their largest product division, global operations. Prior to Applied Materials Inc., Brown held key engineering positions at TRW Corporation and Burroughs Corporation. Mr. Brown is a member of SEMI North American Advisory Board. Mr. Brown received a master's degree in business administration from National University and a bachelor's degree in industrial studies from San Diego State University. Mr. Brown's qualifications to serve as a director include his 30 years of experience in the semiconductor industry and his operations expertise.

Stephen G. Newberry, 60, has served as a director since May 2011. Mr. Newberry has been chairman of the board of directors of Lam Research since November 2012. He joined Lam Research in August 1997 as executive vice president and chief operating officer and was promoted to the position of president and chief operating officer in July 1998. In June 2005, he was named president and chief executive officer, and in December 2010, he was named vice chairman of the board of directors and chief executive officer. In addition to serving as a director of Lam Research, Mr. Newberry is a director of Splunk, Inc., and Semiconductor Equipment and Materials International (SEMI), the industry's trade association. He also serves as a member of the Dean's Advisory Cabinet, University of California at

Davis Graduate School of Management. Mr. Newberry was previously a director of Amkor Technologies, Inc. Prior to joining Lam Research, Mr. Newberry was group vice president of global operations and planning at Applied Materials,

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Inc. Mr. Newberry served five years in naval aviation prior to joining Applied Materials. He is a graduate of the U.S. Naval Academy with a BS degree in Ocean Engineering and the Harvard Graduate School of Business Program for Management Development. Mr. Newberry's qualifications to serve as a director include his 30 years' experience in the semiconductor equipment industry, his active role in the semiconductor industry's trade association, and his strong leadership and operations expertise.

Bruce C. Rhine, 56, has served as our Chairman of the Board of Directors since July 2007 and as a director since July 2006. From July 2006 to February 2008, Mr. Rhine served as our Chief Strategy Officer. From March 2007 to August 2007, Mr. Rhine served as our Chief Executive Officer. From 2000 to 2006, Mr. Rhine served as Chairman and Chief Executive Officer of Accent Optical Technologies, Inc. and as its President from January 2003 to April 2005 and from August 2000 to September 2001. Mr. Rhine holds a B.S. degree in Chemical Engineering and an M.B.A. in Finance from The Pennsylvania State University. In addition to his experience from his prior senior management service to Nanometrics, Mr. Rhine brings extensive industry knowledge and executive management experience to the Board.

Timothy J. Stultz, Ph.D., 66, has served as President, Chief Executive Officer and a director since August 2007. From June 2003 to August 2007, Dr. Stultz served as the President and Chief Executive Officer and a director of Imago Scientific Instruments Corporation, a supplier of proprietary 3-D atom probe microscopes to the research materials and microelectronics industries. Prior to Imago, Dr. Stultz served as President and Chief Executive Officer for ThauMDx, a developer of diagnostic systems and technologies for the analysis of biomolecules, drugs and chemicals. Dr. Stultz also serves on the Board of Directors of Tessera Technologies, Inc. Dr. Stultz received his B.S., M.S. and Ph.D. degrees in Materials Science and Engineering from Stanford University. In addition to his institutional knowledge as the executive leader of Nanometrics, Dr. Stultz's scientific background and significant senior executive management experience in high-tech industries is important to the Board.

THE BOARD OF DIRECTORS UNANIMOUSLY RECOMMENDS THAT THE STOCKHOLDERS VOTE "FOR" THE NOMINEES SET FORTH ABOVE.

CORPORATE GOVERNANCE

Board of Directors Meetings and Committees

The full Board of Directors met a total of six times during the fiscal year ended December 28, 2013. During the fiscal year ended December 28, 2013, all directors attended at least 75% of the aggregate number of meetings of the Board of Directors and meetings of committees on which they served. The standing committees of the Board of Directors include an Audit Committee, a Compensation Committee and a Nominating and Governance Committee.

The Board of Directors has determined that for the fiscal year ended December 28, 2013, all of its directors meet the independence requirements of the NASDAQ Stock Market, with the exception of Timothy J. Stultz, Ph.D., due to his position as our President and Chief Executive Officer.

Directors are encouraged to attend the annual meeting of stockholders. All members of the Board of Directors then in office attended the 2013 annual meeting of stockholders.

Audit Committee

The Audit Committee of the Board of Directors oversees our financial reporting, our internal audit and control functions, the results and scope of the annual audit and quarterly reviews conducted by our independent registered public accounting firm, and our compliance with legal matters that may have a significant impact on our financial reports. In addition, the Audit Committee has the responsibility to consider and recommend the engagement of, and to review fee arrangements with, our independent registered public accounting firm. The Audit Committee also monitors transactions between Nanometrics and our officers and directors for any potential conflicts of interest and assists the Board of Directors in its risk oversight role.

During the 2013 fiscal year, the Audit Committee consisted of Howard A. Bain III (chairman), J. Thomas Bentley and Bruce C. Rhine. The Board of Directors has determined that each member of our Audit Committee is “independent” within the meaning of the rules of the Securities and Exchange Commission and the Listing Rules of NASDAQ, and has the qualifications or previous experience to be able to read and understand financial statements. Further, the Board of Directors has determined that each of Mr. Bain, Chairman of the Audit Committee, and Mr. Bentley qualifies as an “audit committee financial expert,” as such term is used in the Securities and Exchange Commission rules.

The Audit Committee met eight times during the 2013 fiscal year.

The report of the Audit Committee is included on page 28 of this Proxy Statement. The Board of Directors has adopted a written Audit Committee Charter, which is available on our website at <http://investor.nanometrics.com/governance.cfm>.

Compensation Committee

The Compensation Committee has overall responsibility for evaluating and approving our executive officer compensation, including incentive compensation, benefit, severance, equity-based and other compensation plans, policies and programs. During the 2013 fiscal year, the Compensation Committee reviewed and approved our compensation policies and programs for the chief executive officer, as well as established and had oversight responsibility with regard to the compensation of other executive officers of Nanometrics. The Compensation Committee also has the responsibility to recommend to the Board of Directors a compensation program for non-employee members of the Board.

The Compensation Committee is also responsible for approving the grant of stock options and stock awards to our employees under our equity compensation plans. The Compensation Committee has delegated to Nanometrics’ officers the authority, within certain parameters, to approve the grant of stock options with respect to employees and consultants who are not executive officers for purposes of Section 16 of the Exchange Act. The Compensation Committee also assists the Board of Directors in assessing the risks, if any, associated with Nanometrics’ overall compensation policies. Although the Compensation Committee has not done so to date, the Compensation Committee may, to the extent permitted under applicable law, the rules of NASDAQ and the Securities and Exchange Commission, and Nanometrics’ Certificate of Incorporation and Bylaws, form and delegate its authority to a subcommittee when appropriate, including delegating to a subcommittee consisting solely of independent, non-employee, outside directors to make grants of stock options to executive officers and directors, provided that such grants are presented to the full Compensation Committee for approval at the following Compensation Committee meeting.

During the 2013 fiscal year, the Compensation Committee consisted of Stephen G. Newberry (who became the Chairman on May 24, 2013), J. Thomas Bentley, and for part of the year, Edward J. Brown Jr. (who joined the Compensation

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Committee on May 24, 2013) and William G. Oldham (who left the Compensation Committee on May 24, 2013). Each current member of our Compensation Committee is an “outside” director as defined in Section 162(m) of the Internal Revenue Code of 1986, as amended, and a “non-employee” director within the meaning of Rule 16b-3 of the Exchange Act. The Board of Directors has determined that each of the directors serving on our Compensation Committee is “independent” within the meaning of the Listing Rules of NASDAQ as currently in effect.

The Compensation Committee met six times during the 2013 fiscal year.

The Compensation Committee Report is included on page 19 of this Proxy Statement. The Board of Directors has adopted a written Compensation Committee Charter, which is available on our website at <http://investor.nanometrics.com/governance.cfm>.

Compensation Committee Processes and Procedures: Typically, the Compensation Committee meets at least quarterly, and with greater frequency, if necessary. The Compensation Committee meets regularly in executive session. However, from time-to-time, various members of management and other employees as well as outside consultants may be invited by the Compensation Committee to make presentations, to provide financial or other background information or advice, or to otherwise participate in Compensation Committee meetings. The Chief Executive Officer may not participate in, or be present during, any deliberations or determinations of the Compensation Committee regarding his compensation. The charter of the Compensation Committee grants the Compensation Committee full access to all books, records, facilities and personnel of Nanometrics, as well as authority to obtain, at the expense of Nanometrics, advice and assistance from internal and external legal, accounting or other advisors and consultants and other external resources that the Compensation Committee considers necessary or appropriate in the performance of its duties. In particular, the Compensation Committee has the authority to retain compensation consultants to assist in its evaluation of executive and director compensation, including the authority to approve the consultant’s reasonable fees and other retention terms.

The Compensation Committee typically makes most of the significant adjustments to annual compensation, determined bonus and equity awards, and established new performance objectives, at one or more meetings held during the first quarter of the year. However, the Compensation Committee also considers matters related to individual compensation, such as compensation for new executive hires, as well as high-level strategic issues, such as the efficacy of Nanometrics’ compensation strategy, potential modifications to that strategy and new trends, plans or approaches to compensation, at various meetings throughout the year. Generally, the Compensation Committee’s process comprises two related elements: the determination of compensation levels and the establishment of performance objectives for the current year. As discussed further in the Compensation Discussion and Analysis below, for executives other than the Chief Executive Officer, the Compensation Committee solicits and considers evaluations and recommendations submitted to the Committee by the Chief Executive Officer. In the case of the Chief Executive Officer, the evaluation of his performance is conducted by the Compensation Committee, which determines any adjustments to his compensation as well as awards to be granted. For all executives, as part of its deliberations, the Compensation Committee may review and consider, as appropriate, materials such as financial reports and projections, operational data, tax and accounting information, tally sheets that set forth the total compensation that may become payable to executives in various hypothetical scenarios, executive and director stock ownership information, company stock performance data, analyses of historical executive compensation levels, current company-wide compensation levels, and recommendations of the Compensation Committee’s compensation consultant, including analyses of executive compensation paid at other companies identified by the consultant. Under its charter, the Compensation Committee may select, or receive advice from, a compensation consultant, legal counsel or other adviser to the Compensation Committee, other than in-house counsel and certain other types of advisers, only after taking into consideration six factors, prescribed by the SEC and NASDAQ, that bear upon the adviser’s independence; however, there is no requirement that any adviser be independent.

