



Important proxy news

Your fund. Your vote.

An Important Message from Vanguard Chief Executive Officer F. William McNabb III



Dear fellow shareholder,

Thank you for placing your trust in Vanguard. Every dollar you invest with us is a sign of faith in our funds, our people, and our way of doing business. We work hard every day to earn and maintain that trust and to give all investors the best chance for investment success.

On behalf of the Boards of Trustees, I'm pleased to announce all Vanguard funds will hold a Joint Special Meeting of Shareholders on November 15, 2017, at the DoubleTree Paradise Valley in Scottsdale, Arizona. All shareholders have an opportunity to vote on proposals that affect their funds. **Your vote is very important. I urge you to review the enclosed information carefully and then vote either by Internet, mail, phone, or in person at the meeting.**

An important part of the proxy statement is a proposal to elect trustees for all Vanguard funds. These nominees have been selected for their experience, judgment, and integrity. They clearly understand their responsibility to represent your interests in the boardroom. There are only two Vanguard employees who are nominees; myself and Mortimer (Tim) J. Buckley, who will succeed me as CEO when I retire from

my role in January 2018. All other nominees, eight of whom currently serve as trustee to each fund and two new nominees, are independent of Vanguard, including the nominee who currently serves as lead trustee.

Many of the enclosed proposals involve updating and harmonizing your funds' investment policies to help Vanguard manage your funds more efficiently and effectively. Specific proposals related to the REIT Index Fund, Variable Insurance Fund—REIT Index Portfolio, Institutional Index Fund, and Institutional Total Stock Market Index Fund are also included. The trustees recommend you vote in favor of these proposals.

We also have included a proposal submitted by shareholders of certain funds. The trustees have reviewed this proposal carefully and recommend voting against it because it is not in the best interest of long-term shareholders. A detailed rationale for our recommendation with respect to this proposal is enclosed.

I ask you to vote as soon as possible. Every shareholder matters, and we want to hear from you. Thank you for taking the time to review the enclosed proposals and for your participation in this important process.

Sincerely,

F. William McNabb, III
Chairman and CEO
August 17, 2017

Important Information About Voting

Why am I being asked to vote?

Because your vote makes a difference. If many shareholders choose not to vote, the funds might not receive enough votes to reach quorum and conduct the shareholder meeting in November. If that appears likely to happen, the funds will have to send additional mailings to shareholders to try to get more votes—a process that would be very costly for the funds and thus for you as a fund shareholder.

What's the deadline for submitting my vote?

We encourage you to vote *as soon as possible* to make sure that your fund receives enough votes to act on the proposals. The final opportunity to cast your vote is at the shareholder meeting on November 15, 2017.

Who gets to vote?

Any person who owned shares of a Vanguard fund on the “record date,” which was August 16, 2017, even if that person sold those shares at a later date.

How do I vote?





You may vote in any of four ways:

1. Through the **Internet** at the website listed on the enclosed proxy card or voting instruction card.
2. By **telephone**, with a toll-free call to the phone number listed on the enclosed proxy card or voting instruction card.
3. By **mail**, with the enclosed proxy card or voting instruction card.
4. **In person** at the shareholder meeting in Scottsdale, Arizona, on November 15, 2017.

We encourage you to vote through the Internet or by telephone using the voting control number and security code that appear on your proxy card or the voting control number that appears on your voting instruction card. These voting methods will save your fund money (since they do not require return postage). If you would like to change your previous vote, you may do so using any of the methods described above.

How do I sign the proxy card?

You should sign your name exactly as it appears on the enclosed proxy card or voting instruction card. Unless you have instructed us otherwise, either owner of a joint account may sign the card, but again, the owner must sign the name exactly as it appears on the card. The proxy card or voting instruction card for other types of accounts should be signed in a way that indicates the signer's authority—for example, “John Brown, Custodian.”

 Vote on the Internet Through the Internet at the website listed on your proxy card or voting instruction card. Follow the on-screen instructions.	 Vote by phone Call the phone number listed on your proxy card or voting instruction card. Follow the recorded instructions available 24 hours.	 Vote by mail Vote, sign, and date the proxy card or voting instruction card and return it using the postage-paid envelope.	 Vote in person Attend the Shareholder Meeting at the DoubleTree Paradise Valley Scottsdale, 5401 N. Scottsdale Rd., Scottsdale, Arizona 85250 on November 15, 2017.
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The Vanguard Funds¹

Notice of Joint Special Meeting of Shareholders

All Vanguard funds will host a Joint Special Meeting of Shareholders on Wednesday, November 15, 2017, at 8:00 a.m., local Arizona time, at the DoubleTree Paradise Valley Scottsdale, 5401 N. Scottsdale Rd., Scottsdale, Arizona 85250. This joint special meeting of the Vanguard funds is being held so that shareholders can vote on Vanguard's proposals to:

1. Elect Trustees for each fund.
2. Approve a manager of managers arrangement with third-party investment advisors.
3. Approve a manager of managers arrangement with wholly-owned subsidiaries of Vanguard.
4. Change the investment objective of Vanguard REIT Index Fund and Vanguard Variable Insurance Fund-REIT Index Portfolio.
5. Reclassify the diversification status of Vanguard REIT Index Fund to nondiversified.
6. Adopt the Funds' Service Agreement for Vanguard Institutional Index Fund and Vanguard Institutional Total Stock Market Index Fund.

Also, shareholders of certain funds will be asked to consider a proposal submitted by one or more shareholders to:

7. Institute transparent procedures to avoid holding investments in companies that, in management's judgement, substantially contribute to genocide or crimes against humanity, the most egregious violations of human rights. Such procedures may include time-limited engagement with problem companies if management believes that their behavior can be changed.

By Order of the Boards of Trustees,
Anne E. Robinson, Secretary
August 17, 2017

YOUR VOTE IS IMPORTANT

You can vote easily and quickly over the Internet, by calling a toll-free phone number, or by mail. Just follow the simple instructions that appear on your enclosed proxy card or voting instruction card. *Please help your fund avoid the expense of a follow-up mailing by voting today.*

¹ Please see Part V of this booklet for an alphabetical list of all Vanguard funds.

The Vanguard Funds

Joint Special Meeting of Shareholders November 15, 2017

PROXY STATEMENT

Introduction

This combined proxy statement is being provided to you on behalf of the boards of trustees of all Vanguard funds. We have divided the proxy statement into five main parts:

- Part I An Overview of the Proposals** begins on page 1.
- Part II Proposal Details** begins on page 3.
- Part III Information on the Funds' Independent Accountants** begins on page 55.
- Part IV More on Proxy Voting and Shareholder Meetings** begins on page 58.
- Part V Fund and Investment Advisor Information** begins on page 61.

Please read the proxy statement before voting on the proposals. If you have questions about the proxy statement, or if you would like additional information, please call Computershare toll-free at 866-963-5746. This proxy statement was mailed to shareholders beginning on August 17, 2017.

Annual and Semiannual Reports. Each fund's most recent annual and semiannual reports to shareholders are available at no cost. You may read, print, or request mail delivery of a copy through our website at www.vanguard.com. You may also request a report by calling us toll-free at 800-662-7447 or by writing to us at P.O. Box 2600, Valley Forge, PA 19482-2600. Participants in an employer-sponsored 401(k) or other retirement plan administered by Vanguard should call us at 800-523-1188.

ATTENTION: Vanguard Variable Insurance Fund Shareholders

You have the right to instruct your annuity provider how to vote the Vanguard Variable Insurance Fund shares held under your plan. You can issue voting instructions for these shares over the Internet, by calling a toll-free phone number, or by mail. Just follow the simple instructions that appear on your enclosed voting instruction card. *Note that your annuity provider will "shadow vote" any fund shares for which contract owners fail to provide voting instructions.* This means that the uninstructed shares will be voted in proportionately the same manner—either "For," "Against," or "Abstain"—as the instructed shares.

Part I An Overview of the Proposals

Shareholders of the Vanguard funds are being asked to vote on a number of proposals. Not all proposals apply to each fund. The table below shows each proposal and the specific Vanguard funds to which it applies. Only shareholders of record as of August 16, 2017, are entitled to vote on a fund's proposals.

Vanguard Proposals	Vanguard Funds
1. Elect trustees for each fund.	Applies to all Vanguard funds.
2. Approve a manager of managers arrangement with third-party investment advisors.	Applies to all Vanguard funds EXCEPT: Alternative Strategies Fund; Capital Opportunity Fund; Capital Value Fund; Convertible Securities Fund; Core Bond Fund; Dividend Growth Fund; Emerging Markets Bond Fund; Emerging Markets Select Stock Fund; Energy Fund; Equity Income Fund; Explorer Fund; Explorer Value Fund; Global Equity Fund; Global Minimum Volatility Fund; GNMA Fund; Growth and Income Fund; Health Care Fund; High-Yield Corporate Bond Fund; Institutional Target Retirement 2065 Fund; International Explorer Fund; International Growth Fund; International Value Fund; Long-Term Investment-Grade Fund; Market Liquidity Fund; Market Neutral Fund; Mid-Cap Growth Fund; Morgan Growth Fund; Municipal Cash Management Fund; Precious Metals and Mining Fund; PRIMECAP Core Fund; PRIMECAP Fund; Selected Value Fund; Target Retirement 2065 Fund; U.S. Growth Fund; U.S. Value Fund; Ultra-Short-Term Bond Fund; Balanced Portfolio of the Variable Insurance Fund; Capital Growth Portfolio of the Variable Insurance Fund; Diversified Value Portfolio of the Variable Insurance Fund; Equity Income Portfolio of the Variable Insurance Fund; Growth Portfolio of the Variable Insurance Fund; High-Yield Bond Portfolio of the Variable Insurance Fund; International Portfolio of the Variable Insurance Fund; Small Company Growth Portfolio of the Variable Insurance Fund; Wellesley Income Fund; Wellington Fund; Windsor Fund; and Windsor II Fund.
3. Approve a manager of managers arrangement with wholly-owned subsidiaries of Vanguard.	Applies to all Vanguard funds.
4. Change the investment objective of REIT Index Fund and REIT Index Portfolio of the Variable Insurance Fund.	Applies to REIT Index Fund and REIT Index Portfolio of the Variable Insurance Fund.
5. Reclassify the diversification status of REIT Index Fund to nondiversified.	Applies to REIT Index Fund.

Vanguard Proposals (continued)	Vanguard Funds
6. Adopt the Funds' Service Agreement for Institutional Index Fund and Institutional Total Stock Market Index Fund.	Applies to Institutional Index Fund and Institutional Total Stock Market Index Fund.

Shareholder Proposal	Vanguard Funds
7. Institute transparent procedures to avoid holding investments in companies that, in management's judgement, substantially contribute to genocide or crimes against humanity, the most egregious violations of human rights. Such procedures may include time-limited engagement with problem companies if management believes that their behavior can be changed.	Applies to 500 Index Fund; Capital Opportunity Fund; Developed Markets Index Fund; Dividend Appreciation Index Fund; Emerging Markets Stock Index Fund; Energy Fund; Energy Index Fund; Equity Income Fund; European Stock Index Fund; Extended Market Index Fund; FTSE All-World ex-US Index Fund; FTSE Social Index Fund; GNMA Fund; Growth Index Fund; Health Care Fund; Inflation-Protected Securities Fund; Institutional Index Fund; Intermediate-Term Bond Index Fund; Intermediate-Term Treasury Fund; International Explorer Fund; International Growth Fund; International Value Fund; LifeStrategy Moderate Growth Fund; Long-Term Treasury Fund; Mid-Cap Index Fund; Mid-Cap Value Index Fund; Morgan Growth Fund; Municipal Money Market Fund; Pacific Stock Index Fund; Precious Metals and Mining Fund; Prime Money Market Fund; REIT Index Fund; Short-Term Bond Index Fund; Short-Term Tax-Exempt Fund; Short-Term Treasury Fund; Small-Cap Growth Index Fund; Small-Cap Index Fund; Small-Cap Value Index Fund; STAR Fund; Tax-Managed Small-Cap Fund; Total Bond Market Index Fund; Total International Stock Index Fund; Total Stock Market Index Fund; Value Index Fund; Balanced Portfolio of the Variable Insurance Fund; Wellington Fund; Windsor Fund; and Windsor II Fund.

Part II Proposal Details

Proposal 1— Elect Trustees for Each Fund

> This proposal applies to all Vanguard funds.

We are asking shareholders of each Vanguard fund to elect a board of trustees.

Who are the nominees to the board?

The twelve individuals listed below have been nominated for election as Vanguard fund trustees. If approved, the newly elected trustees would be serving together as the board, effective January 1, 2018. Ms. Gutmann, Ms. Heisen, and Messrs. Fullwood, Loughrey, Loughridge, Malpass, McNabb, Perold, and Volanakis currently serve as trustees for all 195 Vanguard funds and are also nominees for trustee for all of the funds. Mr. Buckley, Ms. Mulligan, and Ms. Raskin have not previously served as trustees, but are nominees for trustee for all of the funds. Each nominee also serves as a director of The Vanguard Group, Inc. (Vanguard), and each has consented to continue serving (or, in the case of Mr. Buckley, Ms. Mulligan, and Ms. Raskin, begin serving) as a trustee for the funds if elected by shareholders. The mailing address of the Vanguard funds' trustees and officers is P.O. Box 876, Valley Forge, PA 19482.

Nominees	Principal Occupation(s) and Outside Directorships
<i>Interested Trustees</i>	
Mortimer J. Buckley²	
Born 1969 Nominee	Mr. Buckley has served as President and Director of The Vanguard Group, Inc., since July 2017. Prior to this, Mr. Buckley served as Chief Investment Officer of Vanguard from 2013 to 2017, head of the Retail Investor Group from 2006 to 2012, and Chief Information Officer of Vanguard from 2001 to 2006. He also served as Chairman of the Board of The Children's Hospital of Philadelphia from 2011 to 2017.

² If elected as trustee of the Vanguard funds, Mr. Buckley will be considered an "interested person," as defined in the Investment Company Act of 1940, of each Vanguard fund because he also holds the position of president of Vanguard.

Nominees	Principal Occupation(s) and Outside Directorships
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Interested Trustees (continued)

F. William McNabb III³

Born 1957 Chairman of the Board of Trustees	Mr. McNabb has served as Chairman of the Board of The Vanguard Group, Inc., and of each of the investment companies served by Vanguard, since January 2010; Trustee of each of the investment companies served by Vanguard, since 2009; Director of Vanguard, since 2008; Chief Executive Officer of Vanguard and Chief Executive Officer and President of each of the investment companies served by Vanguard, since 2008; and President of Vanguard from 2008 to 2017. Mr. McNabb also serves as a Director of Vanguard Marketing Corporation. Mr. McNabb served as a Managing Director of Vanguard from 1995 to 2008 and has been a Vanguard funds trustee since July 2009.
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Independent Trustees

Emerson U. Fullwood

Born 1948 Trustee	Mr. Fullwood is the former Executive Chief Staff and Marketing Officer for North America and Corporate Vice President (retired 2008) of Xerox Corporation (document management products and services). Previous positions held by Mr. Fullwood at Xerox include President of the Worldwide Channels Group, President of Latin America, Executive Chief Staff Officer of Developing Markets, and President of Worldwide Customer Services. Mr. Fullwood is the Executive in Residence and 2009–2010 Distinguished Minett Professor at the Rochester Institute of Technology. Mr. Fullwood serves as Lead Director of SPX FLOW, Inc. (multi-industry manufacturing); as a Director of the University of Rochester Medical Center, Monroe Community College Foundation, the United Way of Rochester, North Carolina A&T University, and Roberts Wesleyan College; and as a Trustee of the University of Rochester. Mr. Fullwood has been a Vanguard funds trustee since January 2008.
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Amy Gutmann

Born 1949 Trustee	Dr. Gutmann has served as President of the University of Pennsylvania since 2004. She is the Christopher H. Browne Distinguished Professor of Political Science, School of Arts and Sciences, and Professor of Communication, Annenberg School for Communication, with secondary faculty appointments in the Department of Philosophy, School of Arts and Sciences, and at the Graduate School of Education, University of Pennsylvania. Dr. Gutmann also serves as a Trustee of the National Constitution Center. Dr. Gutmann has been a Vanguard funds trustee since June 2006.
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³ Mr. McNabb is considered an “interested person,” as defined in the Investment Company Act of 1940, because he is an officer of the Vanguard funds and because of his position at Vanguard.

Nominees	Principal Occupation(s) and Outside Directorships
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Independent Trustees (continued)

JoAnn Heffernan Heisen

Born 1950 Trustee	Ms. Heisen is the former Corporate Vice President of Johnson & Johnson (pharmaceuticals/medical devices/consumer products) and a former member of the Executive Committee (1997–2008). During her tenure at Johnson & Johnson, Ms. Heisen held multiple roles, including: Chief Global Diversity Officer (retired 2008), Vice President and Chief Information Officer (1997–2006), Controller (1995–1997), Treasurer (1991–1995), and Assistant Treasurer (1989–1991). Ms. Heisen serves as a Director of Skytop Lodge Corporation (hotels) and the Robert Wood Johnson Foundation and as a member of the Advisory Board of the Institute for Women’s Leadership at Rutgers University. Ms. Heisen has been a Vanguard funds trustee since July 1998.
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F. Joseph Loughrey

Born 1949 Trustee	Mr. Loughrey is the former President and Chief Operating Officer (retired 2009) and Vice Chairman of the Board (2008–2009) of Cummins Inc. (industrial machinery). Mr. Loughrey serves as Chairman of the Board of Hillenbrand, Inc. (specialized consumer services), Oxfam America, and the Lumina Foundation for Education; as a Director of the V Foundation for Cancer Research; and as a member of the Advisory Council for the College of Arts and Letters and Chair of the Advisory Board to the Kellogg Institute for International Studies, both at the University of Notre Dame. Mr. Loughrey has been a Vanguard funds trustee since October 2009.
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Mark Loughridge

Born 1953 Trustee	Mr. Loughridge is the former Senior Vice President and Chief Financial Officer (retired 2013) at IBM (information technology services). Mr. Loughridge also served as a fiduciary member of IBM’s Retirement Plan Committee (2004–2013). Previous positions held by Mr. Loughridge at IBM include Senior Vice President and General Manager of Global Financing (2002–2004), Vice President and Controller (1998–2002), and a variety of management roles. Mr. Loughridge serves as a Director of The Dow Chemical Company and as a member of the Council on Chicago Booth. Mr. Loughridge has been a Vanguard funds trustee since March 2012.
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Scott C. Malpass

Born 1962 Trustee	Mr. Malpass has served as Chief Investment Officer since 1989 and Vice President since 1996 at the University of Notre Dame. Mr. Malpass serves as an Assistant Professor of Finance at the Mendoza College of Business at the University of Notre Dame and is a member of the Notre Dame 403(b) Investment Committee. Mr. Malpass also serves as Chairman of the Board of TIFF Advisory Services, Inc., and on the board of Catholic Investment Services, Inc. (investment advisors); as a member of the board of advisors for Spruceview Capital Partners; and as a member of the Board of Superintendence of the Institute for the Works of Religion. Mr. Malpass has been a Vanguard funds trustee since March 2012.
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Nominees	Principal Occupation(s) and Outside Directorships
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Independent Trustees (continued)

Deanna Mulligan	
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Born 1963 Nominee	Ms. Mulligan has served as Chief Executive Officer since 2011 and President since 2010 of The Guardian Life Insurance Company of America. ⁴ Previous positions held by Ms. Mulligan since joining The Guardian Life Insurance Company of America in 2008 include Chief Operating Officer (2010–2011) and Executive Vice President of Individual Life and Disability (2008–2010). Ms. Mulligan serves as a Board Member of The Guardian Life Insurance Company of America, the American Council of Life Insurers, the Partnership for New York City (business leadership), and the Committee Encouraging Corporate Philanthropy; as a Trustee of the Economic Club of New York and the Bruce Museum (arts and science); and as a member of the Advisory Council for the Stanford Graduate School of Business.
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André F. Perold	
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Born 1952 Trustee	Dr. Perold is the George Gund Professor of Finance and Banking, Emeritus at the Harvard Business School (retired 2011). Dr. Perold serves as Chief Investment Officer and Co-Managing Partner of HighVista Strategies LLC (private investment firm). Dr. Perold also serves as an Overseer of the Museum of Fine Arts Boston. Dr. Perold has been a Vanguard funds trustee since December 2004.
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Sarah Bloom Raskin	
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Born 1961 Nominee	Ms. Raskin served as Deputy Secretary of the United States Department of the Treasury (2014–2017), as Governor of the Federal Reserve Board (2010–2014), and as Commissioner of Financial Regulation of the State of Maryland (2007–2010). Ms. Raskin also served as a member of the Neighborhood Reinvestment Corporation Board from 2012 to 2014.
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Peter F. Volanakis	
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Born 1955 Trustee	Mr. Volanakis is the retired President and Chief Operating Officer (retired 2010) of Corning Incorporated (communications equipment) and a former Director of Corning Incorporated (2000–2010) and of Dow Corning (2001–2010). Mr. Volanakis served as a Director of SPX Corporation (multi-industry manufacturing) in 2012 and as an Overseer of the Amos Tuck School of Business Administration at Dartmouth College from 2001 to 2013. Mr. Volanakis serves as Chairman of the Board of Trustees of Colby-Sawyer College and is a Member of the Board of Hypertherm Inc. (industrial cutting systems, software, and consumables). Mr. Volanakis has been a Vanguard funds trustee since July 2009.
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⁴ Guardian Life provides group insurance and administrative services for employee benefits such as group life, dental, vision, and disability coverage to two advisors, each of which manages one or more of the Vanguard funds. Amounts paid by these advisors to Guardian Life for such insurance and services were less than 0.006% of Guardian Life's premium revenues in each of 2015 and 2016. Park Avenue Securities (PAS) is an indirect, wholly-owned subsidiary of Guardian Life and a dually registered broker-dealer and investment adviser. From time to time, PAS receives payments related to the sale of certain non-Vanguard mutual funds advised by firms that also advise certain Vanguard funds. In 2016, these payments amounted to less than 0.15% of PAS' revenues and PAS' earnings comprised less than 1% of Guardian Life's pre-tax earnings. Deanna Mulligan is not an officer or director of PAS.

Why are fund shareholders being asked to elect trustees?

Federal law requires that shareholders elect a fund's board of trustees under certain circumstances. As a general matter, a fund's board of trustees may fill vacancies as long as immediately after the board fills the vacancy, at least two-thirds of the trustees were elected by shareholders. The ability to appoint new trustees is important because without it the funds would have to hold expensive shareholder meetings for each new trustee. Mr. Buckley, Ms. Mulligan, and Ms. Raskin, each of whom has served as a Vanguard director since July 2017, are currently nominees for trustee of each of the Vanguard funds, and none of them could be added to the funds' boards without exceeding the two-thirds requirement. Accordingly, now is an appropriate time to hold an election.

How many of the nominees will be "independent" trustees if elected?

Ten of the twelve nominees—all but Mr. McNabb and Mr. Buckley—will be independent trustees if elected by shareholders. Independent trustees have no affiliation with Vanguard or the funds they oversee, apart from any personal investments they choose to make in the funds as private individuals. Independent trustees play a critical role in overseeing fund operations and representing the interests of each fund's shareholders.

How are the boards of the Vanguard funds structured?

The Vanguard funds are grouped into 37 separate trusts. Each of these trusts is made up of one or more Vanguard funds (which are sometimes called a "series" of the trust). Funds that are part of the same trust elect their trustees on a joint basis.

Part V of this booklet includes an alphabetical list of Vanguard funds that specifies the trust of which each fund is a series and provides a variety of other details about the funds.

The same individuals currently serve as trustees for all of the Vanguard funds. There are important benefits in having the board of each fund include trustees who serve on the boards of the other Vanguard funds. Service on multiple fund boards gives the trustees greater familiarity with operations that are common to all Vanguard funds. Such service also permits the trustees to address common issues on a knowledgeable and consistent basis. It also avoids the substantial additional costs, administrative complexities, and redundancies that would result from having a different board of trustees for every Vanguard fund.

While there are many areas of common interest among the funds, the trustees recognize that they are responsible for exercising their responsibilities at all times on a fund-by-fund basis.

What is the board's leadership structure?

The trustees have elected Mr. McNabb as the Chairman of the Board. Because Mr. McNabb is not independent, and in order to ensure the appropriate level of independent leadership on the board, the independent trustees have elected Mr. Loughridge as the lead independent trustee. In this capacity, Mr. Loughridge is responsible for coordinating meeting agendas with the chairman, serving as a spokesperson and point of contact for the independent directors, chairing meetings of the independent directors (including committee meetings), and leading the independent directors in executive session (without management present).

How long will each trustee serve?

If elected, each trustee will serve until he or she resigns, retires, or is removed from the board as provided in the fund's governing documents. The trustees believe that, as a general matter, each trustee should retire from the board no later than the end of the year in which the trustee attains age 72. However, the trustees believe that a majority of the Independent Trustees should be permitted to allow any Independent Trustee who attains age 72 to continue to serve on the board for a temporary period (not to exceed one year) if exceptional circumstances are present and a temporary extension of service is determined to be in the best interests of the Vanguard funds. A trustee may be removed from the board by a shareholder vote representing two-thirds of the total combined net asset value of all fund shares under the same trust. If a nominee is unable to accept election, or subsequently leaves the board before the next election, the board of trustees may, in its discretion, select another person to fill the vacant position.

What are the board's responsibilities?

The primary responsibility of the board of trustees of each fund is to oversee the management of the fund for the benefit of shareholders. Each board has a supermajority of independent trustees who are not "interested persons" of the funds. Mr. McNabb is currently the only interested trustee on the funds' boards.⁵ The independent trustees bring a broad range of relevant backgrounds, experiences, and skills to the boards, particularly in those domains critical to the funds and their shareholders.

In exercising their oversight responsibilities, the funds' trustees focus on matters they determine to be vitally important to fund shareholders. This includes not only the management, performance, and risk management of the funds, but also the approval of arrangements with material service providers (e.g., fund custodians).

⁵ If elected, Mr. Buckley will be a management representative on the funds' boards and, therefore, a second interested trustee.

The business acumen, experience, and objective thinking of the funds' independent trustees are invaluable assets for the funds' shareholders and Vanguard management. Holding management accountable to a group of independent, highly experienced, and qualified individuals who act solely on behalf of shareholders makes management more effective in the long run.

Each fund's board of trustees met seven times during its last fiscal year. No trustee attended fewer than 75% of the total meetings of the board and 75% of the total meetings of the committees on which he or she serves.

What are the board's committees?

The board of trustees of each fund has four standing committees. Three of the committees are composed exclusively of independent trustees; Mr. McNabb serves on one of the two investment committees.

- **Audit Committee.** This committee oversees the financial statements and reporting processes, the system of internal control over financial reporting, and the audit process for each fund. The following independent trustees currently serve as members of the committee: Mr. Gupta,⁶ Ms. Heisen, Mr. Loughrey, Mr. Loughridge, and Mr. Volanakis. The committee held five meetings during each fund's most recently ended fiscal year.
- **Compensation Committee.** This committee oversees the compensation programs established by each fund for the benefit of its trustees. All independent trustees serve as members of the committee. The committee held one meeting during each fund's most recently ended fiscal year.
- **Investment Committees.** These committees assist the board in its oversight of investment advisors to the funds and in the review and evaluation of materials relating to the board's consideration of investment advisory agreements with the funds. Each trustee serves on one of two investment committees. Each investment committee held four meetings during each fund's most recently ended fiscal year.
- **Nominating Committee.** This committee nominates candidates for election to the board of trustees of each fund. The committee also has the authority to recommend the removal of any trustee. All independent trustees serve as members of the committee. The committee held three meetings during each fund's most recently ended fiscal year. The committee considers shareholder recommendations for trustee nominees. Shareholders may send such recommendations to Mr. Loughridge, chairman of the committee.

⁶ Mr. Gupta, a fund trustee since 2001, is retiring from Board service at the end of 2017 and therefore is not standing for re-election.

How are trustees selected?

Oversight of the funds and their management by a group of highly qualified trustees is critical to the long-term investment outcomes of our fund investors. To that end, the board has identified a range of capabilities relevant to the funds' operations that the trustees—in aggregate—must bring to bear in their role as fiduciaries for fund shareholders. The board expects that all trustees will be individuals of the highest integrity, committed to acting solely in fund investors' best interests, as well as having a track record of substantial professional accomplishment.

The following matrix at the bottom of pages 10 and 11 reflects the board's assessment of each trustee's background and its relevance to oversight of the funds.

While each trustee/nominee may not be equally skilled in each area the board deems important, the board believes that a variety of skills and experiences, as well as diversity along dimensions such as age, tenure, gender, ethnicity, and others will result in a board uniquely suited to serve investors' long-term interests.

How are the trustees compensated?

Each fund (other than the Institutional Index Funds and Vanguard's funds of funds) pays its proportionate share of the independent trustees' compensation.⁷

	Executive Leadership	Investment Acumen	Global Experience	Technology/ Digital
Buckley	✓	✓	✓	✓
Fullwood	✓		✓	
Gutmann	✓		✓	
Heisen	✓		✓	
Loughrey	✓		✓	✓
Loughridge	✓		✓	✓
Malpass		✓	✓	
McNabb	✓	✓	✓	
Mulligan	✓	✓		
Perold		✓	✓	
Raskin		✓		✓
Volanakis	✓		✓	✓

⁷ The trustees of Vanguard Institutional Index Funds receive no compensation directly from those funds, but Vanguard is responsible for paying the trustees for their service. If, however, Proposal 6 of this proxy statement is approved by shareholders of the Institutional Index Funds, the trustees of the Institutional Index Funds would receive compensation from these funds. The trustees of Vanguard's funds of funds receive no compensation from those funds.

Mr. McNabb, an interested trustee, receives no compensation from the funds.⁸ The funds compensate their independent trustees in three ways:

- The independent trustees receive an annual fee for their service to the funds, which is subject to reduction based on absences from scheduled board meetings.
- The independent trustees are reimbursed for the travel and other expenses that they incur in attending board meetings.
- Upon retirement (after attaining age 65 and completing five years of service), the independent trustees who began service prior to January 1, 2001, receive a retirement benefit under a separate account arrangement. As of January 1, 2001, the opening balance of the trustees' separate account was generally equal to the net present value of the benefits the trustee had accrued under the trustees' former retirement plan. The trustees' separate account will be credited annually with interest at a rate of 7.5% until the final distribution is received. Those independent trustees who began their service on or after January 1, 2001, are not eligible to participate in the plan.

The table beginning on page 12 provides compensation details for each of the trustees. We list the amounts paid as compensation and accrued as retirement benefits for each Vanguard trust and for each trustee from each Vanguard trust during the fund's most recently ended fiscal year.

Government, Legal & Public Policy	Operations & Risk Management	Finance & Controls	Marketing	Academic/ Research/ Policy
	✓		✓	
	✓		✓	
		✓	✓	✓
✓	✓	✓		
	✓	✓		
	✓	✓		✓
	✓		✓	
				✓
✓		✓		
	✓	✓		

⁸ If elected, Mr. Buckley will also be an interested trustee and will not receive compensation from the funds. Mr. McNabb and Mr. Buckley are salaried employees of Vanguard.

Trustee Compensation

Name of Trust	Independent Trustee	
	Fullwood	Gupta
Vanguard Admiral® Funds		
Aggregate Compensation from this Trust	\$824	\$870
Accrued Pension/Retirement Benefits from this Trust	—	—
Vanguard Bond Index Funds		
Aggregate Compensation from this Trust	\$28,470	\$30,072
Accrued Pension/Retirement Benefits from this Trust	—	—
Vanguard California Tax-Free Funds		
Aggregate Compensation from this Trust	\$1,236	\$1,306
Accrued Pension/Retirement Benefits from this Trust	—	—
Vanguard Charlotte Funds		
Aggregate Compensation from this Trust	\$4,071	\$4,300
Accrued Pension/Retirement Benefits from this Trust	—	—
Vanguard Chester Funds		
Aggregate Compensation from this Trust	\$5,574	\$5,887
Accrued Pension/Retirement Benefits from this Trust	—	—
Vanguard CMT Funds		
Aggregate Compensation from this Trust	—	—
Accrued Pension/Retirement Benefits from this Trust	—	—
Vanguard Convertible Securities Fund		
Aggregate Compensation from this Trust	\$281	\$297
Accrued Pension/Retirement Benefits from this Trust	—	—
Vanguard Explorer® Fund		
Aggregate Compensation from this Trust	\$2,034	\$2,148
Accrued Pension/Retirement Benefits from this Trust	—	—
Vanguard Fenway Funds		
Aggregate Compensation from this Trust	\$4,248	\$4,487
Accrued Pension/Retirement Benefits from this Trust	—	—
Vanguard Fixed Income Securities Funds		
Aggregate Compensation from this Trust	\$19,603	\$20,705
Accrued Pension/Retirement Benefits from this Trust	—	—
Vanguard Horizon Funds®		
Aggregate Compensation from this Trust	\$2,853	\$2,853
Accrued Pension/Retirement Benefits from this Trust	—	—

Name of Trust	Independent Trustee						
	Gutmann	Heisen	Loughrey	Loughridge	Malpass	Perold	Volanakis
Vanguard Admiral® Funds							
Aggregate Compensation from this Trust	\$824	\$870	\$870	\$979	\$824	\$870	\$870
Accrued Pension/Retirement Benefits from this Trust	—	\$20	—	—	—	—	—
Vanguard Bond Index Funds							
Aggregate Compensation from this Trust	\$28,470	\$30,072	\$30,072	\$33,793	\$28,470	\$28,470	\$30,072
Accrued Pension/Retirement Benefits from this Trust	—	\$508	—	—	—	—	—
Vanguard California Tax-Free Funds							
Aggregate Compensation from this Trust	\$1,236	\$1,306	\$1,306	\$1,470	\$1,236	\$1,236	\$1,306
Accrued Pension/Retirement Benefits from this Trust	—	\$24	—	—	—	—	—
Vanguard Charlotte Funds							
Aggregate Compensation from this Trust	\$4,071	\$4,300	\$4,300	\$4,834	\$4,071	\$4,071	\$4,300
Accrued Pension/Retirement Benefits from this Trust	—	\$78	—	—	—	—	—
Vanguard Chester Funds							
Aggregate Compensation from this Trust	\$5,574	\$5,887	\$5,886	\$6,618	\$5,574	\$5,887	\$5,887
Accrued Pension/Retirement Benefits from this Trust	—	\$138	—	—	—	—	—
Vanguard CMT Funds							
Aggregate Compensation from this Trust	—	—	—	—	—	—	—
Accrued Pension/Retirement Benefits from this Trust	—	—	—	—	—	—	—
Vanguard Convertible Securities Fund							
Aggregate Compensation from this Trust	\$281	\$297	\$297	\$331	\$281	\$281	\$297
Accrued Pension/Retirement Benefits from this Trust	—	\$6	—	—	—	—	—
Vanguard Explorer® Fund							
Aggregate Compensation from this Trust	\$2,034	\$2,148	\$2,148	\$2,416	\$2,034	\$2,034	\$2,148
Accrued Pension/Retirement Benefits from this Trust	—	\$40	—	—	—	—	—
Vanguard Fenway Funds							
Aggregate Compensation from this Trust	\$4,248	\$4,487	\$4,487	\$5,047	\$4,248	\$4,487	\$4,487
Accrued Pension/Retirement Benefits from this Trust	—	\$126	—	—	—	—	—
Vanguard Fixed Income Securities Funds							
Aggregate Compensation from this Trust	\$19,603	\$20,705	\$20,705	\$23,270	\$19,603	\$19,603	\$20,705
Accrued Pension/Retirement Benefits from this Trust	—	\$344	—	—	—	—	—
Vanguard Horizon Funds®							
Aggregate Compensation from this Trust	\$2,853	\$2,853	\$2,853	\$3,384	\$2,853	\$2,853	\$2,853
Accrued Pension/Retirement Benefits from this Trust	—	\$68	—	—	—	—	—