During the past fiscal year, the Compensation Committee engaged Compensia, Inc. as its compensation consultant. Compensia has advised the committee for several years and is very familiar with the industry and geographies in which Nanometrics operates. The Compensation Committee requested that Compensia:

- evaluate the efficacy of Nanometrics’ existing compensation strategy and practices in supporting and reinforcing Nanometrics’ long-term strategic goals;

- assist in refining Nanometrics' compensation strategy and in developing and implementing an executive compensation program to execute that strategy; and
- make recommendations regarding 2013 executive compensation.

As part of its engagement, the Compensation Committee requested that Compensia develop a comparative group of companies and to perform analyses of competitive performance and compensation levels for that group. The Committee instructed Compensia to select comparator companies similarly sized and in the same or closely related industry to that of Nanometrics using factors such as, but not limited to, revenue size, market cap, and number of employees. At the request of

the Compensation Committee, Compensia also provided information regarding the labor markets in which Nanometrics competes. Compensia ultimately developed recommendations that were presented to the Compensation Committee for its consideration. Following an active dialogue with Compensia, the Compensation Committee made its independent determinations regarding the compensation of Nanometrics' executive officers. These decisions are discussed in the Compensation Discussion and Analysis section of this Proxy Statement.

Nominating and Governance Committee

The Nominating and Governance Committee assists the Board of Directors in identifying and qualifying candidates to join the Board of Directors and addresses various governance issues. The Nominating and Governance Committee utilizes a variety of methods for identifying and evaluating nominees. Its general policy is to assess the appropriate size and needs of the Board of Directors and whether any vacancies are expected due to retirement or otherwise. In addition, candidates for director nominees are typically reviewed in the context of the current composition of the Board, the operating requirements of Nanometrics, the current needs of the Board, and the long-term interests of stockholders, with the goal of maintaining a balance of knowledge, experience and capability. In the event those vacancies are anticipated, or otherwise arise, the Nominating and Governance Committee will consider recommending various potential candidates to fill such vacancies. Candidates may come to the attention of the Nominating and Governance Committee through its current members, stockholders or other persons. Pursuant to the Nominating and Governance Committee charter, the Committee will consider properly submitted stockholder recommendations for nominations for candidacy. Stockholders who wish to recommend individuals for consideration by the Nominating and Governance Committee to become nominees for election to the Board may do so by delivering a written recommendation to the Nominating and Governance Committee at our principal offices. Nominees may also be submitted directly by stockholders in accordance with Nanometrics' Bylaws as discussed under "Stockholder Proposals" above. Although the Nominating and Governance Committee does not have a formal policy regarding stockholder recommendations for director nominees because the Board of Directors has an open policy regarding communications with stockholders and has not deemed it necessary to develop a formal policy regarding recommendations for director nominations by stockholders, the Nominating and Governance Committee intends to consider director candidates properly submitted by stockholders under the same criteria as candidates recommended by directors or others. The Nominating and Governance Committee has no specific minimum qualifications for director candidates. In general, however, persons considered for Board of Directors positions must have demonstrated leadership capabilities, be of sound mind and high moral character, have no personal or financial interest that would conflict or appear to conflict with the interests of Nanometrics and be willing and able to commit the necessary time for Board of Directors and committee service. The Nominating and Governance Committee also intends to consider such factors as possessing relevant expertise upon which to be able to offer advice and guidance to management, demonstrated excellence in his or her field, having the ability to exercise sound business judgment and having the commitment to rigorously represent the long-term interests of Nanometrics' stockholders. However, the Nominating and Governance Committee retains the right to modify these qualifications from time- to-time.

The Nominating and Governance Committee also recommends to the Board of Directors certain guidelines regarding corporate governance and standards regarding the independence of outside directors applicable to Nanometrics and reviews such guidelines and standards and the provisions of the Nominating and Governance Committee charter on a regular basis to confirm that such guidelines, standards and charter remain consistent with sound corporate governance practices and with any legal or regulatory requirements of NASDAQ and the Securities and Exchange Commission. The Nominating and Governance Committee also monitors the Board of Directors, and Nanometrics' compliance with any commitments made to our regulators and changes in corporate governance practices.

The Nominating and Governance Committee does not have a stated policy with regard to diversity of the Board of Directors. However, the Committee believes that Board members should represent a balance of diverse backgrounds and skills, including marketing, finance, manufacturing, engineering, science, and international experience. During the 2013 fiscal year, the Nominating and Governance Committee consisted of Bruce C. Rhine (who became the Chairman on May 24, 2013), William G. Oldham, and for part of the year Stephen G. Newberry (who was appointed to the Committee on May 24, 2013), and Stephen J Smith, Ph.D. and Norman V. Coates (each of whom left the Committee on May 24, 2013). The Board of Directors has determined that each of the directors serving on our Nominating and Governance Committee is "independent" within the meaning of the Listing Rules of NASDAQ.

The Nominating and Governance Committee met four times in the 2013 fiscal year.

The Board of Directors has adopted a written Nominating and Governance Committee Charter, which is available on our website at <http://investor.nanometrics.com/governance.cfm>.

Board Structure

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Bruce C. Rhine serves as the Chairman of the Board and Timothy J. Stultz, Ph.D. serves as both the Chief Executive Officer and a director of Nanometrics. We believe that having a separate Chairman and Chief Executive Officer is appropriate and is consistent with corporate governance best practices. From July 2006 to February 2008, Mr. Rhine served as our Chief Strategy Officer, and from March 2007 to August 2007 Mr. Rhine served as our Chief Executive Officer. Because of his previous roles with Nanometrics, Mr. Rhine is intimately familiar with Nanometrics' business and industry, and very capable of effectively identifying strategic priorities, leading discussions of the Board of Directors and defining Nanometrics' strategic objectives. The Board of Directors determined that Mr. Rhine became an independent member of the Board effective February 2011 under the NASDAQ Listing Rules due to the passage of time subsequent to his previous management role with Nanometrics. Dr. Stultz, as the Chief Executive Officer, is the individual selected by the Board of Directors to manage Nanometrics on a day-to-day basis, and his prior experience and direct involvement in Nanometrics' operations allows him to provide valuable insights with respect to strategic planning and the operational requirements to meet Nanometrics' short- and long-term objectives. Nanometrics' independent directors bring experience, oversight and expertise from outside the company and industry.

The Board's Role in Risk Oversight

One of the Board's primary responsibilities is reviewing Nanometrics' strategic plans and objectives, including oversight of the principal risk exposures of the company. The Board does not have a standing risk management committee, but rather administers this oversight function directly through the Board as a whole, as well as through various Board standing committees that address risks inherent in their respective areas of oversight. In particular, the Board is responsible for monitoring and assessing strategic risk exposure, including a determination of the nature and level of risk appropriate for the company. The Audit Committee assists the Board in oversight and monitoring of the legal and financial risks facing Nanometrics, and management's approach to addressing these risks and strategies for risk mitigation. The Audit Committee is also responsible for discussing guidelines and policies governing the process by which management and other persons responsible for risk management, assess and manage Nanometrics' exposure to risk, as well as Nanometrics' major financial risk exposures and the steps management has taken to monitor and control such exposures, based on consultation with Nanometrics' management and independent auditors. Our Compensation Committee assesses and monitors whether any of our compensation policies and programs has the potential to encourage excessive risk-taking. The Board addresses, at least annually, the principal current and future risk exposures of Nanometrics. The Board receives regular reports from members of senior management on areas of material risk to Nanometrics, including operational, financial, legal and regulatory, strategic and reputation risks.

Voting For Directors – Majority Vote Policy

If a nominee for director in an uncontested election receives a greater number of “withhold” votes for election than “for” votes (“Majority Withheld Vote”), that director must promptly tender to the Board his or her offer of resignation. If a director receives a Majority Withheld Vote, our Nominating and Governance Committee (or such other committee as the Board may appoint) shall make a recommendation to the Board, which will decide whether to accept or reject the resignation previously tendered by such director.

The Board must act on the tendered resignation, taking into account the recommendation of such committee, within 90 days from the date of the certification of the election results. The director whose resignation is under consideration is not permitted to participate in the recommendation of the committee or deliberations of the Board with respect to his or her resignation. However, if the only directors who did not receive a Majority Withheld Vote in the same election constitute less than a majority of directors, all directors may participate in the action regarding whether to accept the resignation offers. If a director's resignation is not accepted by the Board, the director will continue to serve until the next annual meeting of shareholders or until his or her successor is duly elected and qualified, or his or her earlier resignation or removal. If a director's resignation is accepted by the Board, then the Board, in its sole discretion, must fill any resulting vacancy or decrease the size of the Board.

Code of Ethics

We have adopted a Code of Business Conduct and Ethics that applies to all directors, executive officers and employees. We post our Code of Business Conduct and Ethics on our website at:

<http://investor.nanometrics.com/governance.cfm>.

Stockholder Communication Policy

We have established a formal process for stockholders to send communications to the Board of Directors or to individual directors. The names of all directors are available to stockholders in this Proxy Statement. Stockholder communications may be submitted in writing to Nanometrics Incorporated, 1550 Buckeye Drive, Milpitas, California 95035,

Attention: Office of the Secretary. If we receive any stockholder communication intended for the full Board of Directors or any individual director, we will forward the communication to the full Board of Directors or the individual director, unless the communication is clearly of a marketing nature or is unduly hostile, threatening, illegal or similarly inappropriate.

Related Person Transaction Policy

Nanometrics has a written policy regarding related party transactions that requires that the Audit Committee review any transaction or series of transactions in excess of \$50,000 in any year between Nanometrics, on the one hand, and an officer, director or 5% or greater stockholder, on the other. Nanometrics' Chief Financial Officer has the responsibility for bringing the facts concerning a proposed related party transaction to the Audit Committee. The policy permits approval only in the event of a finding that the transaction is on terms no less favorable than would have been obtained in an ordinary arms-length transaction with an independent third party.

SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT

The following table sets forth beneficial ownership of Nanometrics common stock as of March 27, 2014, by each director, by each of the named executive officers, by all directors and executive officers as a group, and by all persons known to Nanometrics to be the beneficial owners of more than 5% of Nanometrics stock. Unless otherwise indicated, all persons and entities have sole voting and investment power over the shares reported. Unless otherwise indicated, the address of each executive officer or director of Nanometrics is 1550 Buckeye Drive, Milpitas, CA 95035. As of the close of business on March 27, 2014, there were 23,874,166 shares of common stock outstanding.

Name Of Beneficial Owner – Principal Stockholders	Shares	Amount and Nature of Beneficial Ownership ⁽¹⁾ Shares		
		RSU's to be released and Stock Options Exercisable Within 60 Days Of 3/27/2014	Total Shares Beneficially Owned	Percent of Class
Waddell & Reed Financial, Inc. ⁽²⁾	2,650,150	0	1,438,458	11.1 %
Royce & Associates, LLC ⁽³⁾	2,334,473	0	2,334,473	9.8 %
BlackRock, Inc. ⁽⁴⁾	2,127,897	0	2,127,897	8.9 %
Artisan Partners Limited Partnership, and related entities ⁽⁵⁾	1,919,680	0	2,002,173	8.0 %
Wellington Management Company, LLP ⁽⁶⁾	1,920,193	0	1,920,193	8.0 %
Name Of Beneficial Owner – Directors And Officers	Shares	RSU's to be released and Stock Options Exercisable Within 60 Days of March 27, 2014	Total Shares Beneficially Owned	Percent of Class
Bruce C. Rhine	827,558	128,118	955,676	4.0 %
Howard A. Bain III	15,148	20,625	35,773	*
J. Thomas Bentley	49,648	23,496	73,144	*
Edward Brown Jr.	0	6,930	6,930	*
William G. Oldham, Ph.D.	16,928	25,996	42,924	*
Stephen G. Newberry	4,493	14,534	19,027	*
Timothy J. Stultz, Ph.D.	71,095	256,625	327,720	1.4 %
Bruce A. Crawford	31,770	24,687	56,457	*
Ronald Kisling	5,165	34,572	39,737	*
Nancy E. Egan	3,884	15,416	19,300	*
All executive officers and directors as a group (10 persons)	1,025,689	550,999	1,576,688	6.6 %

* less than 1 percent

(1) As determined in accordance with Rule 13d-3 under the Securities and Exchange Act of 1934. Information obtained from Schedules 13G and 13G/A, except as as indicated in the footnotes below, is as of December 31, 2013, and does not reflect changes, if any, since that date.

(2) According to a Schedule 13G/A filed with the SEC on February 7, 2014, Waddell & Reed Financial, Inc. has sole voting and investment power over all of these shares, Ivy Investment Management Company has sole voting and investment power over 1,438,458 of these shares and each of Waddell & Reed Investment Management Company, Waddell & Reed Financial Services, Inc. and Waddell & Reed, Inc. has sole voting and investment power over 1,211,692 of these shares. The address of each of these entities is 6300 Lamar Avenue, Overland Park, KS 66202.

(3) According to a Schedule 13G/A filed with the SEC on January 6, 2014, Royce & Associates, LLC has sole voting and investment power over all of these shares. The address of Royce & Associates, LLC is 745 Fifth Avenue, New York, NY 10151.

(4) According to a Schedule 13G/A filed with the SEC on January 30, 2014, BlackRock, Inc. has sole voting power over 2,073,409 of these shares, and shared investment power over all of these shares. The address of BlackRock, Inc. is 40 East 52nd Street, New York, NY 10022.

(5) According to a Schedule 13G/A filed with the SEC on March 24, 2014, as of March 12, 2014, Artisan Partners Funds, Inc. has shared voting and investment power over 1,255,041 of these shares and Artisan Partners Limited Partnership, Artisan Investments GP LLC, Artisan Partners Holdings LP

and Artisan Partners Asset Management Inc. each has shared voting power over 1,749,441 of these shares and shared investment power over all of these shares. The address of each of these entities is 875 East Wisconsin Avenue, Suite 800, Milwaukee, WI 53202.

(6) According to a Schedule 13G/A filed with the SEC on February 14, 2014, Wellington Management Company, LLP has shared voting power over 990,515 of these shares, and shared investment power over all of these shares. The address of Wellington Management Company, LLP is 280 Congress Street, Boston, MA 02210.

Section 16(a) Beneficial Ownership Reporting Compliance

Section 16(a) of the Exchange Act requires our executive officers and directors, and persons who own more than 10% of a registered class of our equity securities, to file reports of ownership and changes in ownership with the Securities and Exchange Commission. Executive officers, directors and greater than 10% stockholders are required by Securities and Exchange Commission regulations to furnish Nanometrics with copies of all Section 16(a) forms that they file.

Based solely on our review of the copies of such forms received by us or written representations from certain reporting persons, we believe that our executive officers, directors and greater than 10% stockholders have complied with all applicable filing requirements except for the Form 4 specified below. Nanometrics assists our executive officers and directors in the preparation and filing of Forms 4, and generally files the Forms 4 on behalf of our directors and executive officers using the powers of attorney given to certain executive officers of Nanometrics by our executive officers and directors delegating the authority to make the filings. A Form 4 filing due on Thursday April 4, 2013 on behalf of Norman Coates was filed by the Company on Monday April 8, 2013.

EXECUTIVE COMPENSATION

2013 Compensation Discussion and Analysis

Philosophy and Objectives

Nanometrics' named executive officer compensation program is intended to enable us to attract, retain and motivate key executives and to align their interests with those of the stockholders by tying executive compensation to our short-term and long-term performance. The Compensation Committee acts on behalf of the Board of Directors and, by extension, on behalf of our stockholders, to establish, implement and continually monitor adherence to our compensation philosophy. The Compensation Committee's philosophy is to design a compensation package that balances the need for alignment between the interests of executive officers and stockholders in terms of producing short-term and long-term enhanced stockholder value, while achieving retention and motivation through appropriate incentives, taking into account both internal equity and external market information relative to our industry and size. The Compensation Committee designs the executive compensation program with the goal of providing total compensation to our named executive officers that is competitive and consistent with our compensation philosophy. The Compensation Committee's principal objectives are to: (a) develop, recommend and approve compensation packages that are consistent with our philosophy; (b) link executive compensation to the achievement of financial, management or other performance goals and; (c) support our culture and core values by promoting equity among the executive team and maintaining the competitiveness of our overall compensation when compared with external opportunities.

Philosophy and Objectives Applied

The Compensation Committee relied on an independent outside compensation consulting firm, Compensia, our human resources department, and our Chief Executive Officer to provide information and recommendations to establish specific compensation packages for our named executive officers for the 2013 fiscal year that ended December 28, 2013.

Our executive compensation packages for the 2013 fiscal year included three primary components – base salaries, cash bonus award opportunities and long-term equity incentive awards. Other elements of compensation include limited perquisites, other benefits (including retirement, health, and welfare benefits), and severance arrangements. The Compensation Committee considered the three primary components individually and in the aggregate to assess their competitiveness and effectiveness in retaining our executives and motivating them to create short-term and long-term enhanced stockholder value.

In the Compensation Committee's review of our named executive compensation for the 2013 fiscal year, the Compensation Committee considered publicly available market data for companies that typically include

similarly-sized semiconductor and semiconductor capital equipment or similar firms for each executive in a like or similar role. For the 2013 fiscal year, Compensia recommended that the Compensation Committee approve modifications to the group of peer companies for conducting compensation analysis from proxies to better reflect our size and business. The Compensation Committee considered the following factors:

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- industry: Global Industrial Classification System code - Semiconductor and Semiconductor Equipment, and Electrical Equipment, Instruments and Components;
- geographic location: U.S. headquartered;
- revenues;
- market capitalization; and
- several other factors including profitability, growth and revenues relative to market capitalization.

A number of companies were removed from the peer group companies used in our 2012 fiscal year analysis (Measurement Technologies, Mercury Computer Systems, MTS Systems, Newport, OSI Systems, Rofin Sinar Technologies, and Rubicon Technologies) because they no longer fit within our criteria. A number of companies (Advanced Energy Industries Inc., ATMI, Inc., Brooks Automation, Inc., Cohu, Inc., Form Factor, Inc., FSI, Lattice Semiconductor Corp, and Silicon Image)) were added to our 2013 fiscal year analysis because these companies better reflect the criteria described above. Our peer group companies considered for the 2013 fiscal year are listed below.

2013 Fiscal Year Peer Group Companies

Advanced Energy Industries, Inc.	Lattice Semiconductor Corp
ATMI, Inc.	Maxwell Technologies, Inc.
Brooks Automation, Inc.	Photonics
Cabot Microelectronics Corporation	LTX Credence Corporation
Cohu, Inc.	Rudolph Technologies, Inc.
Electro Scientific Industries, Inc.	Silicon Image
FARO Technologies, Inc.	Ultratech, Inc.
Form Factor, Inc.	Zygo Corporation
FSI	

The companies above were selected because they operate in our industry or similar industries, are comparable to Nanometrics based on both survey data and proxy data (revenues \$100 million to \$500 million, average of approximately \$278 million over the four quarters preceding selection) and/or market capital (\$100 million to \$800 million). Compensia gathered data with respect to base salary, target bonus awards and all equity awards, including stock options and restricted stock units (RSUs). We generally do not gather data regarding employee benefits such as 401(k) or health care coverage generally available to broad groups of employees. Compensia is charged with gathering the market data and assisting in informing the Compensation Committee using their marketplace expertise and the market data gathered.