Trustee Compensation (continued)

Name of Trust	Independent Trustee	
	Fullwood	Gupta
Vanguard Index Funds		
Aggregate Compensation from this Trust	\$77,121	\$81,459
Accrued Pension/Retirement Benefits from this Trust	—	—
Vanguard International Equity Index Funds		
Aggregate Compensation from this Trust	\$8,100	\$8,556
Accrued Pension/Retirement Benefits from this Trust	—	—
Vanguard Institutional Index Funds		
Aggregate Compensation from this Trust	—	—
Accrued Pension/Retirement Benefits from this Trust	—	—
Vanguard Malvern Funds		
Aggregate Compensation from this Trust	\$1,072	\$1,132
Accrued Pension/Retirement Benefits from this Trust	—	—
Vanguard Massachusetts Tax-Exempt Funds		
Aggregate Compensation from this Trust	\$99	\$104
Accrued Pension/Retirement Benefits from this Trust	—	—
Vanguard Money Market Reserves		
Aggregate Compensation from this Trust	\$9,763	\$10,313
Accrued Pension/Retirement Benefits from this Trust	—	—
Vanguard Montgomery Funds		
Aggregate Compensation from this Trust	\$132	\$140
Accrued Pension/Retirement Benefits from this Trust	—	—
Vanguard Morgan Growth Fund		
Aggregate Compensation from this Trust	\$1,607	\$1,698
Accrued Pension/Retirement Benefits from this Trust	—	—
Vanguard Municipal Bond Funds		
Aggregate Compensation from this Trust	\$8,009	\$8,460
Accrued Pension/Retirement Benefits from this Trust	—	—
Vanguard New Jersey Tax-Free Funds		
Aggregate Compensation from this Trust	\$237	\$250
Accrued Pension/Retirement Benefits from this Trust	—	—
Vanguard New York Tax-Free Funds		
Aggregate Compensation from this Trust	\$432	\$456
Accrued Pension/Retirement Benefits from this Trust	—	—

Name of Trust	Independent Trustee						
	Gutmann	Heisen	Loughrey	Loughridge	Malpass	Perold	Volanakis
Vanguard Index Funds							
Aggregate Compensation from this Trust	\$77,121	\$81,459	\$81,459	\$91,548	\$77,121	\$81,459	\$81,459
Accrued Pension/Retirement Benefits from this Trust	—	\$1,382	—	—	—	—	—
Vanguard International Equity Index Funds							
Aggregate Compensation from this Trust	\$8,100	\$8,556	\$8,556	\$9,618	\$8,100	\$8,100	\$8,556
Accrued Pension/Retirement Benefits from this Trust	—	\$158	—	—	—	—	—
Vanguard Institutional Index Funds							
Aggregate Compensation from this Trust	—	—	—	—	—	—	—
Accrued Pension/Retirement Benefits from this Trust	—	—	—	—	—	—	—
Vanguard Malvern Funds							
Aggregate Compensation from this Trust	\$1,072	\$1,132	\$1,132	\$1,271	\$1,072	\$1,132	\$1,132
Accrued Pension/Retirement Benefits from this Trust	—	\$26	—	—	—	—	—
Vanguard Massachusetts Tax-Exempt Funds							
Aggregate Compensation from this Trust	\$99	\$104	\$104	\$117	\$99	\$104	\$104
Accrued Pension/Retirement Benefits from this Trust	—	\$2	—	—	—	—	—
Vanguard Money Market Reserves							
Aggregate Compensation from this Trust	\$9,763	\$10,313	\$10,313	\$11,588	\$9,763	\$10,313	\$10,313
Accrued Pension/Retirement Benefits from this Trust	—	\$239	—	—	—	—	—
Vanguard Montgomery Funds							
Aggregate Compensation from this Trust	\$132	\$140	\$140	\$155	\$132	\$132	\$140
Accrued Pension/Retirement Benefits from this Trust	—	\$2	—	—	—	—	—
Vanguard Morgan Growth Fund							
Aggregate Compensation from this Trust	\$1,607	\$1,698	\$1,698	\$1,909	\$1,607	\$1,698	\$1,698
Accrued Pension/Retirement Benefits from this Trust	—	\$40	—	—	—	—	—
Vanguard Municipal Bond Funds							
Aggregate Compensation from this Trust	\$8,009	\$8,460	\$8,460	\$9,509	\$8,009	\$8,460	\$8,460
Accrued Pension/Retirement Benefits from this Trust	—	\$157	—	—	—	—	—
Vanguard New Jersey Tax-Free Funds							
Aggregate Compensation from this Trust	\$237	\$250	\$250	\$282	\$237	\$237	\$250
Accrued Pension/Retirement Benefits from this Trust	—	\$5	—	—	—	—	—
Vanguard New York Tax-Free Funds							
Aggregate Compensation from this Trust	\$432	\$456	\$456	\$513	\$432	\$432	\$456
Accrued Pension/Retirement Benefits from this Trust	—	\$8	—	—	—	—	—

Trustee Compensation (continued)

Name of Trust	Independent Trustee	
	Fullwood	Gupta
Vanguard Ohio Tax-Free Funds		
Aggregate Compensation from this Trust	\$113	\$119
Accrued Pension/Retirement Benefits from this Trust	—	—
Vanguard Pennsylvania Tax-Free Funds		
Aggregate Compensation from this Trust	\$383	\$404
Accrued Pension/Retirement Benefits from this Trust	—	—
Vanguard Quantitative Funds		
Aggregate Compensation from this Trust	\$1,027	\$1,085
Accrued Pension/Retirement Benefits from this Trust	—	—
Vanguard Scottsdale Funds		
Aggregate Compensation from this Trust	\$1,992	\$2,104
Accrued Pension/Retirement Benefits from this Trust	—	—
Vanguard Specialized Funds		
Aggregate Compensation from this Trust	\$22,852	\$24,138
Accrued Pension/Retirement Benefits from this Trust	—	—
Vanguard STAR Funds		
Aggregate Compensation from this Trust	\$14,813	\$15,647
Accrued Pension/Retirement Benefits from this Trust	—	—
Vanguard Tax-Managed Funds®		
Aggregate Compensation from this Trust	\$5,062	\$5,347
Accrued Pension/Retirement Benefits from this Trust	—	—
Vanguard Trustees' Equity Fund		
Aggregate Compensation from this Trust	\$1,589	\$1,678
Accrued Pension/Retirement Benefits from this Trust	—	—
Vanguard Valley Forge Funds		
Aggregate Compensation from this Trust	\$2,359	\$2,492
Accrued Pension/Retirement Benefits from this Trust	—	—
Vanguard Variable Insurance Funds		
Aggregate Compensation from this Trust	\$2,628	\$2,775
Accrued Pension/Retirement Benefits from this Trust	—	—
Vanguard Wellesley Income Fund		
Aggregate Compensation from this Trust	\$5,607	\$5,923
Accrued Pension/Retirement Benefits from this Trust	—	—

	Independent Trustee						
	Gutmann	Heisen	Loughrey	Loughridge	Malpass	Perold	Volanakis
Vanguard Ohio Tax-Free Funds							
Aggregate Compensation from this Trust	\$113	\$119	\$119	\$133	\$113	\$113	\$119
Accrued Pension/Retirement Benefits from this Trust	—	\$2	—	—	—	—	—
Vanguard Pennsylvania Tax-Free Funds							
Aggregate Compensation from this Trust	\$383	\$404	\$404	\$456	\$383	\$383	\$404
Accrued Pension/Retirement Benefits from this Trust	—	\$7	—	—	—	—	—
Vanguard Quantitative Funds							
Aggregate Compensation from this Trust	\$1,027	\$1,085	\$1,085	\$1,220	\$1,027	\$1,085	\$1,085
Accrued Pension/Retirement Benefits from this Trust	—	\$25	—	—	—	—	—
Vanguard Scottsdale Funds							
Aggregate Compensation from this Trust	\$1,992	\$2,104	\$2,104	\$2,366	\$1,992	\$2,104	\$2,104
Accrued Pension/Retirement Benefits from this Trust	—	\$50	—	—	—	—	—
Vanguard Specialized Funds							
Aggregate Compensation from this Trust	\$22,852	\$24,138	\$24,138	\$27,129	\$22,852	\$22,852	\$24,138
Accrued Pension/Retirement Benefits from this Trust	—	\$402	—	—	—	—	—
Vanguard STAR Funds							
Aggregate Compensation from this Trust	\$14,813	\$15,647	\$15,647	\$17,584	\$14,376	\$14,813	\$15,647
Accrued Pension/Retirement Benefits from this Trust	—	\$284	—	—	—	—	—
Vanguard Tax-Managed Funds®							
Aggregate Compensation from this Trust	\$5,062	\$5,347	\$5,347	\$6,008	\$5,062	\$5,062	\$5,347
Accrued Pension/Retirement Benefits from this Trust	—	\$90	—	—	—	—	—
Vanguard Trustees' Equity Fund							
Aggregate Compensation from this Trust	\$1,589	\$1,678	\$1,678	\$1,887	\$1,589	\$1,678	\$1,678
Accrued Pension/Retirement Benefits from this Trust	—	\$31	—	—	—	—	—
Vanguard Valley Forge Funds							
Aggregate Compensation from this Trust	\$2,359	\$2,492	\$2,492	\$2,803	\$2,359	\$2,359	\$2,492
Accrued Pension/Retirement Benefits from this Trust	—	\$42	—	—	—	—	—
Vanguard Variable Insurance Funds							
Aggregate Compensation from this Trust	\$2,628	\$2,775	\$2,775	\$3,119	\$2,628	\$2,628	\$2,775
Accrued Pension/Retirement Benefits from this Trust	—	\$47	—	—	—	—	—
Vanguard Wellesley Income Fund							
Aggregate Compensation from this Trust	\$5,607	\$5,923	\$5,923	\$6,654	\$5,607	\$5,923	\$5,923
Accrued Pension/Retirement Benefits from this Trust	—	\$138	—	—	—	—	—

Trustee Compensation (continued)

Name of Trust	Independent Trustee	
	Fullwood	Gupta
Vanguard Wellington Fund		
Aggregate Compensation from this Trust	\$13,966	\$14,751
Accrued Pension/Retirement Benefits from this Trust	—	—
Vanguard Whitehall Funds		
Aggregate Compensation from this Trust	\$4,229	\$4,466
Accrued Pension/Retirement Benefits from this Trust	—	—
Vanguard Windsor Funds		
Aggregate Compensation from this Trust	\$10,264	\$10,842
Accrued Pension/Retirement Benefits from this Trust	—	—
Vanguard World Fund		
Aggregate Compensation from this Trust	\$6,988	\$7,382
Accrued Pension/Retirement Benefits from this Trust	—	—

	Independent Trustee						
	Gutmann	Heisen	Loughrey	Loughridge	Malpass	Perold	Volanakis
Vanguard Wellington Fund							
Aggregate Compensation from this Trust	\$13,966	\$14,751	\$14,751	\$16,578	\$13,966	\$13,966	\$14,751
Accrued Pension/Retirement Benefits from this Trust	—	\$271	—	—	—	—	—
Vanguard Whitehall Funds							
Aggregate Compensation from this Trust	\$4,229	\$4,466	\$4,466	\$5,019	\$4,229	\$4,229	\$4,466
Accrued Pension/Retirement Benefits from this Trust	—	\$82	—	—	—	—	—
Vanguard Windsor Funds							
Aggregate Compensation from this Trust	\$10,264	\$10,842	\$10,842	\$12,184	\$10,264	\$10,264	\$10,842
Accrued Pension/Retirement Benefits from this Trust	—	\$203	—	—	—	—	—
Vanguard World Fund							
Aggregate Compensation from this Trust	\$6,988	\$7,382	\$7,382	\$8,295	\$6,988	\$7,382	\$7,382
Accrued Pension/Retirement Benefits from this Trust	—	\$172	—	—	—	—	—

The table below shows the total amount of compensation paid to each trustee by all Vanguard funds during 2016 and the total accrued retirement benefit for each trustee as of January 1, 2017. The table above reflects compensation paid by each trust in its most recently ended fiscal year, whereas the table below reflects the total compensation paid to each trustee for his or her service to 198 funds during the 2016 calendar year, and therefore may not equal the sum of the amounts shown in the above table.

	Independent Trustee	
	Fullwood	Gupta
All Vanguard Funds		
Aggregate Compensation from all Vanguard funds	\$237,000	\$250,333
Total Accrued Annual Retirement Benefit at January 1, 2017 ⁹	—	—

	Independent Trustee						
	Gutmann	Heisen	Loughrey	Loughridge	Malpass	Perold	Volanakis
All Vanguard Funds							
Aggregate Compensation from all Vanguard funds	\$237,000	\$248,833	\$250,333	\$281,333	\$230,300	\$237,000	\$250,333
Total Accrued Annual Retirement Benefit at January 1, 2017 ⁹	—	\$7,509	—	—	—	—	—

⁹ Each trustee is eligible to receive retirement benefits only after completing at least 5 years (60 consecutive months) of service as a trustee for the Vanguard funds. The annual retirement benefit will be paid in monthly installments, beginning with the month following the trustee's retirement from service, and will cease after 10 years of payments (120 monthly installments). Trustees who began their service on or after January 1, 2001, are not eligible to participate in the retirement benefit plan.

Do trustees own fund shares?

The trustees invest in the Vanguard funds based on their investment needs. Please see Part V of the proxy statement for information on the dollar range of fund shares owned by each trustee.

Who are the funds' officers?

All Vanguard funds employ their officers on a shared basis. Officers are considered "interested persons" of the funds. In addition to Mr. McNabb, chief executive officer and president, they are as follows:

Officers ¹⁰	Principal Occupation(s)
Glenn Booraem	
Born 1967 Investment Stewardship Officer	Mr. Booraem, a Principal of Vanguard, has served as Investment Stewardship Officer of each of the investment companies served by Vanguard, since February 2017. Mr. Booraem served as Treasurer (2015–2017), Controller (2010–2015), and Assistant Controller (2001–2010) of each of the investment companies served by Vanguard. Mr. Booraem has been a Vanguard funds officer since July 2010 and oversees 195 Vanguard funds.
Thomas J. Higgins	
Born 1957 Chief Financial Officer	Mr. Higgins, a Principal of Vanguard, has served as Chief Financial Officer of each of the investment companies served by Vanguard, since 2008. Mr. Higgins served as Treasurer of each of the investment companies served by Vanguard, from 1998 to 2008. Mr. Higgins has been a Vanguard funds officer since September 2008 and oversees 195 Vanguard funds.
Peter Mahoney	
Born 1974 Controller	Mr. Mahoney, a Principal of Vanguard, has served as Controller of each of the investment companies served by Vanguard, since May 2015. Mr. Mahoney served as head of International Fund Services at Vanguard from 2008 to 2014. Mr. Mahoney has been a Vanguard funds officer since May 2015 and oversees 195 Vanguard funds.
Anne E. Robinson	
Born 1970 Secretary	Ms. Robinson has served as General Counsel of Vanguard, since September 2016; Secretary of Vanguard and of each of the investment companies served by Vanguard, since September 2016; Director and Senior Vice President of Vanguard Marketing Corporation, since September 2016; and a Managing Director of Vanguard, since August 2016. Ms. Robinson served as Managing Director and General Counsel of Global Cards and Consumer Services at Citigroup from 2014 to 2016. She also served as counsel at American Express from 2003 to 2014. Ms. Robinson has been a Vanguard funds officer since September 2016 and oversees 195 Vanguard funds.

Officers ¹⁰ (continued)	Principal Occupation(s)
Michael Rollings	
Born 1963 Treasurer	Mr. Rollings, a Managing Director of Vanguard since June 2016, has served as Treasurer of each of the investment companies served by Vanguard, since February 2017, and a Director of Vanguard Marketing Corporation, since June 2016. Mr. Rollings served as the Executive Vice President and Chief Financial Officer of MassMutual Financial Group from 2006 to 2016. Mr. Rollings has been a Vanguard funds officer since February 2017 and oversees 195 Vanguard funds.

¹⁰ Fund officers receive no compensation from the Funds, but are salaried employees of Vanguard.

**EACH FUND'S BOARD OF TRUSTEES RECOMMENDS
THAT YOU VOTE "FOR" EACH OF THE NOMINEES.**

Proposal 2— Approve a manager of managers arrangement with third-party investment advisors

> This proposal applies to all Vanguard funds EXCEPT: Alternative Strategies Fund; Capital Opportunity Fund; Capital Value Fund; Convertible Securities Fund; Core Bond Fund; Dividend Growth Fund; Emerging Markets Bond Fund; Emerging Markets Select Stock Fund; Energy Fund; Equity Income Fund; Explorer Fund; Explorer Value Fund; Global Equity Fund; Global Minimum Volatility Fund; GNMA Fund; Growth and Income Fund; Health Care Fund; High-Yield Corporate Bond Fund; Institutional Target Retirement 2065 Fund; International Explorer Fund; International Growth Fund; International Value Fund; Long-Term Investment-Grade Fund; Market Liquidity Fund; Market Neutral Fund; Mid-Cap Growth Fund; Morgan Growth Fund; Municipal Cash Management Fund; Precious Metals and Mining Fund; PRIMECAP Core Fund; PRIMECAP Fund; Selected Value Fund; Target Retirement 2065 Fund; U.S. Growth Fund; U.S. Value Fund; Ultra-Short-Term Bond Fund; Balanced Portfolio of the Variable Insurance Fund; Capital Growth Portfolio of the Variable Insurance Fund; Diversified Value Portfolio of the Variable Insurance Fund; Equity Income Portfolio of the Variable Insurance Fund; Growth Portfolio of the Variable Insurance Fund; High-Yield Bond Portfolio of the Variable Insurance Fund; International Portfolio of the Variable Insurance Fund; Small Company Growth Portfolio of the Variable Insurance Fund; Wellesley Income Fund; Wellington Fund; Windsor Fund; and Windsor II Fund.