While the market data may identify a certain percentile of the market in which we operate with regard to base, bonus or long-term incentives, the Compensation Committee did not target any specific percentile but instead looked at each element as compared to the total targeted cash package and the various components, in light of the desired results, internal equity and the information provided, and then decided if a change to compensation was warranted or not. The Compensation Committee also consulted with our Chief Executive Officer with respect to the appropriate compensation for the executives who report to him: Mr. Crawford, our Chief Operating Officer; Mr. Kislung, our Chief Financial Officer; and Ms. Egan, our Chief Legal Officer. The Chief Executive Officer reviewed the experience and qualifications, and performance of our executives using the elements and framework described under “2013 Executive Compensation Components” below, and made recommendations to the Compensation Committee about the structure of the overall compensation program and individual compensation arrangements. This framework provided a guide for the Compensation Committee’s deliberations and recommendations regarding proposals for salary, bonus opportunities and long-term equity incentive awards for each executive position. The Compensation Committee considered those factors that are controllable by management such as expenses and cash, account penetration and long-term stockholder value delivery and others that are less within management control such as revenue, which is subject to the short-term industry cycles and the timing of customer capital spending cycles. The Compensation Committee did not apply formulas or assign specific mathematical weights to the peer group data or any of the factors or elements of compensation discussed above, but rather exercised its business judgment and discretion to make a subjective determination of both the amounts of compensation as well as the distribution of compensation among the various components, after considering all of these measures collectively. The Compensation Committee then came to a conclusion based on the framework outlined above to approve an appropriate compensation package for each

executive.

2013 Executive Compensation Components

For the 2013 fiscal year, the principal components of compensation for our named executive officers, Dr. Stultz, Messrs. Crawford and Kisling and Ms. Egan, were:

- Base salary;
- Bonus;
- Stock option grants;

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- RSU grants; and
- Retirement and other benefits.

The Compensation Committee has chosen these components because it believes that each supports achievement of one or more of our compensation objectives, and that together they will be effective in this regard. The use of each compensation component is based on a determination by the Compensation Committee of the importance of each compensation objective in supporting our business and talent strategies. These components are commonly used for executives at companies within our peer group and, therefore, the Compensation Committee finds these to be appropriate in our talent retention strategy. The Compensation Committee's determination varies for each executive officer depending on a number of factors, including but not limited to, scope of his or her responsibilities, leadership skills and values, individual performance and length of service with Nanometrics. The Compensation Committee did not apply formulas or assign specific mathematical weights to any of these factors, but rather exercised its business judgment and discretion to make a subjective determination after considering all of these measures collectively.

Base Salary

Base salaries serve as the foundation of Nanometrics' compensation program. Other executive compensation elements, including annual short-term cash incentives and long-term equity incentives, are derived by weighing them against base salary. Nanometrics provides named executive officers with base salaries to compensate them for services rendered during the fiscal year and sets base salaries at levels which the Compensation Committee believes will effectively attract and retain top talent. The Compensation Committee determines base salaries for each named executive officer based on his or her experience, position and responsibility, as well as the contribution that he or she brings to Nanometrics through performance. During its annual review of base salaries for executives, the Compensation Committee primarily considers:

- the salaries of executive officers in similar positions at our peer group companies as discussed in the above section titled "Philosophy and Objectives Applied";
 - our financial performance over the past year based upon the ability to achieve Board-approved financial metrics including revenue targets, operating income targets and other operating results metrics; and
 - the individual performance of each named executive officer, his or her duties and areas of responsibility on a subjective basis, which may include, among other things: span of control; ability to influence, manage and produce results that increase profitability of Nanometrics; and ability to streamline and create efficiencies in the organization.
- The Compensation Committee considers salary levels annually as part of our performance review process as well as upon a promotion or other change in job responsibility. The Compensation Committee reviews and determines salaries after reviewing salary data supplied by Compensia, which uses peer comparison groups, as well as consideration of the compensation for our executives on a company-wide basis, based on their relative duties and responsibilities and the recommendations of our Chief Executive Officer as it relates to the executives who report to him. Stock price performance has not been a direct factor in determining annual base salary compensation because the price of our common stock is subject to a variety of factors outside of our control. The Compensation Committee also considered comparisons of peer group compensation to peer group performance provided by Compensia. The Compensation Committee did not apply formulas or assign specific mathematical weights to any of these factors, but rather exercised its business judgment and discretion to make a subjective determination regarding each executive's base salary after considering all of these measures collectively. Based on all of the data considered, the Committee did not adjust executive salaries in 2013.

Bonus

The Compensation Committee views cash bonuses as part of its performance-based compensation program designed to align the recipient's interests with our annual goals and objectives and our stockholders' interests. At our 2012 annual meeting of stockholders, the stockholders approved the Executive Performance Bonus Plan (the "Plan"). Within the parameters of the Plan, the Compensation Committee established the 2013 Executive Performance Bonus Program (the "2013 Bonus Program"). The 2013 Bonus Program was designed to promote market share growth in existing customer and product base as well as increased market share in foundry business and growth of emerging products. Bonuses would be triggered upon our achievement of target metrics determined by the Compensation Committee.

As part of the 2013 Bonus Program, the Compensation Committee established the following target bonus opportunities:

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Executive	Target Bonus Opportunity (as a % of annual base salary)
Dr. Stultz	100%
Mr. Crawford	70%
Mr. Kisling	55%
Ms. Egan	40%

Target bonus opportunities for each executive officer are reviewed and determined by the Compensation Committee after considering bonus award data supplied by Compensia, which uses peer comparison groups, as described under the section titled "Philosophy and Objectives Applied" above, as well as consideration of the compensation for our executives based on their relative duties and responsibilities. The Compensation Committee did not apply formulas or assign specific mathematical weights to any of these factors, but rather exercised its business judgment and discretion to make a subjective determination regarding each executive's target bonus opportunity after considering all of these measures collectively.

The target bonus opportunity was divided into the following three discrete components: (i) achievement of a market share defense/growth target measured by new business wins at existing customers; (ii) growth of sales to foundry customers; and (iii) growth in sales of our UniFire and SPARK products.

The components were weighted as follows:

Component	Component Weight (as % of Total Target Bonus)
Market Share Defense/Growth	30%
Foundry Business Growth	35%
Emerging Business Growth	35%

The maximum award that an executive could receive under the 2013 Executive Performance Bonus Plan was two times the target bonus opportunity. In addition, to further align executive incentives with stockholder interests, the 2013 Executive Performance Bonus Plan provided that the payout would be limited in the event that Adjusted Operating Income, defined as GAAP Operating Income/(Loss) plus stock compensation, depreciation, amortization, including amortization of intangible assets, and any unusual charges, such as restructuring, impairment, litigation or acquisition charges, did not meet certain thresholds. If Adjusted Operating Income was \$0 or less, the maximum award was capped at 1x of the bonus opportunity. If Adjusted Operating Income was above \$0 and below 5% of revenues, the maximum award was capped at 1.5x of the bonus opportunity.

Each component was measured against a target that was determined by the Compensation Committee during the first quarter of 2013:

The Market Share Defense/Growth component was measured using a point system in which points were awarded for successful completion of engagements with key customers. An engagement is a demonstration or evaluation of a new product or application with an existing customer (other than customers included in the Foundry Business Growth Component). Engagements were weighted by the revenue potential of the customer engagement. An Engagement was considered successful only if the customer issued a purchase order during fiscal year 2013 for the tool presented during the engagement. The Compensation Committee could exercise negative (but not positive) discretion in awarding points for successful engagements. Based on the weighting system and the successful engagements, the executives earned 55% of this component.

The Foundry Business Growth component was measured by year-over-year growth of total tool and upgrade revenue attributable to certain targeted foundry customers. No bonus was awarded for this component because the minimum growth for award was not achieved.

The Emerging Business Growth component target was measured by year-over-year growth of total tool and upgrade revenue from the UniFire and SPARK product lines. No bonus was awarded for this component because the minimum growth for award was not achieved.

As a result, Dr. Stultz and Messrs. Crawford and Kisling and Ms. Egan were entitled to, and received, under the 2013 Bonus Program, cash bonuses of 16.5% of the Target Bonus Opportunity in the amounts of \$ 76,725, \$40,021, \$28,586 and \$15,180, respectively.

Long-Term Incentive Compensation

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The Compensation Committee believes that equity compensation plans are an essential tool to link the long-term interests of Nanometrics' stockholders and our employees, particularly our executive officers, and serve to motivate executives to make decisions that will, in the long run, optimize returns to our stockholders. Equity compensation plans also enable us to provide an opportunity for increased equity ownership by executives, thereby increasing the link between the incentives of our executives and the interests of our stockholders, and maintain competitive levels of total compensation. Each year the Compensation Committee considers incentive and retention needs, market competitiveness and industry and business conditions to make its subjective determination of the appropriate balance of stock options, which provide potential reward in the event of exceptional company performance, and RSUs, which provide a more predictable value.

Stock Option Grants. All of the executive officers received stock option awards during the 2013 fiscal year. The Compensation Committee determined the size of these stock option awards based on an analysis of peer group data related to the size of equity awards, as described under the section titled "Philosophy and Objectives Applied" above, including other relevant factors, such as peer group competitive data and the other long-term incentives with respect to each named executive officer. The Compensation Committee did not benchmark to a specific target percentile, but instead considered proposed equity awards in the context of each executive's cash and total compensation package. In addition, the Compensation Committee considered other factors when determining each executive's stock options, including: the level of resulting alignment with the interests of Nanometrics' stockholders; such executive's position within the organization and the appropriate level of equity compensation for such position relative to others in the organization's hierarchy; such executive's contributions to Nanometrics' financial, operational and general performance; Nanometrics' stock price; and the Black-Scholes value of such awards. The Compensation Committee did not apply formulas or assign specific mathematical weights to any of these factors, but rather exercised its business judgment and discretion to make a subjective determination regarding each executive's stock option grants after considering all of these measures collectively.

The Compensation Committee meeting schedule is determined in advance, and, therefore, proximity of any award date to a material news announcement or a change in our stock price, if any, is coincidental. We do not backdate equity awards or make equity awards retroactively. In addition, we do not coordinate our equity grants to precede announcements of favorable information or follow announcements of unfavorable information. Equity awards are priced using the closing market price of the common stock on the date of grant.

Restricted Stock Unit Grants. All of the executives received RSU awards during the 2013 fiscal year. Similar to stock options, the Compensation Committee believes that RSUs, which increase in value as the market price of our common stock increases, both encourage our executives to work toward the longer term goal of creating stockholder value and provide retention value. RSUs align the interests of our executives to the interests of our stockholders because an executive that holds RSUs is exposed to the same market risks to which our stockholders are exposed. RSU award levels for 2013 were determined based on an analysis of peer group data related to the size of equity awards as described under our section "Philosophy and Objectives Applied" above, including relevant factors such as peer group competitive data. The Compensation Committee did not benchmark to a specific target percentile, but instead considered proposed RSU awards in the context of each executive's cash and total compensation package. In addition, the Compensation Committee considered other factors when determining each executive's RSU award, including: the level of resulting alignment with the interests of our stockholders; such executive's position within the organization and the appropriate level of equity compensation for such position relative to others in the organization's hierarchy; such executive's contributions to our financial, operational and general performance; our stock price; and the Black-Scholes value of such awards. The Compensation Committee did not apply formulas or assign specific mathematical weights to any of these factors, but rather exercised its business judgment and discretion to make a subjective determination regarding whether to grant, and the size of grants of, RSUs to each executive.

Other Elements of Compensation

All Nanometrics employees in the United States, including our named executive officers, are eligible to participate in our 401(k) plan, medical, dental and vision insurance, employee stock purchase plan, as well as our life and disability insurance policy. Nanometrics' 401(k) Plan and other generally available benefits programs allow us to remain competitive for employee talent, and we believe that the availability of these benefits programs generally enhances employee productivity and loyalty to Nanometrics. The main objectives of Nanometrics' benefits programs are to give

employees access to quality healthcare, financial protection from unforeseen events, assistance in achieving retirement financial goals, and enhanced health and productivity, all in full compliance with applicable legal requirements. These generally available benefits typically do not specifically factor into decisions regarding an individual named executive officer's total compensation or equity award package.

Our Compensation Committee grants equity awards under our 2005 Equity Incentive Plan to the Named Executives and other employees as incentive compensation. The Compensation Committee meeting schedule is determined several months in advance, and, therefore, proximity of any award date to a material news announcement or a change in our stock price, if any, is coincidental. We do not backdate equity awards or make equity awards retroactively. In addition, we do not coordinate our

equity grants to precede announcements of favorable information or follow announcements of unfavorable information. Equity awards are priced using the closing market price of the common stock on the date of grant.

Perquisites

Nanometrics provides certain named executive officers with a limited number of perquisites that the Compensation Committee believes are reasonable and consistent with our overall compensation program. Although the Compensation Committee seeks the advice of the human resources department on general market competitiveness for these benefits, it does not use a formal benchmarking process. The aggregate incremental costs to Nanometrics of these perquisites are included in the Summary Compensation Table in the "All Other Compensation" column. Dr. Stultz receives a car allowance. All Named Executives are eligible to participate in an Executive Healthcare Reimbursement plan that provides for reimbursement of usual and customary costs that may not be covered under the medical, dental and eye care plans available to all other Nanometrics employees; actual amounts reimbursed are included in the Summary Compensation Table as "All Other Compensation."

Severance Benefits

The Compensation Committee considers maintaining a stable and effective management team to be essential to protecting and enhancing the best interests of Nanometrics and its stockholders. Accordingly, the Compensation Committee has taken steps to encourage the continued attention, dedication and continuity of members of our management to their assigned duties without the distraction that may arise from the potential termination of employment. Specifically, we have entered into agreements with our four named executive officers providing for severance payments and benefits, consisting of cash severance, accelerated vesting of equity awards and continued health care benefits, upon a termination of employment without cause or resignation for good reason in connection with a "change in control" of Nanometrics, as described in greater detail below in the section titled "Employment Contracts and Termination of Employment and Change-in-Control Arrangements." Nanometrics entered into these agreements with Dr. Stultz and Mr. Crawford in 2010, and with each of Mr. Kisling and Ms. Egan at the time each was hired in 2011. In addition, the agreements with our Chief Executive Officer, Dr. Stultz, and our Chief Operating Officer, Mr. Crawford, provide for severance payments and benefits, consisting of cash severance and continued health care benefits and, in the case of Mr. Crawford, accelerated vesting of equity awards, upon a termination of employment without cause or resignation for good reason outside of a change of control situation, also described in greater detail in the section titled "Employment Contracts and Termination of Employment and Change-in-Control Arrangements." In all cases, in exchange for receiving severance benefits and payments, the executive officer will be subject to non-compete, non-solicitation, and non-disparagement restrictions, and is required to execute a full release and waiver of any claims against Nanometrics.

When entering into these agreements, the Compensation Committee analyzes data and suggestions from Compensia as well as our human resources department, which information includes comparing such amounts against our peer group. However, the Compensation Committee did not benchmark to any specific percentile, but rather exercised its business judgment and discretion to make a subjective determination after considering this information. The peer group used in this analysis is the same peer group that we consider in connection with our analysis and determination of the total compensation packages for our executives, at the time Nanometrics entered into the agreement with the individual Executive Officer.

After considering industry practices and reviewing the policies and practices of the companies in our peer group, the Compensation Committee determined that our severance and benefits agreements are necessary and appropriate in substance and scope to provide competitive compensation to the types of individuals that Nanometrics desires to attract, hire and retain. The Compensation Committee also believes that these agreements are consistent with our overall compensation philosophy. The Compensation Committee periodically monitors industry practice in this area to ensure that these agreements remain consistent with industry practice and our overall compensation philosophy of offering competitive compensation to preserving our ability to attract and retain key executives

Tax and Accounting Implications

As part of its role, the Compensation Committee reviews and considers both tax and accounting related implications as they apply and as they evolve.

As part of its role, the Compensation Committee reviews and considers the deductibility of executive compensation under Section 162(m) of the Internal Revenue Code, which provides that we may not deduct compensation of more

than \$1,000,000 that is paid to certain executive officers, unless certain exemption requirements are met. Exemptions to this deductibility limit may be made for various forms of “performance-based” compensation, including compensation that will be payable in the future under our Executive Performance Bonus Plan which was approved by stockholders in 2012. We believe that compensation paid under the management long-term equity incentive plans is generally fully deductible for

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federal income tax purposes. However, in certain situations, the Compensation Committee may approve compensation that will not meet these requirements to ensure competitive levels of total compensation for our executive officers. Section 4999 and Section 280G of the Internal Revenue Code provide that executives could be subject to additional taxes if they receive payments or benefits that exceed certain limits in connection with a change in control of Nanometrics and that Nanometrics could lose an income tax deduction for such payments. We have not provided any executive with a tax “gross up” or other reimbursement for tax amounts the executive might be required to pay under Section 4999 or Section 280G of the Internal Revenue Code as the Compensation Committee determined that this was not consistent with best practices.

Section 409A of the Internal Revenue Code imposes additional taxes and interest on underpayments in the event that an executive defers compensation under a compensation plan that does not meet the requirements of Section 409A. We believe that we are operating in good faith compliance with Section 409A and have structured our compensation and benefits programs and individual arrangements in a manner intended to comply with the requirements thereof.

Risks Associated With Compensation Plans

In 2013, the Compensation Committee determined that our compensation policies and practices for our employees are not reasonably likely to cause employees to take risks that would have a material adverse effect on the company.

Results of 2013 Shareholder Advisory Vote to Approve Executive Compensation

At our 2013 annual meeting of stockholders, we requested our stockholders to approve, on an advisory (non-binding) basis, the compensation paid to our executive officers as reported in the Proxy Statement for the 2013 annual meeting. Our stockholders expressed substantial support for our executive compensation, with approximately 97.8% of the shares present and entitled to vote voting for approval of the “say-on-pay” advisory vote approving our executive compensation. Because of the high level of support expressed by our stockholders for the 2013 fiscal year executive compensation, the Compensation Committee has continued to apply a similar approach for executive compensation decisions and policies.

COMPENSATION COMMITTEE REPORT¹

The Compensation Committee has reviewed and discussed with management the “Compensation Discussion and Analysis” section of this Proxy Statement and, based on such review and discussion, recommended to the Board of Directors that the Compensation Discussion and Analysis section be included in this Proxy Statement and incorporated into Nanometrics’ Annual Report on Form 10-K for the fiscal year ended December 28, 2013.

The Compensation Committee

Stephen G. Newberry, Chairman
J. Thomas Bentley
Edward J. Brown Jr.

¹ The material in this report is not “soliciting material,” is furnished to, but not deemed “filed” with, the Securities and Exchange Commission and is not deemed to be incorporated by reference in any filing of the Company under the Securities Act or the Exchange Act, other than the Company’s Annual Report on Form 10 K, where it shall be deemed to be “furnished,” whether made before or after the date hereof and irrespective of any general incorporation language in any such filing.

2013 Summary Compensation Table

The following table sets forth the compensation for the past three fiscal years for (i) our Chief Executive Officer, (ii) our Chief Financial Officer, and (iii) each of our other executive officers not serving as Chief Executive Officer or Chief Financial Officer, all of whom are collectively referred to as the “named executive officers.”