We seek your approval to adopt a policy that would enable certain funds that are organized or advised by Vanguard (each such fund, a “Vanguard Managed Fund”) to enter into and materially amend investment advisory agreements with third-party investment advisors without first obtaining shareholder approval, subject to the approval of the Vanguard Managed Fund’s trustees and certain conditions imposed by the Securities and Exchange Commission (“SEC”). This policy has already been adopted for many Vanguard funds, but the shareholders of the Vanguard Managed Funds subject to this Proposal have not previously adopted this policy. Adopting this policy would harmonize the flexibility and protections afforded to more than thirty actively managed Vanguard funds.

What is this Proposal about?

Federal law generally requires shareholder approval of mutual fund investment advisory contracts, which can result in lengthy and costly proxy solicitations. These costs, borne by the fund seeking to change its investment advisory contract, could reduce shareholders’ investment returns.

Since 1993, Vanguard and certain Vanguard funds (“Selected Funds”) have operated pursuant to exemptive relief from the SEC (“Existing Relief”). The Existing Relief permits Vanguard, subject to the oversight and approval of the trustees of each Selected Fund, to hire third-party investment advisors that are not affiliated with Vanguard (“Selected Advisors”) to manage the day-to-day investment programs of the Selected Funds, and permits the Selected Funds to enter into or materially amend written advisory contracts with the Selected Advisors, without first obtaining shareholder approval. This advisory structure is commonly referred to as a “manager of managers” arrangement, and is widely used within the mutual fund industry. For example, the SEC has issued more than 200 orders permitting mutual funds to realize the benefits afforded by similar manager of managers arrangements.

The Existing Relief has benefitted shareholders of the Selected Funds and would similarly benefit shareholders of the Vanguard Managed Funds. Vanguard has the expertise necessary to evaluate and select the most suitable investment advisors for the Vanguard Managed Funds and to negotiate competitive and fair fees for their advisory services. If approved, Vanguard would monitor the Selected Advisors’ compliance with the investment objectives and policies of the Vanguard Managed Funds, review the Selected Advisors’ performance, and regularly report on such matters to the trustees of the Vanguard funds. In addition, Vanguard would recommend to the trustees of each Vanguard Managed Fund the allocation, and reallocation from time to time, of the Vanguard Managed Fund’s assets among Selected Advisors and/or Vanguard, and recommend the termination of a Selected Advisor when deemed in the best interest of the shareholders of a Vanguard Managed Fund. If the trustees of a Vanguard Managed Fund determine that it would be in the best interest of shareholders to designate a new Selected Advisor for the Vanguard Managed Fund, the Existing Relief would permit Vanguard and the trustees to act quickly to name the new Selected Advisor without incurring the significant delay and expense associated with obtaining shareholder approval. There can be no guarantee that a Vanguard Managed Fund’s advisory fees would remain the same or decrease under the terms of any advisory agreement with a Selected Advisor. The trustees of a Vanguard Managed Fund, however, will consider advisory fees, among other factors, when deciding whether to approve an advisory agreement with a Selected Advisor.

Why should I vote for this Proposal?

The trustees believe that this Proposal would provide significant benefits for shareholders of the Vanguard Managed Funds. Circumstances could arise where it would be beneficial for a Vanguard Managed Fund to hire a Selected Advisor for investment or other reasons. Approving this Proposal would give the Vanguard Managed Funds the flexibility to enter into and materially amend advisory agreements with Selected Advisors without incurring the substantial costs and delays involved in a proxy solicitation, costs that are ultimately paid by the fund's shareholders. It also would ensure that the Vanguard Managed Funds could benefit, in a timely manner, from Vanguard's expertise in recommending and monitoring the most suitable Selected Advisors for the Vanguard Managed Funds and negotiating competitive fees with those Selected Advisors. Additionally, this Proposal would continue to protect shareholders by requiring the trustees of the Vanguard Managed Funds to evaluate and approve all new or amended advisory agreements with the Selected Advisors. Lastly, this Proposal would enable Vanguard to further enhance its business continuity plans for the Vanguard Managed Funds. Having the flexibility to rely on the Existing Relief would provide an additional option for the Vanguard Managed Funds to continue their operations should an event, such as a natural disaster, significantly disrupt the operations of Vanguard in the future. For these reasons, the trustees believe that approving this Proposal is in the best interests of the Vanguard Managed Funds and their shareholders.

What are the primary conditions of the Existing Relief?

Under the terms of the Existing Relief, Vanguard and the Vanguard Managed Funds would be subject to several conditions imposed by the SEC. For example, each Vanguard Managed Fund must continue to operate as a member of The Vanguard Group, Inc., receiving corporate management and distribution services from Vanguard on the basis of Vanguard's costs of operations. Vanguard must provide general management services to each Vanguard Managed Fund, including overall supervisory responsibility for the general management and investment of the Vanguard Managed Fund. Subject to review and approval by the Vanguard Managed Fund's trustees, Vanguard would set the Vanguard Managed Fund's overall investment strategies, evaluate and recommend Selected Advisors to manage all or a portion of a Vanguard Managed Fund's assets, and monitor the performance of Selected Advisors. The Existing Relief does not extend to any investment advisor that is an affiliate of Vanguard or the Vanguard funds.

Further, within 90 days of hiring a new Selected Advisor for a Vanguard Managed Fund, Vanguard would be required to furnish to the shareholders a statement containing certain information about the new Selected Advisor and the related advisory agreement. Each Vanguard Managed Fund would be required to disclose: (i) the aggregate fees paid by the Vanguard Managed Fund to Vanguard and any affiliated advisors and (ii) the aggregate fees paid by the Vanguard Managed Fund to Selected Advisors. A Vanguard Managed Fund would not be required to disclose the specific fees paid to a particular Selected Advisor, but the aggregate advisory fees would be reported in the expense ratio of the Vanguard Managed Fund.

Are there currently any plans to change a Vanguard Managed Fund's advisory arrangements based on this Proposal?

No. Vanguard has not recommended, and the Vanguard Managed Funds' trustees have not approved, any changes to a Vanguard Managed Fund's advisory arrangements in anticipation of receiving approval of this Proposal. Rather, approving this Proposal would provide the Vanguard Managed Funds with the flexibility to employ a cost-effective and efficient method to structure their advisory arrangements in a manner that their trustees determine to be in shareholders' best interests should such a determination be made in the future.

What happens if shareholders do not approve this Proposal?

If shareholders of a Vanguard Managed Fund do not approve this Proposal, that Vanguard Managed Fund will not be permitted to rely on the Existing Relief and would be required to obtain shareholder approval before entering into or materially amending an investment advisory agreement with a Selected Advisor. The process for obtaining shareholder approval can be lengthy and very costly, and the costs would be borne by the fund's shareholders.

**EACH FUND'S BOARD OF TRUSTEES RECOMMENDS
THAT YOU VOTE "FOR" PROPOSAL 2**

Proposal 3— Approve a manager of managers arrangement with wholly-owned subsidiaries of Vanguard

> This proposal applies to all Vanguard funds.

We seek to adopt a policy that would enable Vanguard or each Vanguard fund to enter into and materially amend investment advisory agreements with wholly-owned subsidiaries of Vanguard without first obtaining shareholder approval, subject to the approval of the Vanguard fund's trustees and any conditions imposed by the Securities and Exchange Commission ("SEC").

Vanguard is a global organization that provides investment management services to non-U.S. clients primarily through wholly-owned subsidiaries that are located outside of the United States (the "Vanguard Foreign Subsidiaries"). The Vanguard Foreign Subsidiaries generally provide these services by employing their own portfolio managers, analysts, traders, and other professionals. In providing investment services for Vanguard's non-U.S. clients, the Vanguard Foreign Subsidiaries follow the specifications and methodologies developed by Vanguard for creating and managing index and active investment portfolios. In providing these services, the Vanguard Foreign Subsidiaries rely on many of the same systems, processes, policies, procedures, and practices as Vanguard. Recently, the Vanguard Foreign Subsidiaries became SEC-registered investment advisers, and therefore, would now be subject to SEC rules, regulations, and oversight for any U.S. mutual funds they might advise. This includes the requirement that an investment advisory agreement with an investment advisor to a mutual fund be approved by the fund's shareholders. For the reasons discussed below, the trustees believe that this Proposal would provide significant benefits for shareholders of the Vanguard funds.

What is this Proposal about?

Federal law generally requires shareholder approval of mutual fund investment advisory contracts, which typically requires a lengthy and costly proxy solicitation. These costs are borne by the fund, which could reduce its shareholders' investment returns.

Since 1993, Vanguard and certain Vanguard funds ("Selected Funds") have operated pursuant to exemptive relief from the SEC ("Existing Relief"). The Existing Relief permits Vanguard, subject to the oversight and approval of the trustees of each Selected Fund, to hire third-party investment advisors that are not owned by Vanguard to manage the day-to-day investment programs of

the Selected Funds, and permits the Selected Funds to enter into or materially amend written advisory contracts with these advisors, without first obtaining shareholder approval. This advisory structure is commonly referred to as a "manager of managers" arrangement, and is widely used within the mutual fund industry. Although the Existing Relief has benefitted shareholders of the Selected Funds, the Existing Relief does not permit Vanguard or the Vanguard funds to enter into investment advisory agreements with wholly-owned subsidiaries of Vanguard.

In recent years, the SEC has granted exemptive relief to more than 30 fund complexes permitting mutual funds to enter into "manager of managers" arrangements involving subsidiaries of their investment advisors. In February 2017, Vanguard and the Vanguard funds filed an application with the SEC requesting substantially similar exemptive relief ("Requested Relief"). If granted, the Requested Relief would permit Vanguard or the Vanguard funds, without first obtaining shareholder approval, to enter into and materially amend an investment advisory agreement with an investment advisor that is: (1) an indirect or direct "wholly-owned subsidiary" (as such term is defined in the Investment Company Act of 1940 ("1940 Act")) of Vanguard; (2) a sister company of Vanguard that is an indirect or direct "wholly-owned subsidiary" (as such term is defined in the 1940 Act) of the same company that, indirectly or directly, wholly owns Vanguard (each of (1) and (2) a "Wholly-Owned Subsidiary"); or (3) an investment advisor that is not an "affiliated person" (as such term is defined in the 1940 Act) of the Vanguard fund or Vanguard other than by virtue of serving as an investment advisor to a Vanguard fund (together with a Wholly-Owned Subsidiary, a "Proposed Advisor"). Because each Vanguard Foreign Subsidiary would qualify as a "Wholly-Owned Subsidiary," the Requested Relief would enable Vanguard or the Vanguard funds to enter into and materially amend investment advisory agreements with Vanguard Foreign Subsidiaries without undertaking a costly proxy solicitation to obtain shareholder approval, subject to the conditions prescribed by the SEC to protect shareholders' interests.

If this Proposal is approved by shareholders and the SEC grants the Requested Relief, each Vanguard fund would be able to operate under a new "manager of managers" arrangement. Under this arrangement, Vanguard would have the ultimate responsibility, subject to oversight by the board of trustees of each Vanguard fund, to oversee the hiring, termination, and replacement of Proposed Advisers. Vanguard would evaluate Proposed Advisors for a Vanguard fund and make recommendations about their hiring, termination, and replacement to the trustees of the Vanguard fund. Vanguard would negotiate and renegotiate the terms of any advisory agreement with a Proposed Advisor, including the fees paid to a Proposed Advisor, subject to the oversight of the trustees of the

Vanguard fund and applicable law. Vanguard would also allocate and, as appropriate, reallocate the Vanguard fund's assets among Proposed Advisors and/or Vanguard subject to review and approval by the Vanguard fund's trustees. The Proposed Advisors, subject to the supervision of Vanguard and oversight of the trustees of the Vanguard fund, would determine the securities and other investments to be purchased, sold, or entered into by the Vanguard fund. The Proposed Advisors would monitor their investments for the Vanguard fund and provide periodic reports to Vanguard and the Vanguard fund's trustees. There can be no guarantee that a Vanguard fund's advisory fees would remain the same or decrease under the terms of any advisory agreement with a Proposed Advisor. The trustees of a Vanguard fund, however, will consider advisory fees, among other factors, when deciding whether to approve an advisory agreement with a Proposed Advisor.

Although other fund complexes have obtained exemptive relief similar to the Requested Relief, there can be no guarantee that the SEC will issue an exemptive order to Vanguard and the Vanguard funds based on the Requested Relief, or that the Requested Relief will be granted by the SEC subject to the currently proposed terms and conditions. If this Proposal is approved by shareholders, Vanguard and the Vanguard funds would continue to seek shareholder approval of new or amended advisory agreements with Wholly-Owned Subsidiaries unless and until an exemptive order is granted by the SEC.

Why should I vote for this Proposal?

The trustees believe that this Proposal would provide significant benefits for shareholders of the Vanguard funds. Circumstances could arise where it would be beneficial for a Vanguard fund to hire a Proposed Advisor for investment or other reasons. Approving this Proposal would give Vanguard or the Vanguard funds the flexibility to enter into and materially amend advisory agreements with Proposed Advisors without incurring the substantial costs and delays involved in a proxy solicitation, costs that are ultimately paid by the fund's shareholders. It would also ensure that the Vanguard funds could benefit from Vanguard's expertise in recommending and monitoring the most suitable Proposed Advisors for the Vanguard funds and negotiating competitive fees with those Proposed Advisors. Additionally, this proposal would allow the funds to leverage certain capabilities of Vanguard's non-U.S. subsidiaries that would be particularly valuable for funds that transact in non-U.S. markets. More specifically, funds would benefit from the ability to participate in the new issue market outside of U.S. hours, leverage relationships with brokers in the local markets, and gain access to local issuers through investor calls and in-person meetings. Furthermore, this Proposal would continue to protect shareholders

by requiring the trustees of the Vanguard funds to evaluate and approve all new or amended advisory agreements with the Proposed Advisors. Lastly, this Proposal would enable Vanguard to further enhance its business continuity plans for the Vanguard funds. Having the flexibility to rely on the Requested Relief would provide an additional option for the Vanguard funds to continue their operations should an event, such as a natural disaster, significantly disrupt the operations of Vanguard in the future. For these reasons, the trustees believe that approving this Proposal is in the best interests of the Vanguard funds and their shareholders.

What are the primary conditions of the Requested Relief?

Under the terms of the Requested Relief, Vanguard and the Vanguard funds would be subject to several conditions imposed by the SEC. For example, each Vanguard fund must continue to operate as a member of The Vanguard Group, Inc., receiving corporate management and distribution services from Vanguard on the basis of Vanguard's costs of operations. Vanguard must provide general management services to the Vanguard funds, including overall supervisory responsibility for the general management and investment of each Vanguard fund's assets. Subject to review and approval by the Vanguard fund's trustees, Vanguard would set a Vanguard fund's overall investment strategies, and evaluate and recommend Proposed Advisors to manage all or a portion of a Vanguard fund's assets. Subject to review by the trustees of the Vanguard fund, Vanguard would monitor and evaluate the performance of any Proposed Advisors. Whenever Vanguard recommends an investment advisor change for a Vanguard fund with a Wholly-Owned Subsidiary, the trustees of the Vanguard fund must find that such change is in the best interests of the Vanguard fund and its shareholders and does not involve a conflict of interest from which Vanguard or the Wholly-Owned Subsidiary derives an inappropriate advantage.

Further, within 90 days of hiring a new Proposed Advisor for a Vanguard fund, the Vanguard fund must provide shareholders with an information statement or a notice of the availability of such information statement on a website, containing certain information about the Proposed Advisor and the related advisory agreement. A Vanguard fund may not be required, however, to disclose the specific fees paid to a particular advisor.

Are there currently any plans to change a Vanguard fund’s advisory arrangements based on this Proposal?

No. Vanguard has not recommended, and the Vanguard funds’ trustees have not approved, any changes to a Vanguard fund’s advisory arrangements in anticipation of receiving approval of this Proposal. Rather, approving this Proposal would provide the Vanguard funds with a cost-effective and efficient method to structure their advisory arrangements in a manner that their trustees determine to be in their best interests should such a determination be made in the future.

What happens if shareholders do not approve this Proposal?

If shareholders of a Vanguard fund do not approve this Proposal, that Vanguard fund would not be permitted to rely on the Requested Relief and would be required to obtain shareholder approval before entering into or materially amending an investment advisory agreement with a wholly-owned subsidiary. The process for obtaining shareholder approval can be lengthy and very costly, and the costs would be borne by the fund’s shareholders.

**EACH FUND’S BOARD OF TRUSTEES RECOMMENDS
THAT YOU VOTE “FOR” PROPOSAL 3.**

Proposal 4— Change the investment objective of REIT Index Fund and REIT Index Portfolio of the Variable Insurance Fund

> This proposal applies to REIT Index Fund and REIT Index Portfolio of the Variable Insurance Fund.

We are proposing that shareholders of Vanguard REIT Index Fund (the “REIT Index Fund”) and Vanguard Variable Insurance Fund – REIT Index Portfolio (each a “Fund,” and together the “Funds”) approve a change to enable each Fund to broaden its investment objective, thereby expanding its investable universe. Each Fund currently invests in publicly traded equity real estate investment trusts (“REITs”). We propose that each Fund continue to invest in publicly traded equity REITs and be permitted to invest in other real estate related investments. Each Fund’s investment objective is a fundamental policy and, therefore, can only be changed with shareholder approval.

How would each Fund’s investment objective change?

Each Fund’s current investment objective is as follows:

The Fund seeks to provide a high level of income and moderate long-term capital appreciation by tracking the performance of a benchmark index that measures the performance of publicly traded equity REITs.

The proposed investment objective would broaden the Funds’ investment exposure to include real estate-related investments, such as certain specialized REITs and real estate management and development companies. It would read as follows (with the proposed changes in *italics* and **bold**):

The Fund seeks to provide a high level of income and moderate long-term capital appreciation by tracking the performance of a benchmark index that measures the performance of publicly traded equity REITs *and other real estate-related investments*.

Why change each Fund’s investment objective?

The changes to the investment objective of the Funds are being proposed because they will:

- Align the Funds with the updated Global Industry Classification Standard (“GICS”) methodology, which includes the newly constituted real estate sector.
- Broaden the Vanguard funds’ sector lineup for the equities market by allowing the Funds to invest not just in equity REITs but in all real estate-related securities in the sector, which is currently not present in our lineup.
- Provide additional investment capacity.

Changing the investment objective would align the Funds with the recent changes in the GICS methodology. MSCI and S&P Global developed the GICS in 1999 as a way to standardize market complexity and keep up with the pace of industry movements. Previously, the GICS methodology divided all public equities into ten sectors.

In September 2016, several changes were made to GICS. Notably, as a result of the evolving investment landscape, real estate was added as an eleventh sector to the GICS methodology, creating this new sector by carving out real estate securities from their previous position in the financial sector. This newly created real estate sector is composed of equity REITs, which includes specialized REITs, and real estate management and development companies. Currently, each Fund’s investment objective allows for investment only in publicly traded equity REITs, a subset of the broader real estate market. Since Vanguard generally follows the GICS methodology and desires to ensure that the Vanguard sector fund lineup is complete and provides a full replication of the market using a sector methodology, we propose changing the investment objective for the Funds accordingly.

Once transitioned to the new real estate sector, the Funds would utilize a new benchmark index, the MSCI US Investable Market Real Estate 25/50 Index. The current benchmark index of each Fund is the MSCI US REIT Index. For investors who use Vanguard’s entire sector lineup for portfolio construction, this transition would provide broader exposure to the U.S. equities market. A change in each Fund’s benchmark would enable the Funds to allocate cash flow to a wider array of investable securities, giving them broader real estate market exposure.

Changing the investment objective, and subsequently the index, would provide the added benefit of additional investment capacity for the Funds. Generally, there are limits on how much of any one REIT security a fund may own. A narrow investment sector, such as REITs, creates challenges for funds with

considerable holdings. If the REIT Index Fund were unable to obtain exposure to a particular REIT due to ownership limits, there may be a negative impact on the Fund’s ability to track its index. Changing the investment objective of each Fund, and then changing the benchmark index accordingly, would increase their investable universe and provide additional capacity with respect to ownership limitations.

What are the differences between the MSCI US REIT Index and MSCI US Investable Market Real Estate 25/50 Index?

The MSCI US REIT Index includes only equity REITs. The MSCI US Investable Market Real Estate 25/50 Index has approximately 97% of its component securities as equity REITs, which includes an increase in the allocation to specialized REITs, and currently a 3% allocation to real estate management and development companies. If shareholders approve the investment objective change for the Funds, then the corresponding change to each Fund’s benchmark index will provide investors of each Fund with exposure to the securities of approximately 26 additional real estate issuers.

How will each Fund be impacted if the change to the investment objective is approved?

If the change to the investment objective is approved, each Fund would undergo a corresponding change to its benchmark index and name.

Each Fund would change from its current benchmark index, the MSCI US REIT Index, to the MSCI US Investable Market Real Estate 25/50 Index.

How will each Fund’s benchmark change be implemented?

The REIT Index Fund would seek to track a transition index, the MSCI US Investable Market Real Estate 25/50 Transition Index, for an interim period of time. The use of a transition index is expected to reduce the costs associated with trading large amounts of securities within a short period, which would occur if the REIT Index Fund were to suddenly begin tracking the MSCI US Investable Market Real Estate 25/50 Index. The following chart presents the changes to each Fund’s benchmark index.

Fund	Current MSCI Index	Proposed MSCI Transition Index	Proposed MSCI Destination Index
Vanguard REIT Index Fund	MSCI US REIT Index	MSCI US Investable Market Real Estate 25/50 Transition Index	MSCI US Investable Market Real Estate 25/50 Index
Vanguard Variable Insurance Fund—REIT Index Portfolio	MSCI US REIT Index	Not applicable	MSCI US Investable Market Real Estate 25/50 Index

The transition index would be utilized only for the REIT Index Fund for approximately six months in order to gradually align the Fund's portfolio securities with those of the destination benchmark, the MSCI US Investable Market Real Estate 25/50 Index. The transaction costs for the REIT Index Fund index transition are expected to be moderate.

Repositioning the portfolio securities of the Vanguard Variable Insurance Fund—REIT Index Portfolio (the "VVIF REIT Index Portfolio") would not require the use of a transition index because the modest size of the VVIF REIT Index Portfolio enables the transition to the new destination benchmark index within a shorter time frame. The transaction costs for the VVIF REIT Index Portfolio index transition are expected to be minimal.

If this Proposal is approved by shareholders, the REIT Index Fund would expect to begin its transition to its new transition benchmark index in early 2018. We expect the REIT Index Fund would begin to track its new destination benchmark index, the MSCI US Investable Market Real Estate 25/50 Index, by the second quarter of 2018. If approved by shareholders, the VVIF REIT Index Portfolio would begin transitioning to its new benchmark index as soon as practicable after shareholder approval. The transition to its new benchmark is expected to be completed shortly thereafter.

The benchmark index change is not expected to result in a change to the expense ratios of any share classes of the Funds. Capital gains distributions are not expected to occur as a result of the benchmark index changes. However, actual costs depend on multiple variables, such as market conditions and shareholder activity during the transition.

Will anything else change aside from each Fund's investment objective and benchmark index?

If shareholders approve changing each Fund's investment objective, each Fund's name would similarly be changed to reflect the new investment objective and corresponding benchmark index. Specifically, the following name changes would be implemented:

- Vanguard REIT Index Fund would be renamed Vanguard Real Estate Index Fund.
- Vanguard Variable Insurance Fund—REIT Index Portfolio would be renamed Vanguard Variable Insurance Fund—Real Estate Index Portfolio.

What happens if shareholders do not approve this Proposal?

If shareholders of a Fund do not approve this Proposal, then the Fund would maintain its current investment objective. The benchmark index and name of the Fund would remain unchanged. The Board would then consider how to proceed in the best interest of the Fund's shareholders.

**EACH FUND'S BOARD OF TRUSTEES RECOMMENDS
THAT YOU VOTE "FOR" PROPOSAL 4**

Proposal 5— Reclassify the diversification status of REIT Index Fund to nondiversified

> This proposal applies to REIT Index Fund.

We propose reclassifying Vanguard REIT Index Fund (the “Fund”) as “nondiversified” under the Investment Company Act of 1940 (“1940 Act”), which would align the Fund’s diversification status with that of Vanguard’s other sector equity index funds. As discussed below, the diversification status of a mutual fund is based on its ownership of the securities of issuers (e.g., real estate investment trusts (“REITs”)) in which it invests. A “diversified” mutual fund must abide by certain SEC restrictions that limit ownership of securities in the fund’s investment portfolio. A “nondiversified” fund is not subject to these requirements and may be better able to consistently track its index and own larger positions of an issuer’s voting stock.

Some industry sectors, such as the REIT or real estate market sectors, are composed of the securities of relatively few issuers. When a fund that has elected to abide by the SEC’s diversification requirements continues to grow, it can be limited in its ability to purchase securities of the issuers in its sector because of its diversified status.

Changing the Fund’s diversification status will enable it to own securities in their appropriate weighting in the Fund’s benchmark index as the Fund continues to grow. It will also align the Fund’s diversification status with that of other sector equity index funds in Vanguard’s fund lineup, which are classified as nondiversified. Under the 1940 Act, a change to a Fund’s diversification status from diversified to nondiversified requires shareholder approval.

What is the difference between a diversified and nondiversified fund?

The SEC requires that a mutual fund designate its status as either diversified or nondiversified depending on its intended ownership of the securities of issuers. The difference is that diversified funds are subject to stricter percentage limits on the amount of assets that can be invested in any one issuer.

The Fund currently operates as diversified under the 1940 Act and, therefore, must operate in compliance with the diversification requirements. Specifically, at least 75% of the Fund’s total assets must be represented by the following:

- (i) Cash and cash items (including receivables).
- (ii) U.S. government securities.
- (iii) Securities of other investment companies.
- (iv) Securities of other issuers, provided that the investment represented by securities of an issuer does not exceed 5% of the total assets of the fund or 10% of the voting stock of the issuer.

Changing the Fund’s status to nondiversified would allow the Fund to continue to grow unconstrained by these limits. The Fund would join twenty-seven other Vanguard funds deemed nondiversified.

Why change the Fund’s diversification status under the 1940 Act?

We are seeking to reclassify the Fund as nondiversified because, based on potential future cash flow into the Fund, the Fund is likely to approach the 1940 Act diversification limits. If these limits are reached, the Fund may not be able to meet its objective of tracking its benchmark index because it will be unable to own securities in their proportionate weighting in the index.

As discussed above, the REIT and real estate market sectors are composed of the securities of fewer issuers than other sectors. Additionally, the Fund is large and has been generally growing due to increased cash flow. In order for the Fund to continue to track its index, it will need to own larger positions of an increasing number of issuers’ voting stock. In addition, it is possible for the largest positions in this type of sector index to appreciate significantly relative to the index’s other positions, which could cause the index to become dominated by a handful of companies.

We believe that an index fund should seek to track its target index as closely as possible, regardless of market conditions. As a result of the Fund’s cash flow, combined with the narrow universe of investable securities, the Fund is growing closer to 1940 Act diversification limits imposed by its diversified status, which could impair its ability to track its index. Therefore, we believe it is appropriate to change the Fund’s diversification status. This change should better position the Fund to be able to track closely its benchmark index by holding index securities should cash flow projections materialize.

Has the Fund’s diversification status changed in the past and could it change again?

Under SEC guidance, a fund’s status will automatically change from nondiversified to diversified if the fund operates as a diversified company for more than three years. Such a change in a fund’s status to diversified does not require shareholder approval. On the other hand, the 1940 Act requires shareholder approval to change a fund’s diversification status to nondiversified.

In 2002, shareholders of the Fund approved a change in the Fund’s diversification status from diversified to nondiversified. The Fund, however, operated as a diversified investment company for more than three years and became “de facto” diversified in 2005 and has since operated as diversified. If shareholders approve this Proposal to change the Fund’s diversification status to nondiversified, the potential exists for the Fund’s status to change again to diversified if the Fund operates as diversified for more than three years.

Will the Fund make any changes to its investment strategy if reclassified as nondiversified under the 1940 Act?

No. The Fund will continue to invest in the securities comprising its benchmark index. If reclassification as a nondiversified fund is approved, then the Fund’s risk profile may increase because a nondiversified fund may invest a greater percentage of its assets in a particular issuer or group of issuers or may own larger positions of an issuer’s voting stock than a diversified fund. To the extent that the Fund invests more in a single issuer or group of issuers, poor performance by the issuers could adversely affect Fund performance more than if the Fund were invested in a larger number of issuers.

Fund shareholders are separately being asked to approve a change to the Fund’s investment objective, as further described in Proposal 4, and approval of Proposal 4 would lead to a related benchmark index change. However, whether or not shareholders approve Proposal 4 will not affect this Proposal as it relates to the Fund’s diversification status.

Are there other diversification requirements that will still apply to the Fund if it becomes nondiversified under the 1940 Act?

Yes. Subchapter M of the Internal Revenue Code (the “IRC”) also has diversification requirements for mutual funds. These diversification requirements are frequently referred to as the “tax diversification requirements.” Under the IRC, among other tests, at least 50% of a fund’s total assets must be represented by (i) cash and cash items, U.S. government securities, and securities of other regulated investment companies and (ii) securities of other issuers, provided that the investment represented by securities of an issuer does not exceed 5% of the total assets of the fund or 10% of the outstanding voting securities of the issuer. The Fund intends to continue to comply with the tax diversification requirements.

What happens if shareholders do not approve the Proposal?

If shareholders do not approve reclassifying the Fund as nondiversified, the Fund would continue to operate as a diversified fund, and for the reasons discussed above, it may be unable to track closely its benchmark index and may incur additional costs if it seeks to gain exposure to index constituents through alternative investments rather than investing directly in an issuer’s voting securities.

**THE FUND’S BOARD OF TRUSTEES RECOMMENDS
THAT YOU VOTE “FOR” PROPOSAL 5.**

**Proposal 6—
Adopt the Funds’ Service Agreement for Institutional Index Fund and Institutional Total Stock Market Index Fund**

> This proposal applies to Institutional Index Fund and Institutional Total Stock Market Index Fund

We are asking shareholders of Vanguard Institutional Index Fund and Vanguard Institutional Total Stock Market Index Fund (collectively, the “Institutional Funds”), each a series of Vanguard Institutional Index Funds, to approve a new investment advisory and distribution arrangement for the Institutional Funds by adopting the Vanguard funds’ Fifth Amended and Restated Funds’ Service Agreement (the “Service Agreement”).

We launched the Institutional Funds (Institutional Index Fund in 1990 and Institutional Total Stock Market Index Fund in 2001) to provide institutional clients access to lower cost alternatives to Vanguard’s core retail mandates. The Institutional Funds currently receive investment advisory, administrative, and distribution services from Vanguard, and its affiliates, pursuant to an Amended and Restated Management and Distribution Agreement, dated March 31, 2004, among Vanguard Institutional Index Funds (the “Institutional Trust”), Vanguard, and Vanguard Marketing Corporation (“VMC”) (the “Institutional Management Agreement”). The Institutional Funds also receive transfer agency and shareholder servicing from Vanguard pursuant to a Shareholder Services Agreement, dated as of May 31, 2001, by and between Vanguard and the Institutional Trust (the “Institutional Shareholder Services Agreement” and together with the Institutional Management Agreement, the “Institutional Agreements”). The Institutional Funds currently are the only publicly-offered Vanguard U.S. mutual funds that are not a party to the proposed Service Agreement. If shareholders approve the adoption of the Service Agreement, the Institutional Funds will become member funds of the Vanguard group of investment companies, and will operate under the Service Agreement’s “internalized” management structure pursuant to exemptive orders issued by the Securities and Exchange Commission (“SEC”).

The proposed Service Agreement sets forth the terms under which the Vanguard funds capitalize, operate, and share the expenses of Vanguard. The Institutional Trust’s Board of Trustees (the “Institutional Board”) believes that adopting the Service Agreement will provide a number of benefits to shareholders, including reductions in expense ratios and minimum initial investment requirements for certain shareholders, harmonizing the

administrative, investment management, and distribution framework for all of Vanguard’s publicly offered mutual funds, and contributing to Vanguard’s long-term complex-level economies of scale.

Why are we proposing adoption of the Service Agreement?

The Institutional Funds were originally launched to provide large accounts with competitively priced investment funds purchased exclusively by institutional investors. Since then, the overall assets managed by Vanguard have increased significantly and are now sufficient to support the Institutional Funds’ pricing under the Service Agreement. At current asset levels, the Institutional Funds will transition to the proposed Service Agreement’s internalized structure at the same (Institutional Plus Shares), or even lower (Institutional Shares), expense ratios as under the current Institutional Agreements.

Why should I vote for this Proposal?

The Trustees of the Institutional Trust believe that this Proposal will provide significant benefits for the Institutional Funds’ shareholders. Adopting the Service Agreement will provide Institutional class shareholders of each Institutional Fund an immediate expense ratio reduction. Additionally, to maintain consistency with share class minimums for other Vanguard funds, the minimum initial investments for the Institutional Funds’ Institutional Plus share classes and the Institutional share class of the Institutional Total Stock Market Index Fund will be reduced. This reduction will offer more shareholders access to lower cost share classes. The tables below summarize these changes.

Share Class	Expense Ratio		Minimum Initial Investment	
	Current Expense Ratio	Proposed Expense Ratio	Current Minimum	Proposed Minimum
Institutional Index Fund				
Institutional	0.040%	0.035%	\$5M	\$5M
Institutional Plus	0.020%	0.020%	\$200M	\$100M
Institutional Total Stock Market Index Fund				
Institutional	0.040%	0.035%	\$100M	\$5M
Institutional Plus	0.020%	0.020%	\$200M	\$100M

Information regarding funds with similar investment objectives for which Vanguard acts as investment adviser, a more detailed comparison of the Institutional Funds' fees and expenses under the Institutional Agreements, as well as the projected fees and expenses under the Service Agreement is contained in Exhibit 6.1 to this proxy statement.

Finally, if the Institutional Funds adopt the Service Agreement, all of the publicly offered Vanguard mutual funds will share a consistent administrative, investment management, and distribution framework that benefits from the Vanguard fund complex's scale and mutual ownership structure. Harmonizing the terms and conditions under which Vanguard provides administrative, advisory, and distribution services to all of the Vanguard funds also will result in operational efficiencies and a uniform fund governance model.

What are the material terms of the Institutional Agreements and the Service Agreement, and how do the agreements compare?

The Institutional Funds currently receive advisory, administration, distribution, and shareholder services from Vanguard and VMC in accordance with the Institutional Agreements. Under the current Institutional Management Agreement, the Institutional Funds pay a fixed fee based on an annual percentage rate of 0.015% of each Institutional Fund's daily net assets for investment advisory and distribution services. Under the current Institutional Shareholder Services Agreement, Vanguard also provides transfer agency and shareholder services to the Institutional Funds based on a fixed annual percentage rate of net assets. For each Institutional Fund the fixed rate is 0.025% for Institutional Shares and 0.005% for Institutional Plus Shares. Under the current Institutional Agreements, the Institutional Funds do not contribute to the capital of Vanguard and do not receive investment advisory and distribution services based on Vanguard's costs of operations under the proposed Service Agreement.