SUMMARY COMPENSATION TABLE

Fiscal Year 2013

	Year	Salary (\$)	Bonus (\$)	Stock Awards ^{(2),(3)}	Option Awards ^{(2),(4)}	Non-Equity Incentive Plan Compensation ⁽¹⁾	All Other Compensation ⁽⁵⁾	Total
Dr. Timothy J. Stultz President, Chief Executive Officer and Director	2013	\$465,000	\$0	\$951,000	\$542,106	\$76,725	\$23,677	\$2,058,508
	2012	\$465,000	\$139,500	\$380,600	\$575,815	\$0	\$22,170	\$1,583,085
	2011	\$425,000	\$0	\$0	\$0	\$296,997	\$26,641	\$748,638
Bruce A. Crawford Chief Operating Officer	2013	\$346,500	\$0	\$317,000	\$180,702	\$40,021	\$6,823	\$891,046
	2012	\$346,500	\$72,765	\$190,300	\$287,908	\$0	\$21,956	\$919,429
	2011	\$330,000	\$0	\$0	\$0	\$215,236	\$22,155	\$567,391
Ronald Kisling Chief Financial Officer	2013	\$315,000	\$0	\$206,050	\$117,456	\$28,586	\$6,609	\$673,701
	2012	\$315,000	\$51,975	\$95,150	\$143,954	\$0	\$6,186	\$612,265
	2011	\$242,308	\$0	\$161,600	\$293,892	\$111,811	\$14,337	\$823,948
Nancy E. Egan Chief Legal Officer	2013	\$230,000	\$0	\$158,500	\$90,351	\$15,180	\$5,559	\$499,590
	2012	\$227,346	\$27,600	\$0	\$0	\$0	\$3,452	\$258,398
	2011	\$37,154	\$0	\$86,150	\$208,268	\$14,326	\$0	\$345,898

(1) Amounts reflected for fiscal year 2013 are those earned, but not paid until fiscal year 2014, under our 2013 executive Performance Bonus Program.

(2) Amounts shown do not reflect compensation actually received by the named executive officer. Instead, the amounts shown are the aggregate fair value of equity awards granted for financial statement reporting purposes, as determined pursuant to ASC Topic 718. The assumptions used to calculate the value of the options are set forth under Note 16 of the Notes to Consolidated Financial Statements included in Nanometrics' Annual Report on Form 10-K for the fiscal year ended December 28, 2013 filed with the SEC on March 7, 2014.

(3) For fiscal year 2013, the Board of Directors awarded Messrs. Stultz, Crawford and Kisling and Ms. Egan restricted stock unit awards in the amount of 60,000, 20,000, 13,000 and 10,000, respectively, on March 12, 2013. All such RSU's vest annually over 3 years from the grant date. The FMV on the date of grant was \$15.85 per share.

(4) For fiscal year 2013, the Board of Directors awarded Messrs. Stultz, Crawford and Kisling and Ms. Egan stock option awards in the amount of 60,000, 20,000, 13,000 and 10,000, respectively, on March 12, 2013 with an exercise price of \$15.85 per share. All such Options vest in equal monthly installments over 4 years from the grant date.

(5) Represents fiscal year 2013 additional compensation for named executive officers as follows: Dr. Stultz received reimbursements under our Executive Health Care Plan in the amount of \$4,677, an employer 401(k) match in the amount of \$4,600 and a car allowance in the amount of \$14,400. Mr. Crawford received \$2,223 through our Executive Health Care Plan and an employer 401(k) match of \$4,600. Mr. Kisling received reimbursements under our Executive

Health Care Plan in the amount of \$2,009 and an employer 401(k) match of \$4,600. Ms. Egan received \$2,059 under our Executive Health Care Plan and an employer 401(k) match of \$3,500.

2013 Grants of Plan-Based Awards Table

The following table sets forth information with respect to grants of plan-based awards during the 2013 fiscal year that ended December 28, 2013, to each of the named executive officers.

GRANTS OF PLAN BASED AWARDS TABLE

For Fiscal Year 2013

Name	Grant Date	Estimated Future Payouts Under Non-Equity Incentive Plan Awards ⁽¹⁾		Maximum (\$)	All Other Stock Awards:	All Other Option Awards:	Exercise Price of Option or Base Price of Awards	Grant Date Fair value Of Stock And Options Awards (\$) ⁽³⁾
		Threshold (\$)	Target (\$)		Number of Shares of Stock or Units (#) ⁽²⁾	Number Of Securities Underlying Options (#)		
Dr. Timothy J. Stultz		\$0	\$465,000	\$930,000				
	3/12/2013				60,000			\$951,000
	3/12/2013					60,000	\$15.85	\$542,106
Bruce A. Crawford		\$0	\$242,550	\$485,100				
	3/12/2013				20,000			\$317,000
	3/12/2013					20,000	\$15.85	\$180,702
Ronald W. Kisling		\$0	\$173,250	\$346,500				
	3/12/2013				13,000			\$206,050
	3/12/2013					13,000	\$15.85	\$117,456
Nancy E. Egan		\$0	\$92,000	\$184,000				
	3/12/2013				10,000			\$158,500
	3/12/2013					10,000	\$15.85	\$90,351

(1) Please refer to 2013 Executive Performance Bonus Plan description on page 15.

(2) All referenced restricted stock units vest in equal annual installments over a 3 year period.

(3) Amounts shown do not reflect compensation actually received by the named executive officer. Instead, the amounts shown are the aggregate fair value of equity awards granted for financial statement reporting purposes, as determined pursuant to ASC Topic 718. The assumptions used to calculate the value of the options are set forth under Note 16 of the Notes to Consolidated Financial Statements included in Nanometrics' Annual Report on Form 10-K for the fiscal year ended December 28, 2013, filed with the SEC on March 7, 2014.

Narrative Disclosure to Summary Compensation Table and Grants of Plan-Based Awards Table

Our 401(k) savings plan allows employees to contribute up to 100% of their annual compensation to the plan on a pre-tax or after-tax basis, limited to a maximum annual amount as set periodically by the Internal Revenue Service.

The plan provides a 20% match by Nanometrics of all employee contributions.

In the 2013 fiscal year, all corporate officers and non-employee directors were eligible to participate in a Nanometrics self-funded Executive Reimbursement Plan (which plan was previously administered by Phillips Administrative Services, and is currently administered by Benefit and Risk Management Services). This plan is intended to supplement our basic health plan by reimbursing expenses that are not covered by our health plan. Dr. Stultz is also entitled to a car allowance. Attributed costs of the perquisites described above for the named executive officers for the fiscal year ended December 28, 2013, are included in the "Summary Compensation Table" on page 20. All such perquisites are taxable to the executive and included as a portion of such executive's wages.

Outstanding Equity Awards at Fiscal 2013 Year End

The following table sets forth the number of shares covered by both exercisable and un-exercisable stock options held by each of the named executive officers at the end of the fiscal year which ended December 28, 2013.

Name	Grant Date	Option Awards Number of Securities Underlying Unexercised Options (#)		Option Exercise Price (\$)	Option Expiration Date	Stock Awards	
		Exercisable	Unexercisable			Number of Shares or Units of Stock that have not Vested (#)	Market Value of Shares or Units of Stock That have Not Vested (\$) ⁽¹⁾
Dr. Timothy J. Stultz	3/12/2013 ⁽²⁾					60,000	\$1,116,600
	2/17/2012 ⁽²⁾					13,333	\$248,127
	3/12/2013 ⁽⁴⁾	11,250	48,750	\$15.85	3/12/2020		
	2/17/2012 ⁽⁴⁾	22,916	27,084	\$19.03	2/17/2019		
	11/16/2010 ⁽⁴⁾	86,666	27,500	\$11.37	11/16/2017		
	11/17/2009 ⁽⁶⁾	45,834	0	\$13.08	11/17/2016		
	11/19/2008 ⁽⁶⁾	33,334	0	\$0.98	11/19/2015		
	8/29/2007 ⁽⁷⁾	58,166	0	\$7.35	8/29/2014		
Bruce. A. Crawford	3/12/2013 ⁽²⁾					20,000	\$372,200
	2/17/2012 ⁽²⁾					6,666	\$124,054
	3/12/2013 ⁽⁴⁾	3,750	16,250	\$15.85	3/12/2020		
	2/17/2012 ⁽⁴⁾	11,458	13,542	\$19.03	2/17/2019		
	11/16/2010 ⁽⁴⁾	2,709	14,896	\$11.37	11/16/2017		
	11/17/2009 ⁽⁶⁾	12,500	0	\$13.08	11/17/2016		
	9/3/2009 ⁽⁸⁾	3,443	0	\$7.50	9/3/2016		
	2/25/2009 ⁽⁶⁾	1,667	0	\$1.17	2/25/2016		
Mr. Ronald Kisling	3/12/2013 ⁽²⁾					13,000	\$241,930
	2/17/2012 ⁽²⁾					3,333	\$62,027
	3/14/2011 ⁽³⁾					5,000	\$93,051
	3/12/2013 ⁽⁴⁾	2,437	10,563	\$15.85	3/12/2020		
	2/17/2012 ⁽⁴⁾	5,729	6,771	\$19.03	2/17/2019		
	3/14/2011 ⁽⁵⁾	20,625	9,375	\$16.16	3/14/2018		
Ms. Nancy E. Egan	3/12/2013 ⁽²⁾					10,000	\$186,100
	11/14/2011 ⁽²⁾					1,666	\$31,004
	3/12/2013 ⁽⁴⁾	1,875	8,125	\$15.85	3/12/2020		
	11/14/2011 ⁽⁵⁾	10,416	9,584	\$17.23	11/14/2018		

(1) The closing market price of Nanometrics common stock on December 27, 2013, the last trading day of our 2013 fiscal year, was \$18.61 per share.

(2) Restricted stock units vest annually over three years on each anniversary of the grant date.

(3) Restricted stock units vest annually over four years on each anniversary of the grant date.

(4) Options vest in equal monthly installments over a total of four years and have a term of seven years

(5) Mr. Kisling and Ms. Egan each received an award of stock options in connection with their respective hiring that vested and became exercisable 1/4th on the first anniversary of their hire dates, and in equal monthly installments over

the remaining three years.

(6) Options vest in equal monthly installments over a total of three years and have a term of seven years.

(7) Dr. Stultz received a stock option award of 200,000 options in connection with his hiring that vested and became exercisable 1/3rd on the first anniversary of his hire date, and in equal monthly installments over the remaining two years. This grant has a term of seven years.