Under the proposed Service Agreement, Vanguard will provide to the Institutional Funds corporate management, administrative, transfer agency, and investment advisory services, and Vanguard's internalized distributor and wholly-owned subsidiary, VMC, will provide distribution services based on Vanguard's and VMC's costs of operations as determined under the Service Agreement. Under the proposed Service Agreement, each Vanguard member fund pays its share of Vanguard's total expenses, which are allocated among the Vanguard funds under methods approved by the Boards of Trustees of each Vanguard fund. In addition, each fund bears its own direct expenses, such as legal, auditing, and custodial fees. A copy of the Service Agreement is included as Exhibit 6.2 of this proxy statement.

If shareholders approve adoption of the Service Agreement, the Institutional Funds' projected allocated expenses for these services will be 0.035% for Institutional Shares and 0.02% for Institutional Plus Shares of their respective net assets (versus 0.04% for Institutional Shares and 0.02% for Institutional Plus Shares under the current Institutional Agreements). Additionally, each Vanguard fund that is a party to the Service Agreement may be called to invest up to an additional 0.40% of its net assets in Vanguard. Historically, Vanguard has called upon the Vanguard funds to make additional capital contributions infrequently (most recently in 2008, and prior thereto in 1999).

Consistent with all other publicly available Vanguard funds, the amount of each Fund's initial capital contribution is adjusted from time to time in order to maintain the proportionate relationship between each Fund's relative net assets and its contribution to Vanguard's capital. Based on net assets as of May 31, 2017, the Institutional Index Fund's investment in Vanguard would be \$14,145,000, constituting 5.6574% of Vanguard's total capital and 0.0063% of the Fund's net assets, and the Institutional Total Stock Market Index Fund's investment in Vanguard would be \$2,478,000, constituting 0.9908% of Vanguard's total capital and 0.0063% of the Fund's net assets.

A description of the other material terms of the agreements follows.

Investment Advisory and Distribution Services

Current: The Institutional Funds receive a range of corporate, administrative, and investment advisory services from Vanguard and distribution services from VMC pursuant to the terms of the Institutional Agreements. Under the Institutional Management Agreement, Vanguard manages the investment and reinvestment of the Institutional Funds' assets and continuously reviews, supervises, and administers each of the Institutional Fund's investment program, and VMC manages and performs various distribution functions. Under the Institutional Shareholder Services Agreement, Vanguard performs shareholder services including maintaining shareholder records; processing shareholder orders; issuing shareholder statements and correspondence; acting as dividend disbursement agent; and preparing, filing, and distributing shareholder reports.

Proposed: Under the Service Agreement, Vanguard and VMC will perform identical services for the Institutional Funds pursuant to the Service Agreement's internalized management structure and based on Vanguard's costs of operations. Unlike other mutual fund complexes, each Vanguard fund that is a party to the Service Agreement shares in Vanguard's costs. Consequently, the Institutional Funds total annual operating expenses under

the Service Agreement will be equal to that portion of Vanguard's costs of operations that are allocated to the Institutional Funds based on board-approved methodologies. In addition, marketing and distribution expenses are allocated based on an SEC-approved formula. To ensure that each fund's allocation of marketing and distribution expenses falls within a reasonable range of fairness, one-half of VMC's marketing and distribution expenses are allocated among the Vanguard funds based on their relative net assets, and the remaining half are allocated among the funds based on each fund's sales for the preceding 24 months relative to the total sales of the Vanguard funds as a group, provided that no fund's aggregate quarterly rate of contribution for marketing and distribution expenses will exceed 125% of the average marketing and distribution expense rate for the Vanguard funds as a group and no fund will incur marketing and distribution expenses in excess of 0.20% of its average month-end net assets. While it is possible for the expenses allocated to the Institutional Funds under the Service Agreement to increase, Vanguard does not currently anticipate that the Institutional Funds' expense ratios will increase if shareholders adopt the Service Agreement.

Other Expenses

Current: The Institutional Agreements provide that Vanguard will be responsible for paying each Institutional Fund's trustees compensation, audit fees, outside legal counsel fees, custodian fees, registration and filing fees required by securities laws, and fidelity bond and officer and trustee insurance premiums.

Proposed: The Service Agreement requires that the Institutional Funds each bear the cost of these services.

Capitalization of Vanguard

Current: The Institutional Agreements do not require the Institutional Funds to invest in Vanguard.

Proposed: The Service Agreement sets forth the terms under which the Vanguard funds capitalize, operate, and share the expenses of Vanguard. The amounts that each fund has invested are adjusted from time to time in order to maintain the proportionate relationship between each fund's relative net assets and its contribution to Vanguard's capital. The Service Agreement also provides that each member fund may be called upon to invest up to 0.40% of its current net assets in Vanguard. Vanguard has called upon the Vanguard funds to make additional capital contributions infrequently.

Delegation of Duties

Current: The Institutional Agreements do not provide for delegation of Vanguard's or VMC's duties.

Proposed: Under the Service Agreement, Vanguard may establish wholly-owned subsidiaries, and supervise the management and operations of such subsidiaries, as are necessary or appropriate to carry on or support the business activities of the Institutional Funds. In addition, Vanguard may authorize such subsidiaries to perform such other functions for the Institutional Funds as Vanguard's board of directors may determine.

Duration and Termination

Current: The Institutional Management and Distribution Agreement may be terminated at any time with respect to an Institutional Fund, either by vote of the board of trustees for the Institutional Fund or by vote of a majority of the outstanding voting securities of the Institutional Fund, on sixty (60) days' written notice to Vanguard and VMC. Furthermore, the Institutional Management and Distribution Agreement may be terminated by Vanguard or VMC on ninety (90) days' written notice to an Institutional Fund. The Institutional Shareholder Services Agreement may be terminated at any time with respect to an Institutional Fund either by the Institutional Fund or Vanguard upon sixty (60) days' notice to the other party.

Proposed: A fund may elect to withdraw from the Service Agreement at the end of any monthly period by giving at least ninety (90) days' notice to each other party to the Service Agreement. Furthermore, upon the written demand of all other funds which are a party to the Service Agreement, a fund may be required to withdraw from the Service Agreement.

Liability and Indemnification

Current: The Institutional Agreements do not protect Vanguard against liability for willful misfeasance, bad faith, or gross negligence in the performance of its duties or the reckless disregard of its obligations under the Institutional Agreements.

Proposed: Under the Service Agreement, each Vanguard fund agrees to indemnify, hold harmless, and reimburse each other fund that is a party to the Service Agreement, Vanguard, and any subsidiary of Vanguard against costs and losses related to civil, criminal, or administrative litigation if the suit or loss is a result of being a party to the Service Agreement or from indirect participation in transactions contemplated by the Service Agreement and the suit or loss

is related primarily and substantially to the business of such fund. Such indemnification does not extend to a suit or loss for which the indemnified party has significant fault or responsibility as measured by the comparative conduct of the indemnifying party. A fund's obligations to another party to the Service Agreement are limited to expenses and losses actually incurred by the indemnified party.

Information about Vanguard and the Institutional Agreements

Vanguard is a Pennsylvania corporation that has been in the business of providing corporate, administrative, investment advisory, and distribution services since May 1975. The principal business address for Vanguard is 100 Vanguard Blvd., Malvern, Pennsylvania 19355. Vanguard is collectively owned by thirty-five Delaware statutory trusts, each of which is registered as an investment company under the Investment Company Act of 1940, as amended (the "Vanguard Trusts"). The Vanguard Trusts' series portfolios represent approximately 191 individual mutual funds which comprise the Vanguard family of mutual funds that are currently party to the FSA. As of May 31, 2017, Vanguard had assets under management of approximately \$3.4 trillion. A list of each Vanguard fund that owns 10% or more of the outstanding capital stock of Vanguard is included in Exhibit 6.3 to this proxy statement.

The names, addresses, and principal occupations of the principal executive officers and trustees of the Vanguard Trusts, along with the positions held by each, if any, with Vanguard are set forth in Part II of this proxy statement. The date of each Institutional Agreement, the aggregate amount of compensation paid to Vanguard under the Institutional Agreements for the prior fiscal year, and the date each Institutional Agreement was last submitted to shareholders and the purpose of such submission is set forth in Exhibit 6.4 to this proxy statement.

What factors did the Board consider in approving the Service Agreement?

At a Board meeting held on May 18-19, 2017, the Institutional Board considered whether to adopt the Service Agreement as a new investment advisory and distribution arrangement for the Institutional Funds. The Institutional Board determined that it was in the best interest of each of the Institutional Funds and their respective shareholders to adopt the Service Agreement's internalized management structure.

The Institutional Board considered the short- and long-term performance of the Institutional Funds and similar funds managed by Vanguard, including any periods of outperformance or underperformance compared with its target index and peer group. The Institutional Board concluded that the Institutional Funds performance closely tracked the performance of the Institutional Funds' benchmark indexes. The Institutional Board also determined that similar Vanguard funds managed under the Service Agreement tracked similar benchmark indexes closely, and concluded that the performance was such that the Service Agreement should be adopted.

- **Nature, extent, and quality of services**

The Institutional Board reviewed the quality of Vanguard's investment management services over both the short and long term and took into account the organizational depth and stability of the advisor. The Institutional Board considered that Vanguard has been managing investments for more than four decades. Vanguard, through its Equity Index Group, adheres to a sound, disciplined investment management process; the team has considerable experience, stability, and depth.

The Institutional Board concluded that Vanguard's experience, stability, depth, and performance, among other factors, warranted adoption of the Service Agreement.

- **Investment performance**

The Institutional Board considered the short- and long-term performance of the Institutional Funds and similar funds managed by Vanguard, including any periods of outperformance or underperformance compared with its target index and peer group. The Institutional Board concluded that the Institutional Funds performance closely tracked the performance of the Institutional Funds' benchmark indexes. The Institutional Board also determined that similar Vanguard funds managed under the Service Agreement tracked similar benchmark indexes closely, and concluded that the performance was such that the Service Agreement should be adopted.

- **Cost**

The Institutional Board concluded that each Institutional Fund's expense ratio was below the average expense ratio charged by funds in its peer group and that each Institutional Fund's advisory expenses were also below its peer group average. The Institutional Board also concluded that adoption of the Service Agreement's internalized management structure may lead to expense ratio reductions, reduced minimum initial investments for certain shareholders, and a harmonized administrative, investment management,

and distribution framework for all of Vanguard's publicly offered mutual funds, which collectively could further enhance long-term complex-level economies of scale.

The Institutional Board did not conduct a profitability analysis of Vanguard because of Vanguard's unique "at-cost" structure. Unlike most other mutual fund management companies, Vanguard is owned by the funds it oversees and produces "profits" only in the form of reduced expenses for fund shareholders.

- **The benefit of economies of scale**

The Institutional Board concluded that adopting the Service Agreement with Vanguard ensures that each Institutional Fund will realize economies of scale as it grows, with the cost to shareholders declining as fund assets increase.

What actions has the Board taken since the Institutional Funds' last fiscal year with respect to the Institutional Agreements?

At the March 23-24, 2017, Board meeting, the Institutional Board, on behalf of each of the Institutional Funds, re-approved the continuation of the Institutional Agreements for an additional twelve-month period. The Institutional Board has taken no other actions with respect to the Institutional Agreements since the end of the last fiscal year.

What are the amounts paid to Vanguard for similar funds it advises?

Exhibit 6.1 to this proxy statement provides a list of mutual funds with similar investment objectives to the Institutional Funds for which Vanguard acts as investment advisor, as well as the annual expense ratios and size of those mutual funds.

Transactions with Affiliated Brokers

For the fiscal year ended December 31, 2016, the Institutional Funds did not pay any commissions to brokers that were affiliated persons of the Institutional Funds, or affiliated persons of such persons.

When will the Service Agreement go into effect?

If the Institutional Funds' shareholders approve the adoption of the Service Agreement, it is expected to become effective as soon as practicable after the vote is obtained. Following such date, the Service Agreement will remain in full force and effect, unless otherwise terminated, for a period of two years. Thereafter, the Institutional Board will consider continuation of the Service Agreement on an annual basis.

**EACH FUND'S BOARD OF TRUSTEES RECOMMENDS
THAT YOU VOTE "FOR" PROPOSAL 6.**

Proposal 7—

A shareholder proposal to institute transparent procedures to avoid holding investments in companies that, in management’s judgement, substantially contribute to genocide or crimes against humanity, the most egregious violations of human rights. Such procedures may include time-limited engagement with problem companies if management believes that their behavior can be changed.

> This proposal applies to the following Vanguard funds: 500 Index Fund; Capital Opportunity Fund; Developed Markets Index Fund; Dividend Appreciation Index Fund; Emerging Markets Stock Index Fund; Energy Fund; Energy Index Fund; Equity Income Fund; European Stock Index Fund; Extended Market Index Fund; FTSE All-World ex-US Index Fund; FTSE Social Index Fund; Global Equity Fund; GNMA Fund; Growth Index Fund; Health Care Fund; Inflation-Protected Securities Fund; Institutional Index Fund; Intermediate-Term Bond Index Fund; Intermediate-Term Treasury Fund; International Explorer Fund; International Growth Fund; International Value Fund; LifeStrategy Moderate Growth Fund; Long-Term Treasury Fund; Mid-Cap Index Fund; Mid-Cap Value Index Fund; Morgan Growth Fund; Municipal Money Market Fund; Pacific Stock Index Fund; Precious Metals and Mining Fund; Prime Money Market Fund; REIT Index Fund; Short-Term Bond Index Fund; Short-Term Tax-Exempt Fund; Short-Term Treasury Fund; Small-Cap Growth Index Fund; Small-Cap Index Fund; Small-Cap Value Index Fund; STAR Fund; Tax-Managed Small-Cap Fund; Total Bond Market Index Fund; Total International Stock Index Fund; Total Stock Market Index Fund; Value Index Fund; Balanced Portfolio of the Vanguard Variable Insurance Fund; Wellington Fund; Windsor Fund; and Windsor II Fund.

Certain shareholders of the funds identified above have advised the funds that they intend to present the following shareholder proposal at the meeting.

For the reasons set forth after the Proposal, the board of trustees recommends a vote “AGAINST” the proposal. No fund is responsible for the contents of the proposal or the supporting statements. A fund will provide the names, addresses, and shareholdings (to the fund’s knowledge) of the proponents of a shareholder proposal, to shareholders of that fund, if they write to the funds’ secretary at the following address: Anne E. Robinson, V26, The Vanguard Group, Inc., P.O. Box 2600, Valley Forge, PA 19482-2600 or call 844-850-2151, or you can send your request by email to proxyinquiries@vanguard.com.

The proponents submitted the following proposal, which is included as we received it, without modification:

WHEREAS:

We believe that:

1. Investors do not want their investments to help fund genocide.
 - a) While reasonable people may disagree about socially responsible investing, few want their investments to help fund genocide.
 - b) KRC Research’s 2010 study showed that 88% of respondents want their mutual funds to be genocide-free.
 - c) Millions of Vanguard investors have voted for genocide-free investing proposals, submitted by supporters of Investors Against Genocide, despite active management opposition. As many as 17% of Vanguard shareholders voted in favor in 2009.
 - d) In 2012, a genocide-free investing proposal at an ING mutual fund passed decisively, 59.8% to 10.7% with 29.5% abstaining.
2. The example of PetroChina shows that current policies do not adequately support genocide-free investing because Vanguard and the funds it manages:
 - a) Are large and long-term investors in PetroChina. For example, SEC filings show Vanguard held \$835 million of PetroChina as of April 30, 2013. PetroChina, through its controlling shareholder, China National Petroleum Company, is Sudan’s largest business partner, thereby helping fund ongoing government sponsored genocide and crimes against humanity.
 - b) Unnecessarily expose shareholders to the significant financial, operational and reputational risks of the China National Petroleum group’s operations in areas affected by genocide and mass atrocities.
 - c) Actively opposed earlier shareholder requests for genocide-free investing.
 - d) Continued to buy shares of problem companies even after becoming aware of the investments’ connection to genocide in the Darfur region of Sudan.
 - e) Claimed to have a policy addressing extreme human rights issues that was “substantially identical” to genocide-free investing, but has taken no action to avoid problem investments.
 - f) Made investments in PetroChina that, while legal, are inconsistent with U.S. sanctions explicitly prohibiting transactions relating to Sudan’s petroleum industry.

3. Individuals, through ownership of shares of Vanguard funds, may inadvertently invest in companies that help support genocide. With no policy to prevent these investments, Vanguard may at any time add or increase holdings in problem companies.

4. No sound reasons prevent having a genocide-free investing policy because:

- a) Ample alternative investments exist.
- b) Avoiding problem companies need not have a significant effect on investment performance, as shown in Gary Brinson's classic asset allocation study.
- c) Only a handful of Vanguard's U.S. funds would be affected.
- d) Appropriate disclosure can address any legal concerns regarding the exclusion of problem companies.
- e) Management can easily obtain independent assessments to identify companies connected to genocide.
- f) Other large financial firms such as T. Rowe Price and TIAA-CREF have avoided investments connected to genocide by divesting problem companies such as PetroChina.

5. Investor action can influence foreign governments, as in South Africa. Similar action on Talisman Energy helped end the conflict in South Sudan.

RESOLVED:

Shareholders request that the Board institute transparent procedures to avoid holding investments in companies that, in management's judgment, substantially contribute to genocide or crimes against humanity, the most egregious violations of human rights. Such procedures may include time-limited engagement with problem companies if management believes that their behavior can be changed.

This concludes the proponents' statement regarding the proposal.

The trustees' response to the shareholder proposal and recommendation

The trustees of the Funds recommend that you vote against this proposal. While the humanitarian issues on which this proposal is ultimately focused are of consequence and deep concern, meaningful long-term solutions to these issues require diplomatic and political resources to come together to implement change. Importantly, your Funds are compliant with all applicable U.S. laws on this matter. In addition, the proposal would interfere with the advisors' fiduciary duty to manage your Funds in line with their investment objectives

and strategies. Finally, we believe that the divestment contemplated by the proposal would be an ineffective means to implement the social change it seeks.

Vanguard is fully compliant with all applicable U.S. laws and regulations.

The United States government, through its policymakers, has established a clear legal framework wherein investments in companies that are owned or controlled by the government of Sudan, among other countries, are prohibited. The proposal does not take into account that the Funds are compliant with these laws.

As an investment firm with a very large client base, Vanguard is periodically asked by clients to modify our investments for a variety of reasons—from environmental and social issues to humanitarian and political concerns. We simply cannot manage the Funds in an effective manner that would address all of these issues as well as, or better than, policymakers while fulfilling our fiduciary obligation to shareholders.

The addition of further investment constraints is not in Fund shareholders' best interests.

Placing additional and specifically prescriptive constraints on a portfolio manager's investable universe, based on factors unrelated to a Fund's stated investment objective and/or investment strategies, could interfere with the Fund's obligation to its investors. Each of the Vanguard funds is required to invest shareholders' assets pursuant to a given fund's stated objective. In the case of actively managed funds, which seek to provide varying degrees of current income and/or long-term capital appreciation, they are managed in adherence to tightly prescribed parameters related to the geography, size, sector, and/or style (e.g., growth vs. value) of the companies in which they invest. Constraints imposed by third-parties could impair the ability of portfolio managers to provide Fund shareholders investment returns that are competitive with similar funds. Index funds typically seek to track the performance of a benchmark index that represents either the broad market or a subset of the market based on geography, size, sector, and/or style. As such, limiting a Fund's ability to invest in all of the constituent companies in its benchmark index could introduce deviation (i.e., tracking error) between the Fund's performance and that of its benchmark index, which would be detrimental to the Fund's shareholders.

Divestment is an ineffective means to implement social change.

The trustees believe that divestment—especially in cases where a company bears no direct relation to the issue at hand—is a particularly ineffective remedy. Selling a company’s shares into the secondary market (i.e., not back to the subject company itself) has no direct impact on the company’s capitalization, and it simply puts the shares into the hands of another owner (one perhaps with less concern for the underlying issues). Additionally, as investors in publicly traded companies, the Funds are not well poised to influence matters that extend well beyond the operations of their portfolio companies. While we understand the concerns of shareholders who have submitted the proposal, we believe that ending genocide requires diplomatic and political solutions.

EACH FUND’S BOARD OF TRUSTEES RECOMMENDS THAT YOU VOTE “AGAINST” PROPOSAL 7.

Part III Information on the Funds’ Independent Accountants

Selection of PricewaterhouseCoopers as Independent Accountants.

The independent trustees of each Vanguard fund have selected PricewaterhouseCoopers LLP (PwC) as independent accountants to audit the funds’ financial statements. Representatives of PwC are not expected to be present at the meeting or available to make a statement or respond to any shareholders’ questions.

In addition to serving as independent accountants, PwC has provided limited nonaudit services (primarily tax services unrelated to fund audits) to both the Vanguard funds and The Vanguard Group, Inc. The independent trustees carefully considered these nonaudit services when evaluating PwC’s independence for purposes of its selection as the funds’ independent accountants. In a letter to the funds’ audit committee dated June 30, 2017, PwC confirmed its status as independent accountants with respect to the Vanguard funds within the meaning of the federal securities laws.

In the event of a contingency situation in which PwC is needed to provide services in between scheduled audit committee meetings, the chairman of the audit committee would be called on to consider and, if appropriate, pre-approve audit or permitted nonaudit services in an amount sufficient to complete services through the next audit committee meeting, and to determine if such services would be consistent with maintaining PwC’s independence. At the next scheduled audit committee meeting, services and fees would be presented to the audit committee for formal consideration, and, if appropriate, approval by the entire audit committee. The audit committee would again consider whether such services and fees are consistent with maintaining PwC’s independence.

The funds’ audit committee is informed at least annually of all audit and nonaudit services provided by PwC to the Vanguard complex, whether such services are provided to Vanguard funds, The Vanguard Group, Inc., or other entities controlled by The Vanguard Group, Inc. that provide ongoing services to the funds.

PwC Audit Reports. PwC’s audit report for each Vanguard fund’s last two most recently ended fiscal years did not contain any adverse opinions or disclaimers of opinion, nor did PwC qualify or modify such reports as to uncertainty, audit scope, or accounting principles. Further, there were no disagreements between any of the Vanguard funds and PwC in three key areas—(1) accounting principles and practices, (2) financial statement disclosures, and (3) audit scope and procedures—that, if not resolved to PwC’s satisfaction, would have caused the accountants to reference the matter in their audit reports.

Fund-Related Audit Fees Paid to PwC. The Vanguard funds are organized under 37 separate trusts, each of which paid PwC the approximate amount shown in the table below as audit fees for the trust's last two most recently ended fiscal years. Audit fees are fees incurred by PwC for the audit of each trust's annual financial statements or services that are normally provided by PwC in connection with statutory and regulatory filings or engagements during a fiscal year. The audit fees disclosed also include audit-related fees (the aggregate fees billed for assurance and related services by PwC that are reasonably related to the performance of the audit of each trust's financial statements), as well as tax compliance services performed in connection with the audits. Please refer to Part V of this proxy statement for the name of the trust to which each Vanguard fund belongs.

Trust	Audit Fees	
	2016	2015
Vanguard Admiral® Funds	\$286,000	\$229,000
Vanguard Bond Index Funds	281,000	274,000
Vanguard California Tax-Free Funds	102,000	97,000
Vanguard Charlotte Funds	48,000	49,000
Vanguard Chester Funds	35,000	737,000
Vanguard CMT Funds	54,000	53,000
Vanguard Convertible Securities Fund	43,000	42,000
Vanguard Explorer® Fund	46,000	44,000
Vanguard Fenway Funds	69,000	67,000
Vanguard Fixed Income Securities Funds	428,000	439,000
Vanguard Horizon Funds®	149,000	142,000
Vanguard Index Funds	505,000	484,000
Vanguard Institutional Index Funds	72,000	69,000
Vanguard International Equity Index Funds	318,000	307,000
Vanguard Malvern Funds	295,000	190,000
Vanguard Massachusetts Tax-Exempt Funds	35,000	34,000
Vanguard Money Market Reserves	69,000	66,000
Vanguard Montgomery Funds	28,000	53,000
Vanguard Morgan Growth Fund	45,000	37,000
Vanguard Municipal Bond Funds	243,000	207,000
Vanguard New Jersey Tax-Free Funds	66,000	63,000
Vanguard New York Tax-Free Funds	66,000	63,000
Vanguard Ohio Tax-Free Funds	65,000	63,000
Vanguard Pennsylvania Tax-Free Funds	66,000	63,000

Trust (continued)	Audit Fees	
	2016	2015
Vanguard Quantitative Funds	111,000	101,000
Vanguard Scottsdale Funds	610,000	579,000
Vanguard Specialized Funds	216,000	235,000
Vanguard STAR Funds	315,000	200,000
Vanguard Tax-Managed Funds®	159,000	154,000
Vanguard Trustees' Equity Fund	152,000	131,000
Vanguard Valley Forge Funds	25,000	44,000
Vanguard Variable Insurance Funds	535,000	539,000
Vanguard Wellesley Income Fund	34,000	33,000
Vanguard Wellington Fund	40,000	38,000
Vanguard Whitehall Funds	277,000	224,000
Vanguard Windsor Funds	94,000	75,000
Vanguard World Fund	611,000	578,000
Total Audit Fees	\$6,593,000	\$6,803,000

All Other Fees Paid to PwC. For the years ended December 31, 2016, and December 31, 2015, PwC was paid approximately \$79,500 and \$95,760, respectively, for all nonaudit services rendered to the Vanguard funds, including SEC registration statement procedures. For those same two years, PwC was paid approximately \$3,468,406, and \$3,185,902, respectively, for nonaudit services provided to The Vanguard Group, Inc. and certain of its affiliates. This amount includes attestation reporting services in connection with service organization controls reporting and other attestation services (e.g., custody rule). Attestation reporting services includes reporting over transfer agent operations, defined contribution recordkeeping services, variable annuity and insurance administration services, Personal Advisor Services, and brokerage compliance. Other nonaudit services also includes tax compliance and advisory services. No fees were paid to PwC by any Vanguard entity for design or implementation of financial information systems.

Part IV

More on Proxy Voting and Shareholder Meetings

Votes Needed to Elect Trustees (Proposal 1). Shareholders of funds that are part of the same trust will elect their trustees on a joint basis. (A list of funds and the trust of which each fund is a series is included in Part V of this proxy statement.) For each trust, the twelve nominees receiving the highest number of affirmative votes cast at the meeting will be elected.

Communications with Trustees. Vanguard fund shareholders may communicate with one or more trustees, or the overall board, by sending written correspondence to the attention of one or more individual trustees, or the overall board, at The Vanguard Group, Inc., P.O. Box 876, Mailstop V26, Valley Forge, PA 19482. The current process regarding this type of communication requires that all such correspondence be logged upon receipt, and then provided to the intended recipient(s), as appropriate. The recipient(s) will then review the shareholder correspondence and determine how to respond.

Votes Needed to Approve Proposals 2–7. Shareholders of each fund will vote separately on each proposal applicable to that fund. For a proposal to pass for a fund, it must be approved by the lesser of (1) 67% or more of the fund's voting securities present at the meeting, if the holders of more than 50% of the fund's outstanding voting shares are present or represented by proxy, or (2) more than 50% of the fund's outstanding voting securities.

Proxy Solicitation Methods. The funds will solicit shareholder proxies in a variety of ways. All shareholders who are entitled to vote will receive these proxy materials either by mail or electronically (assuming that applicable requirements are met). In addition, the funds have engaged the services of Computershare Fund Services (CFS) to lead in the solicitation of proxies for the shareholder meeting by telephone, by mail, and/or over the internet. Vanguard employees and officers may assist in the solicitation of proxies for the shareholder meeting.

Proxy Solicitation Costs. Each fund will pay all costs of soliciting proxies from its shareholders, including costs relating to the printing, mailing, and tabulation of proxies. CFS's solicitation costs for the funds are currently estimated to be approximately \$17,584,007 and will be allocated across the funds proportionately, according to a fixed formula. By voting immediately, you can help your fund avoid the considerable expense of a second proxy solicitation.

Quorum. Each fund must achieve a quorum in order for the shareholder meeting to go forward. This means that more than thirty-three and one-third percent (33 1/3%) of the total combined net asset value of a fund's shares must be represented at the meeting, either in person or by proxy. All returned proxies count toward a quorum, regardless of how they are voted ("For," "Against," or "Abstain"). The funds will count abstentions and broker non-votes toward establishing a quorum and as votes "Against" proposals 2–7. (A broker non-vote is a proxy received from a broker who holds fund shares on behalf of an investor, but who does not have discretionary power to vote the shares on the investor's behalf, indicating that the broker has not received instructions from the investor on the matter at issue.) Signed, dated proxy cards and voting instruction cards returned to Vanguard without a choice indicated as to the applicable proposals shall be voted "For" proposals 1–6 and "Against" proposal 7.

Adjournment. If a quorum is not present or represented at the shareholder meeting, either the chairman of the meeting (without a shareholder vote) or the holders of a majority of the votes present in person or by proxy shall have the power to adjourn the meeting from time to time, without notice other than announcement at the meeting, until a quorum shall be present or represented. At such adjourned meeting at which a quorum shall be present or represented, any business may be transacted that might have been transacted at the meeting as originally notified. The shareholders of record entitled to vote at such adjourned meeting shall be deemed to be the shareholders on the original record date, unless the trustees have fixed a new record date.

Revoking Your Proxy. Your latest vote is the one that counts. Therefore, you can revoke a prior proxy simply by voting again—over the internet, with your proxy card or voting instruction card, or by calling a toll-free phone number. You can also revoke a prior proxy by writing to the funds' secretary at the following address: Anne E. Robinson, V26, The Vanguard Group, Inc., P.O. Box 2600, Valley Forge, PA 19482-2600, or by voting in person at the meeting. You may revoke your proxy at any time up until voting results are announced at the shareholder meeting.

Shareholder Proposals. Any shareholder proposals to be included in the proxy statement for a fund's next meeting of shareholders must be received by the fund within a reasonable period of time prior to that meeting. None of the funds currently plan to hold a meeting of shareholders in 2018.

Voting Rights. Shareholders are entitled to cast one vote for each dollar of fund net assets owned on the record date and a fractional vote for each fractional dollar of net assets owned on that date.

Nominee Accounts. Upon request, the Vanguard funds will reimburse nominees for their reasonable expenses in forwarding proxy materials to beneficial owners of the funds' shares. Please submit invoices for our review to: Anne E. Robinson, V26, The Vanguard Group, Inc., P.O. Box 2600, Valley Forge, PA 19482-2600.

Annual/Semiannual Reports. Each fund's most recent annual and semiannual reports to shareholders are available at no cost. You may read, print, or request mail delivery of a copy through our website at www.vanguard.com. You may also request a report by calling us toll-free at 800-662-7447 or by writing to us at the principal executive offices of the funds at P.O. Box 2600, Valley Forge, PA 19482-2600. Participants in an employer-sponsored 401(k) or other retirement plan administered by Vanguard should call us at 800-523-1188.

Other Matters. At this point, we know of no other business to be brought before the shareholder meeting. However, if any other matters do come up, we will use our best judgment to vote on your behalf. If you object to our voting other matters on your behalf, please tell us so in writing before the meeting.

The Vanguard Group, Inc. Except as noted below, each of the Vanguard funds soliciting proxies is a member of Vanguard. Vanguard is owned jointly by the funds it oversees. Vanguard provides the funds—195 distinct investment portfolios—with their corporate management, administrative, and distribution services. Vanguard Marketing Corporation, 100 Vanguard Boulevard, Malvern, PA 19355, a wholly-owned subsidiary of Vanguard, is the funds' distributor.

The funds organized under Vanguard Institutional Index Funds (Institutional Index Fund and Institutional Total Stock Market Index Fund) currently are not members of Vanguard, although they are administered by and pay fees to Vanguard for management, advisory, marketing, accounting, transfer agency, and other services. However, in Proposal 6, these funds' board of trustees have recommended that shareholders approve the Service Agreement between Vanguard and the Vanguard funds in order to bring these funds in line with the funds that currently are members of Vanguard.

Part V Fund and Investment Advisor Information

This section includes a list of the names and addresses of all of the Vanguard funds' investment advisors. The name(s) of each fund's investment advisor(s) is provided below under "Vanguard Fund Information."

Advisor	Address
Acadian Asset Management LLC	260 Franklin Street, Boston, MA 02110
ARGA Investment Management, LP	1010 Washington Boulevard, 6th Floor, Stamford, CT 06901
ArrowMark Colorado Holdings, LLC	100 Fillmore Street, Suite 325, Denver, CO 80206
Baillie Gifford Overseas Ltd.	Calton Square, 1 Greenside Row, Edinburgh, EH1 3AN Scotland
Barrow, Hanley, Mewhinney & Strauss, LLC	2200 Ross Avenue, 31st Floor, Dallas, TX 75201
Cardinal Capital Management L.L.C.	Four Greenwich Office Park, Third Floor, Greenwich, CT 06831
ClearBridge Investments, LLC	620 Eighth Avenue, 48th Floor, New York, NY 10018
D. E. Shaw Investment Management, L.L.C.	1166 Avenue of the Americas, Ninth Floor, New York, NY 10036
Donald Smith & Co., Inc.	152 West 57th Street, 22nd Floor, New York, NY 10019
Edinburgh Partners Limited	27-31 Melville Street, Edinburgh, EH3 7JF, Scotland
Frontier Capital Management Co., LLC	99 Summer Street, 20th Floor, Boston, MA 02110
Hotchkis & Wiley Capital Management, LLC	725 South Figueroa Street, 39th Floor, Los Angeles, CA 90017
Jackson Square Partners, LLC	101 California Street, Suite 3750, San Francisco, CA 94111
Jennison Associates LLC	466 Lexington Avenue, New York, NY 10017
Lazard Asset Management LLC	30 Rockefeller Plaza, 57th Floor, New York, NY 10112
Los Angeles Capital Management and Equity Research, Inc.	11150 Santa Monica Boulevard, Suite 200, Los Angeles, CA 90025
M&G Investment Management Limited	Laurence Pountney Hill, London, EC4R 0HH, England
Marathon Asset Management LLP	Orion House, 5 Upper St. Martin's Lane, London, WC2H 9EA, England

Advisor	Address
Oaktree Capital Management, L.P.	333 South Grand Avenue, 28th Floor, Los Angeles, CA 90071
PRIMECAP Management Company	177 East Colorado Blvd., 11th Floor, Pasadena, CA 91105
Pzena Investment Management, LLC	320 Park Avenue, 8th Floor, New York, NY 10022
Sanders Capital, LLC	390 Park Avenue, #17, New York, NY 10022
Schroder Investment Management North America Inc.	875 Third Avenue, 22nd Floor, New York, NY 10022-6225
Schroder Investment Management North America Ltd.	31 Gresham Street, London, EC2V 7QA, England
Stephens Investment Management Group, LLC	111 Center Street, Suite 2110, Little Rock, AR 72201
The Vanguard Group, Inc.	P.O. Box 2600, Valley Forge, PA 19482
Victory Capital Management Inc., through its RS investment franchise	4900 Tiedeman Road, 4th Floor, Brooklyn, OH 44144
Wellington Management Company LLP	280 Congress Street, Boston, MA 02210
William Blair Investment Management, LLC	222 West Adam Street, Chicago, IL 60606

Vanguard Fund Information

This section provides certain required information for each of the Vanguard funds. The funds appear in alphabetical order and all information presented is as of May 31, 2017. The year in parentheses is the fund's year of inception. Among other things, we list the trustee nominees' beneficial ownership of each fund's shares based on certain dollar ranges. All trustees allocate personal assets among the Vanguard funds according to their own investment needs. Each trustee nominee owns over \$100,000 in shares of Vanguard funds. As a group, each fund's trustees and officers own less than 1% of the outstanding shares of that fund. As we explained earlier in this statement, Mr. McNabb currently is the only interested trustee of the Vanguard funds. All other trustees are independent of Vanguard and the Vanguard funds.