(8) Mr. Crawford had 16,425 options cancelled and re-granted in connection with our stock option exchange in fiscal year 2009. The re-granted options vested and became exercisable 1/3rd immediately, and in equal monthly installments over the remaining two years.

Option Exercises and Stock Vested Table

The following table shows all stock options exercised and value realized upon exercise, and all stock awards vested and value realized upon vesting, by the named executive officers during the 2013 fiscal year that ended December 28, 2013.

OPTION EXERCISES AND STOCK VESTED
FOR FISCAL YEAR 2013

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 (\$)
Dr. Timothy J. Stultz ^{(1), (3)}	8,500	\$90,399	6,667	\$97,338
Bruce Crawford ^{(2), (3)}	47,395	\$291,479	3,334	\$48,676
Ronald Kisling ^{(3), (4)}			4,167	\$64,063
Nancy Egan ⁽⁵⁾			1,667	\$30,973

(1) Represents the following options exercises by Dr. Stultz:

Exercise Date	Number of Shares	Exercise Price	Sale Price	Value Realized on Sale
12/3/2013	4,292	\$7.35	\$18.00	\$45,710
12/2/2013	4,208	\$7.35	\$17.97	\$44,689
	8,500			\$90,399

(2) Represents the following options exercises by Mr. Crawford:

Exercise Date	Number of Shares	Exercise Price	Sale Price	Value Realized on Sale
11/4/2013	47,395	\$11.37	\$17.52	\$291,479

(3) Represents 6,667, 3,334 and 1,667 RSU's released on February 17, 2013 for Dr. Stultz and Messrs. Crawford and Kisling, respectively. The fair market value was \$14.60 per share.

(4) Represents 2,500 RSU's released on March 14, 2013. The fair market value was \$15.89 per share.

(5) Represents RSU's released on October 31, 2013. The fair market value was \$18.58 per share.

Employment Contracts and Termination of Employment and Change in Control Arrangements

In February 2010, Nanometrics entered into amended executive severance agreements with each of Dr. Stultz and Mr. Crawford. In March 2011 and October 2011, Nanometrics entered into executive severance agreements with Mr. Kisling and Ms. Egan, respectively. The agreements each provide that, in the event of the officer's termination without cause or resignation for good reason within 12 months of a change of control, he or she will receive (i) a payment equal to his or her then-current annual base salary, (ii) a payment equal to the most recent bonus he or she actually received, (iii) subject to his or her satisfaction of certain eligibility requirements, reimbursement of COBRA premiums for a period of one year, and (iv) acceleration of all of his or her outstanding unvested shares; provided that the maximum amount that he or she is entitled to receive under (i) above (base salary severance) and (ii) above (bonus severance, not including equity vesting acceleration) may not exceed two times his or her then-current base salary, calculated on a pre-tax basis.

In addition, the agreement with Dr. Stultz further provides that, in the event of his termination without cause not in connection with a change in control, Dr. Stultz will receive (i) his then-current base salary and any accrued or earned bonus, paid on normal paydays for a period of six months, and (ii) subject to his satisfaction of certain eligibility requirements, reimbursement of COBRA premiums for a period of six months. The agreement with Mr. Crawford further provides that, in the event of his termination without cause or resignation for good reason not in connection

with a change in control, Mr. Crawford will receive (i) his then-current annual base salary on normal paydays for a period of six months, (ii) subject to his satisfaction of certain eligibility requirements, reimbursement of COBRA premiums for a period of one year, and (iii) acceleration of the portion of his unvested equity compensation awards that would have vested if his termination had occurred on the first anniversary of such termination date. In all cases, in exchange for receiving benefits, the executive officer will be subject to non-compete, non-solicitation, and non-disparagement restrictions, and is required to execute a full release and waiver of any claims against Nanometrics. In addition, under the terms of our 2005 Equity Incentive Plan, in the event of a merger or change in control in which outstanding stock options or restricted stock units held by the named executive officers are not assumed or substituted with stock options or restricted stock units of the surviving company, such awards will vest and become fully exercisable or payable.

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The table below estimates amounts payable upon a separation as if the individuals were separated on December 28, 2013, which was the last business day of our 2013 fiscal year.

		Not in connection with Change in Control Termination Without Cause/Good Reason (\$)	In Connection with Change in Control Termination Without Cause For Good Reason Or Due to Disability or Death (\$)	
Timothy J. Stultz	Severance pay	\$232,500	\$465,000	
	Equity vesting acceleration ⁽¹⁾	\$0	\$1,698,377	
	Bonus	\$69,750	\$139,500	
	Health care benefits continuation	\$9,255	\$18,510	
		\$311,505	\$2,321,387	(2)
Bruce A. Crawford	Severance pay	\$173,250	\$346,500	
	Equity vesting acceleration ⁽¹⁾	\$33,873	\$648,951	
	Bonus	\$0	\$72,765	
	Health care benefits continuation	\$27,072	\$27,072	
		\$234,195	\$1,095,288	(2)
Ronald W. Kisling	Severance pay	\$0	\$315,000	
	Equity vesting acceleration ⁽¹⁾	\$0	\$449,130	
	Bonus	\$0	\$51,975	
	Health care benefits continuation	\$0	\$10,161	
		\$0	\$826,266	(2)
Nancy E. Egan	Severance pay	\$0	\$230,000	
	Equity vesting acceleration ⁽¹⁾	\$0	\$252,755	
	Bonus	\$0	\$27,600	
	Health care benefits continuation	\$0	\$10,161	
		\$0	\$520,517	(2)

(1) Represents the estimated potential incremental value of additional stock options and restricted stock units that would have vested for our named executive officers as of December 28, 2013. For stock options, the value is based on the difference between the aggregate exercise price of all accelerated options and the aggregate market value of the underlying shares as of December 28, 2013 calculated based on the closing market price of our stock on December 27, 2013 the last trading day of our fiscal year (\$18.61). Accelerated restricted stock unit award value is calculated by multiplying the number of accelerated shares by the closing price of our stock on December 27, 2013 (\$18.61).

(2) The change of control agreements provide that payments to the executive representing base pay and bonus upon change of control may not exceed 2 times the executive's annual base salary.

Compensation of Directors

During the 2013 fiscal year, non-employee directors received an annual retainer fee of \$50,000. In addition, the Chairman of the Board, Audit Committee Chairman, Compensation Committee Chairman and Nominating and Governance Committee Chairman received an incremental \$30,000, \$20,000, \$20,000 and \$10,000 annual retainer, respectively, for serving in such capacities. Committee members, other than the chairpersons, received an incremental \$10,000 annual retainer for service on the Audit or Compensation Committee and an incremental \$7,500 annual

retainer for service on the Nominating and Governance Committee. In addition, the non-employee director serving as the Chairman of the Scientific Advisory Board received an incremental annual retainer of \$10,000. All retainer fees are paid annually, as of the date of our annual stockholders meeting, and in advance of the provision of services to which the retainer relates.

Non-employee directors are also eligible to participate in our 2005 Equity Incentive Plan, and in fiscal year 2013, each such director received equity incentives, issued in restricted stock units, valued at \$100,000. We calculated the value of such equity incentives using the closing market price of our stock on the NASDAQ Stock Market as of the date of our annual stockholders meeting. These awards vest on the earlier of the first anniversary date of the grant or the date of the next annual meeting of stockholders.

Any new non-employee director will be eligible to receive equity incentives valued at \$100,000 issued in restricted stock units and pro-rated to reflect the amount of time served before the next annual meeting of stockholders.

If a director ceases to serve as a member of Nanometrics' Board, a portion of the fees shall be refunded and equity awards shall be forfeited on a pro-rated basis.

Non-employee directors are eligible to participate in Nanometrics' self-funded Executive Reimbursement Plan, which is intended to supplement our basic health plan by reimbursing expenses that are not covered by our health plan. All such reimbursements are considered taxable income to our non-employee directors.

2013 Director Compensation Table

The following table sets forth information regarding the compensation for each of our non-employee directors for the 2013 fiscal year that ended December 28, 2013. Nanometrics' non-employee director compensation program for the 2013 fiscal year comprised: (a) cash compensation, consisting of annual retainer fees, additional fees for chairing Board committees, additional fees for serving as a committee member and (b) equity compensation, consisting of restricted stock units. Each of these components is detailed below.

DIRECTOR COMPENSATION FOR FISCAL YEAR 2013

	Fees Earned or Paid in Cash (\$)	Stock Awards \$(^{(1),(2)})	All Other Compensation \$(⁽³⁾)	Total (\$)
Bruce C. Rhine ⁽⁴⁾	\$100,000	\$109,841	\$3,697	\$213,537
Howard A. Bain III ⁽⁵⁾	\$77,500	\$109,841	\$28,599	\$215,940
J. Thomas Bentley ⁽⁶⁾	\$70,000	\$109,841	\$5,058	\$184,898
Edward Brown Jr. ⁽⁷⁾	\$60,000	\$109,841	\$0	\$169,841
Mr. Stephen Newberry ⁽⁸⁾	\$77,500	\$109,841	\$0	\$187,341
William G. Oldham, Ph.D. ⁽⁹⁾	\$57,500	\$109,841	\$0	\$167,341

(1) Amounts shown do not reflect compensation actually received by the named director. Instead, the amounts shown are the aggregate grant date fair value calculated for financial statement reporting purposes, as determined pursuant to Accounting Standards Codification ("ASC") Topic 718, but excluding any effect of any estimated forfeitures. The assumptions used to calculate the value of awards are set forth under Note 16 of the Notes to Consolidated Financial Statements included in Nanometrics' Annual Report on Form 10-K for fiscal 2013 filed with the SEC on March 7, 2014.

(2) On May 24, 2013, each non-employee director received a restricted stock unit award in the amount of 6,930 shares of common stock. All RSU's vest one year from the first anniversary date of said award. The fair market value for these RSU's was \$15.85 per share on the date of grant.

(3) Representing health care reimbursements extended to Directors.

(4) At December 28, 2013, Mr. Rhine had 126,188 outstanding options to purchase shares of common stock and 6,930 unvested restricted stock units

(5) At December 28, 2013, Mr. Bain had 17,975 outstanding options to purchase shares of common stock and 6,930 unvested restricted stock units

(6) At December 28, 2013, Mr. Bentley had 19,068 outstanding options to purchase shares of common stock and 6,930 unvested restricted stock units

(7) At December 28, 2013, Mr. Brown had 6,930 unvested restricted stock units

(8) At December 28, 2013, Mr. Newberry had 7,604 outstanding options to purchase shares of common stock and 6,930 unvested restricted stock units

(9) At December 28, 2013, Dr. Oldham had 24,066 outstanding options to purchase shares of common stock and 6,930 unvested restricted stock units

COMPENSATION COMMITTEE INTERLOCKS AND INSIDER PARTICIPATION

During the 2013 fiscal year, the Compensation Committee consisted of Stephen G. Newberry (who became the Chairman on May 24, 2013), J. Thomas Bentley, and for part of the year, Edward J. Brown Jr. (who joined the Compensation Committee on May 24, 2013) and William G. Oldham (who left the Compensation Committee on May 24, 2013). None of Nanometrics' executive officers serves as a member of the board of directors or compensation committee of any entity that has one or more executive officers serving as a member of Nanometrics' Board or Compensation Committee.

PROPOSAL 2

ADVISORY (NON-BINDING) VOTE ON EXECUTIVE COMPENSATION

At the 2011 Annual Meeting of Stockholders, the stockholders indicated their preference that Nanometrics solicit a non-binding advisory vote on the compensation of the named executive officers, commonly referred to as a “say-on-pay” vote, every year. The Board of Directors has adopted a policy that is consistent with that preference. In accordance with this policy, this year we are again requesting our stockholders to approve an advisory resolution on Nanometrics’ executive compensation as reported in this Proxy Statement, and as required by Section 14A(a)(1) of the Exchange Act. This vote is not intended to address any specific item of compensation, but the overall compensation of our named executive officers and the philosophy, policies and practices described in this Proxy Statement.

As described more fully in the Compensation Discussion and Analysis section and other compensation-related disclosures in the proxy statement, consistent with its compensation philosophy and pay-for-performance principles, Nanometrics’ executive compensation program has been designed to provide competitive compensation packages that enable Nanometrics to attract and retain talented executives, motivate executive officers to achieve Nanometrics’ short- and long-term business strategies and objectives, and align the interests of executives with those of stockholders, and are consistent with current market practices and good corporate governance principles.

We encourage you to read the Compensation Discussion and Analysis, compensation tables and related narrative discussion in this Proxy Statement.

The Compensation Committee and the Board of Directors believe that the policies and procedures articulated in the “Compensation Discussion and Analysis” are effective in achieving our goals and that the compensation of our named executive officers reported in this Proxy Statement has contributed to our recent and long-term success.

In accordance with Section 14A of the Exchange Act, as a matter of good corporate governance, and in accordance with the policy adopted by the Board of Directors to provide an annual “say-on-pay” advisory vote, we are asking stockholders to approve the following advisory resolution at the annual meeting:

RESOLVED, that the stockholders of Nanometrics Incorporated (the “Company”) approve, on an advisory basis, the compensation of Nanometrics’ named executive officers disclosed in the Compensation Discussion and Analysis, the Summary Compensation Table and the related compensation tables, notes and narratives in the Proxy Statement for Nanometrics’ 2014 Annual Meeting of Stockholders.

This advisory, “say-on-pay” resolution is non-binding on Nanometrics, the Compensation Committee and the Board of Directors. Although this resolution is non-binding, the Compensation Committee and the Board of Directors value the opinions that stockholders express in their votes and in any additional dialogue, and will review and consider the outcome of the vote and those opinions when making future compensation decisions.

THE BOARD OF DIRECTORS UNANIMOUSLY RECOMMENDS THAT STOCKHOLDERS VOTE “FOR” THE ADVISORY RESOLUTION APPROVING THE COMPANY’S EXECUTIVE COMPENSATION.

PROPOSAL 3
 RATIFICATION OF APPOINTMENT OF
 INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

The Audit Committee of the Board of Directors has appointed PricewaterhouseCoopers LLP as our independent registered public accounting firm to audit the consolidated financial statements of Nanometrics for the fiscal year ending December 27, 2014.

Approval by the stockholders of the selection of the independent registered public accounting firm is not required, but the Audit Committee believes it is desirable as a matter of good corporate governance to submit this matter to the stockholders. If the holders of a majority of the shares present in person or by proxy at the meeting and entitled to vote on the matter at the annual meeting do not ratify the appointment of PricewaterhouseCoopers LLP as Nanometrics' independent registered public accounting firm for the fiscal year ending December 27, 2014, the Audit Committee will consider whether it should select another independent registered public accounting firm. Representatives of PricewaterhouseCoopers LLP are expected to attend the annual meeting and will have an opportunity to make a statement and respond to appropriate questions from stockholders.

Audit Fees

The following table summarizes the aggregate fees that we paid or expect to pay our independent registered public accounting firm, PricewaterhouseCoopers LLP, for the 2013 and 2012 fiscal years.

	Fiscal 2013	Fiscal 2012
Audit Fees ⁽¹⁾	\$1,043,581	\$891,606
Audit-Related Fees ⁽²⁾	--	3,186
Tax Fees ⁽³⁾	11,472	7,964
All Other Fees ⁽⁴⁾	1,800	1,800
Total	\$1,056,853	\$904,556

(1) Fees to PricewaterhouseCoopers LLP in 2013 and 2012 for audit services consist of:

- Audit of our annual financial statements including management's assessment of internal controls over financial reporting;
- Reviews of our quarterly financial statements; and
- Statutory and regulatory audits, consents and other services.

(2) These fees comprised of audit-related services not required by statutes or regulations.

(3) These fees comprised of tax services for UK tax filings.

(4) Paid to PricewaterhouseCoopers LLP for accounting research and database tool.

In considering the nature of the services provided by the independent registered public accounting firm, the Audit Committee determined that such services are compatible with the provision of independent audit services. The Audit Committee discussed these services with the independent registered public accountants and our management to determine that they are permitted under the rules and regulations concerning auditors' independence promulgated by the Securities and Exchange Commission to implement the Sarbanes-Oxley Act of 2002, as well as the American Institute of Certified Public Accountants.

Audit Committee Pre-Approval Policy

Pursuant to our Audit Committee charter, our Audit Committee must pre-approve all audit and permissible non-audit services, and the related fees, provided to us by our independent registered public accounting firm, or subsequently approve permissible non-audit services in those circumstances where a subsequent approval is necessary and permissible under the Exchange Act or the rules of the Securities and Exchange Commission. The policy generally pre-approves specified services in the defined categories of audit services, audit-related services and tax services up to specified amounts. Pre-approval may also be given as part of the Audit Committee's approval of the scope of the engagement of the independent auditor or on an individual, explicit, case-by-case basis before the independent auditor is engaged to provide each service. The pre-approval of services may be delegated to one or more of the Audit Committee's members. Accordingly, the Audit Committee pre-approved all services and fees provided by

PricewaterhouseCoopers LLP, during the year ended December 28, 2013, and has concluded that the provision of these services is compatible with the accountants' independence.

Report of the Audit Committee of the Board of Directors*

The Audit Committee reviews Nanometrics' financial reporting process on behalf of the Board of Directors. Management has the primary responsibility for establishing and maintaining adequate internal control over financial reporting, for preparing the financial statements and for the reporting process. The Audit Committee members do not serve as professional accountants or auditors, and their functions are not intended to duplicate or to certify the activities of management and the independent registered public accounting firm. Nanometrics' independent auditors are engaged to audit and report on the conformity of our financial statements to accounting principles generally accepted in the United States and the effectiveness of our internal control over financial reporting. In this context, the Audit Committee reviewed and discussed with management the audited financial statements of Nanometrics for the year ended December 28, 2013. The Audit Committee has discussed with the independent registered public accounting firm the matters required to be discussed by Auditing Standard No. 16, Communications with Audit Committees, as adopted by the Public Company Accounting Oversight Board ("PCAOB"). In addition, the Audit Committee has received the written disclosures and the letter from the independent registered public accounting firm required by applicable requirements of the PCAOB regarding the independent registered public accounting firm's communications with the Audit Committee concerning independence, and has discussed with the independent registered public accounting firm its independence. Based on the foregoing, the Audit Committee recommended to the Board of Directors that our audited financial statements as of and for the year ended December 28, 2013, be included in our Annual Report on Form 10-K for the fiscal year ended December 28, 2013, for filing with the United States Securities and Exchange Commission.

The Audit Committee

Howard A. Bain III, Chairman

J. Thomas Bentley

Bruce C. Rhine

The material in this report is not "soliciting material," is not deemed "filed" with the Securities and Exchange Commission and is not to be incorporated by reference in any filing of Nanometrics under the Securities Act or the Exchange Act, whether made before or after the date hereof and irrespective of any general incorporation language in any such filing.

THE BOARD OF DIRECTORS UNANIMOUSLY RECOMMENDS THAT STOCKHOLDERS VOTE "FOR" THE RATIFICATION OF THE APPOINTMENT OF PRICEWATERHOUSECOOPERS LLP, AS NANOMETRICS' INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM FOR THE FISCAL YEAR ENDING DECEMBER 27, 2014.

OTHER MATTERS

We know of no other matters to be submitted to the stockholders at the annual meeting. If any other matters properly come before the annual meeting, it is the intention of the persons named in the enclosed proxy card to vote the shares they represent as the Board of Directors may recommend.

BY ORDER OF THE BOARD OF DIRECTORS

/s/ Bruce C. Rhine
Bruce C. Rhine
Chairman of the Board of Directors
Milpitas, California
April 7, 2014

A copy of Nanometrics' Annual Report to the Securities and Exchange Commission on Form 10-K for the fiscal year ended December 28, 2013, is available on our website, www.nanometrics.com. A printed copy is also available without charge upon written request to: Investor Relations Department, Nanometrics, Inc., 1550 Buckeye Drive, Milpitas, California 95035.