Vanguard 500 Index Fund (1976)

- A series of Vanguard Index Funds.
- Advised by The Vanguard Group, Inc.
- Net assets of \$324,562,476,521 and 1,553,611,922 outstanding shares.
- Nominees who own shares of this fund: FULLWOOD, over \$100,000; GUTMANN, over \$100,000; HEISEN, over \$100,000; VOLANAKIS, over \$100,000.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
Admiral Shares	Charles Schwab & Co., Inc., San Francisco, CA	5.89%
ETF Shares	Charles Schwab & Co., Inc.	8.59%
	The Bank of New York Mellon	8.58%
	National Financial Services LLC	8.35%
	Vanguard Marketing Corporation	6.91%
	Northern Trust Company, The	6.38%
	JPMorgan Chase Bank, National Association	5.63%
	State Street Bank and Trust Company	5.52%
Institutional Select Shares	Vanguard Institutional 500 Index Trust, Valley Forge, PA	99.99%
Investor Shares	Charles Schwab & Co., Inc., San Francisco, CA	17.34%
	National Financial Services, Jersey City, NJ	11.76%

Vanguard Alternative Strategies Fund (2015)

- A series of Vanguard Trustees' Equity Fund.
- Advised by The Vanguard Group, Inc.
- Net assets of \$268,506,507 and 13,218,251 outstanding shares.
- Nominees who own shares of this fund: NONE.

- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
Investor Shares	Vanguard Managed Payout Fund, Valley Forge, PA	86.13%

Vanguard Balanced Index Fund (1992)

- A series of Vanguard Valley Forge Funds.
- Advised by The Vanguard Group, Inc.
- Net assets of \$33,723,512,906 and 1,030,062,542 outstanding shares.
- Nominees who own shares of this fund: NONE.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
Institutional Shares	Fidelity Investments Institutional Operations Company, Inc., Covington, KY	14.84%
	Minnesota State Retirement System Defined Contribution Plan, Saint Paul, MN	7.98%
	TIAA-CREF Trust Company, FSB, Saint Louis, MO	7.55%
	Mac & Co., Pittsburgh, PA	5.03%
Investor Shares	National Financial Services, Jersey City, NJ	17.80%
	Charles Schwab & Co., Inc., San Francisco, CA	15.95%

Vanguard California Intermediate-Term Tax-Exempt Fund (1994)

- A series of Vanguard California Tax-Free Funds.
- Advised by The Vanguard Group, Inc.
- Net assets of \$12,015,861,062 and 1,015,442,767 outstanding shares.
- Nominees who own shares of this fund: NONE.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
Admiral Shares	Charles Schwab & Co., Inc., San Francisco, CA	22.25%
	National Financial Services, Jersey City, NJ	6.56%
Investor Shares	Charles Schwab & Co., Inc., San Francisco, CA	46.45%
	National Financial Services, Jersey City, NJ	14.25%

Vanguard California Long-Term Tax-Exempt Fund (1986)

- A series of Vanguard California Tax-Free Funds.
- Advised by The Vanguard Group, Inc.
- Net assets of \$3,764,906,980 and 309,843,139 outstanding shares.
- Nominees who own shares of this fund: NONE.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
Investor Shares	Charles Schwab & Co., Inc., San Francisco, CA	31.80%
	National Financial Services, Jersey City, NJ	10.86%

Vanguard California Municipal Money Market Fund (1987)

- A series of Vanguard California Tax-Free Funds.
- Advised by The Vanguard Group, Inc.
- Net assets of \$3,822,597,200 and 3,821,873,514 outstanding shares.
- Nominees who own shares of this fund: NONE.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares: NONE.

Vanguard Capital Opportunity Fund (1995)

- A series of Vanguard Horizon Funds®.
- Advised by PRIMECAP Management Company.
- Net assets of \$15,915,704,931 and 133,239,801 outstanding shares.
- Nominees who own shares of this fund: FULLWOOD, over \$100,000; HEISEN, over \$100,000; MCNABB, over \$100,000.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
Admiral Shares	State Street Bank & Trust Co. as trustee for the New York State Deferred Compensation Plan, Quincy, MA	7.28%
	Ohio Public Employees Deferred Compensation Plan, Columbus, OH	5.71%
Investor Shares	Charles Schwab & Co., Inc., San Francisco, CA	8.20%
	National Financial Services LLC, Jersey City, NJ	5.99%

Vanguard Capital Value Fund (2001)

- A series of Vanguard Malvern Funds.
- Advised by Wellington Management Company LLP.
- Net assets of \$910,976,312 and 73,558,615 outstanding shares.
- Nominees who own shares of this fund: BUCKLEY, over \$100,000; VOLANAKIS, \$10,001-\$50,000.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
Investor Shares	Vanguard Diversified Equity Fund, Valley Forge, PA	7.36%

Vanguard Consumer Discretionary Index Fund (2004)

- A series of Vanguard World Fund.
- Advised by The Vanguard Group, Inc.
- Net assets of \$2,494,160,016 and 18,826,790 outstanding shares.
- Nominees who own shares of this fund: NONE.

- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
ETF Shares	Vanguard Marketing Corporation	11.70%
	Charles Schwab & Co., Inc.	10.71%
	Merrill Lynch, Pierce, Fenner & Smith	10.49%
	TD Ameritrade Clearing, Inc.	10.05%
	UBS Financial Services LLC	7.86%
	National Financial Services LLC	7.64%
	First Clearing, LLC	6.00%

Vanguard Consumer Staples Index Fund (2004)

- A series of Vanguard World Fund.
- Advised by The Vanguard Group, Inc.
- Net assets of \$4,494,501,738 and 36,331,958 outstanding shares.
- Nominees who own shares of this fund: NONE.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
Admiral Shares	National Financial Services LLC, Jersey City, NJ	10.90%
ETF Shares	Merrill Lynch, Pierce, Fenner & Smith	20.61%
	Vanguard Marketing Corporation	16.30%
	National Financial Services LLC	11.39%
	Charles Schwab & Co., Inc.	11.28%
	TD Ameritrade Clearing, Inc.	8.93%

Vanguard Convertible Securities Fund (1986)

- A series of Vanguard Convertible Securities Fund.
- Advised by Oaktree Capital Management, L.P.
- Net assets of \$1,385,318,096 and 105,124,145 outstanding shares.
- Nominees who own shares of this fund: PEROLD, \$50,001–\$100,000; VOLANAKIS, over \$100,000.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
Investor Shares	Mac & Co., Pittsburgh, PA	7.07%

Vanguard Core Bond Fund (2016)

- A series of Vanguard Malvern Funds.
- Advised by The Vanguard Group, Inc.
- Net assets of \$765,902,549 and 42,447,287 outstanding shares.

- Nominees who own shares of this fund: BUCKLEY, over \$100,000; VOLANAKIS, over \$100,000.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
Admiral Shares	Charles Schwab & Co., Inc., San Francisco, CA	24.70%
Investor Shares	Charles Schwab & Co., Inc., San Francisco, CA	9.76%
	National Financial Services, Jersey City, NJ	5.07%

Vanguard Developed Markets Index Fund (1999)

- A series of Vanguard Tax-Managed Funds®.
- Advised by The Vanguard Group, Inc.
- Net assets of \$86,429,653,176 and 3,523,713,371 outstanding shares.
- Nominees who own shares of this fund: LOUGHREY, over \$100,000; MCNABB, over \$100,000; VOLANAKIS, over \$100,000.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
Admiral Shares	Charles Schwab & Co., Inc., San Francisco, CA	11.58%
	National Financial Services, Jersey City, NJ	7.86%
ETF Shares	Charles Schwab & Co., Inc.	12.39%
	National Financial Services LLC	8.53%
	TD Ameritrade Clearing, Inc.	7.95%
	Ridge Clearing & Outsourcing Solutions, Inc.	6.48%
	First Clearing, LLC	6.45%
Institutional Shares	National Financial Services, Jersey City, NJ	17.71%
	Charles Schwab & Co., Inc., San Francisco, CA	7.49%
Institutional Plus Shares	Mac & Co. A/C 286813, Pittsburgh, PA	8.82%
	Chevron Employee Savings Investment Plan 095555, San Ramon, CA	8.59%
	State of Utah Educational Savings Plan, Salt Lake City, UT	8.52%
	Mac & Co. A/C 727399, Pittsburgh, PA	7.68%
	State of Michigan Retirement Systems, East Lansing, MI	5.98%
Investor Shares	National Financial Service, Jersey City, NJ	5.02%
	Charles Schwab & Co., Inc., San Francisco, CA	17.29%
	National Financial Services, Jersey City, NJ	11.42%

Vanguard Diversified Equity Fund (2005)

- A series of Vanguard Trustees' Equity Fund.
- Advised by The Vanguard Group, Inc.
- Net assets of \$1,367,443,338 and 41,581,413 outstanding shares.
- Nominees who own shares of this fund: VOLANAKIS, \$50,001–\$100,000.

- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares: NONE.

Vanguard Dividend Appreciation Index Fund (2006)

- A series of Vanguard Specialized Funds.
- Advised by The Vanguard Group, Inc.
- Net assets of \$30,204,138,095 and 479,011,748 outstanding shares.
- Nominees who own shares of this fund: LOUGHREY, over \$100,000; RASKIN, \$50,001–\$100,000; VOLANAKIS, over \$100,000.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
Admiral Shares	National Financial Services, Jersey City, NJ	10.40%
ETF Shares	Charles Schwab & Co., Inc.	16.06%
	National Financial Services LLC	12.27%
	Merrill Lynch, Pierce, Fenner & Smith	11.72%
	Vanguard Marketing Corporation	7.29%
	TD Ameritrade Clearing, Inc.	6.42%
	Morgan Stanley DW Inc.	6.15%
	Pershing LLC	5.17%
	Investor Shares	Charles Schwab & Co., Inc., San Francisco, CA
	National Financial Services, Jersey City, NJ	18.46%

Vanguard Dividend Growth Fund (1992)

- A series of Vanguard Specialized Funds.
- Advised by Wellington Management Company LLP.
- Net assets of \$31,911,637,898 and 1,255,339,133 outstanding shares.
- Nominees who own shares of this fund: VOLANAKIS, over \$100,000.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
Investor Shares	Charles Schwab & Co., Inc., San Francisco, CA	12.38%
	National Financial Services, Jersey City, NJ	11.83%

Vanguard Emerging Markets Bond Fund (2016)

- A series of Vanguard Malvern Funds.
- Advised by The Vanguard Group, Inc.
- Net assets of \$11,719,391 and 1,113,506 outstanding shares.
- Nominees who own shares of this fund: NONE.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
Investor Shares	Vanguard Marketing Corp. FBO 21607041, Valley Forge, PA	99.57%

Vanguard Emerging Markets Government Bond Index Fund (2013)

- A series of Vanguard Whitehall Funds.
- Advised by The Vanguard Group, Inc.
- Net assets of \$1,272,342,640 and 26,641,054 outstanding shares.
- Nominees who own shares of this fund: NONE.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
Admiral Shares	Charles Schwab & Co., Inc., San Francisco, CA	9.52%
ETF Shares	Charles Schwab & Co., Inc.	29.11%
	Vanguard Marketing Corporation	10.52%
	Ridge Clearing & Outsourcing Solutions, Inc.	10.41%
	National Financial Services LLC	8.05%
	The Bank of New York Mellon	7.87%
Institutional Shares	Northern Trust FBO The Schaeffer Rev Family Trust, Chicago, IL	59.37%
	Little Company Of Mary Hospital & Health Care Centers Inc., Evergreen Park, IL	40.65%
Investor Shares	AssetMark Trust Company FBO AssetMark, Inc., Phoenix, AZ	7.60%
	LPL Financial, San Diego, CA	6.45%

Vanguard Emerging Markets Select Stock Fund (2011)

- A series of Vanguard Trustees' Equity Fund.
- Advised by M&G Investment Management Limited; Oaktree Capital Management, L.P.; Pzena Investment Management, LLC; and Wellington Management Company LLP.
- Net assets of \$502,221,530 and 24,880,072 outstanding shares.
- Nominees who own shares of this fund: BUCKLEY, over \$100,000; MCNABB, over \$100,000.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
Investor Shares	Charles Schwab & Co., Inc., San Francisco, CA	6.91%

Vanguard Emerging Markets Stock Index Fund (1994)

- A series of Vanguard International Equity Index Funds.
- Advised by The Vanguard Group, Inc.
- Net assets of \$75,755,523,706 and 1,963,373,212 outstanding shares.
- Nominees who own shares of this fund: BUCKLEY, over \$100,000; FULLWOOD, \$1–\$10,000; HEISEN, over \$100,000; MALPASS, over \$100,000; MCNABB, over \$100,000; PEROLD, over \$100,000, VOLANAKIS, over \$100,000.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
Admiral Shares	Charles Schwab & Co., Inc., San Francisco, CA	5.99%
	National Financial Services LLC, Jersey City, NJ	5.04%
ETF Shares	Charles Schwab & Co., Inc.	10.05%
	National Financial Services LLC	6.57%
	JPMorgan Chase Bank, National Association	5.93%
	First Clearing, LLC	5.78%
	The Bank of New York Mellon/ Mellon Trust of New England, National Association	5.46%
	TD Ameritrade Clearing, Inc.	5.28%
Institutional Shares	National Financial Services LLC, Jersey City, NJ	12.15%
	Charles Schwab & Co., Inc., San Francisco, CA	7.61%
	TIAA-CREF Trust Company, FSB, Saint Louis, MO	7.01%
Institutional Plus Shares	Autoridade Monetaria de Macau, Calcada Do Gaio, Macau	26.61%
	State of Michigan Retirement Systems, East Lansing, MI	18.81%
	State of Utah Educational Savings Plan, Salt Lake City, UT	6.96%
	Northern Trust FBO Children's Healthcare Of Atlanta, Chicago, IL	6.30%
	Northern Trust Co. FBO Accenture-DV, Chicago, IL	6.14%
	Pershing LLC, Jersey City, NJ	6.11%
	State Street Bank & Trust as TTEE for BAE Master Pension Investment Trust, Quincy, MA	5.23%
Investor Shares	Charles Schwab & Co., Inc., San Francisco, CA	14.55%
	National Financial Services Corp., Jersey City, NJ	9.75%
	Vanguard Managed Payout Fund, Valley Forge, PA	5.54%

Vanguard Energy Fund (1984)

- A series of Vanguard Specialized Funds.
- Advised by Wellington Management Company LLP and The Vanguard Group, Inc.
- Net assets of \$9,333,221,393 and 130,032,017 outstanding shares.
- Nominees who own shares of this fund: HEISEN, \$1–\$10,000.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
Admiral Shares	National Financial Services, Jersey City, NJ	9.13%
	John Hancock Life Insurance Co. USA, Boston, MA	5.35%
Investor Shares	Charles Schwab & Co., Inc., San Francisco, CA	11.71%
	National Financial Services, Jersey City, NJ	7.81%

Vanguard Energy Index Fund (2004)

- A series of Vanguard World Fund.
- Advised by The Vanguard Group, Inc.
- Net assets of \$4,656,418,497 and 61,064,450 outstanding shares.

- Nominees who own shares of this fund: RASKIN, \$10,001–\$50,000.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
Admiral Shares	National Financial Services LLC, Jersey City, NJ	35.00%
ETF Shares	Vanguard Marketing Corporation	18.34%
	Charles Schwab & Co., Inc.	13.10%
	TD Ameritrade Clearing, Inc.	11.77%
	National Financial Services LLC	11.14%
	Merrill Lynch, Pierce, Fenner & Smith	6.03%

Vanguard Equity Income Fund (1988)

- A series of Vanguard Fenway Funds.
- Advised by Wellington Management Company LLP and The Vanguard Group, Inc.
- Net assets of \$27,969,607,662 and 481,762,574 outstanding shares.
- Nominees who own shares of this fund: VOLANAKIS, over \$100,000.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
Admiral Shares	Charles Schwab & Co., Inc., San Francisco, CA	9.80%
	National Financial Services, Jersey City, NJ	8.23%
Investor Shares	Fidelity Investments Institutional Operations Company, Inc., Covington, KY	5.95%
	National Financial Services, Jersey City, NJ	15.32%
	Charles Schwab & Co., Inc., San Francisco, CA	15.04%

Vanguard European Stock Index Fund (1990)

- A series of Vanguard International Equity Index Funds.
- Advised by The Vanguard Group, Inc.
- Net assets of \$20,451,779,798 and 368,483,955 outstanding shares.
- Nominees who own shares of this fund: BUCKLEY, over \$100,000.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
ETF Shares	National Financial Services LLC	10.48%
	Charles Schwab & Co., Inc.	9.97%
	Morgan Stanley DW Inc.	9.07%
	JPMorgan Chase Bank, National Association	8.47%
	The Bank of New York Mellon	6.71%

Institutional Shares	National Financial Services LLC, Jersey City, NJ	18.25%
	HOCO FBO Non FID ERISA, Kansas City, MO	9.24%
	Park National Bank, Newark, OH	6.82%
	Marc Michael Laukien, Miami Beach, FL	5.47%
	Russell Trust Company Tr Solvay America Companies Pension Plan, Seattle, WA	5.21%
Institutional Plus Shares	Stichting de Samenwerking Pensioenfondsvoor Het Slagersbedrijf Beethovenstraat, Amsterdam, Netherlands	100.00%
Investor Shares	Charles Schwab & Co., Inc., San Francisco, CA	16.01%
	National Financial Services LLC, Jersey City, NJ	11.29%
	The Master Trust Bank of Japan Ltd., Tokyo, Japan	8.13%

Vanguard Explorer™ Fund (1967)

- A series of Vanguard Explorer® Fund.
- Advised by ArrowMark Colorado Holdings, LLC; ClearBridge Investments, LLC; Stephens Investment Management Group, LLC; The Vanguard Group, Inc.; and Wellington Management Company LLP.
- Net assets of \$12,112,170,120 and 136,267,824 outstanding shares.
- Nominees who own shares of this fund: LOUGHRIDGE, over \$100,000.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
Admiral Shares	Fidelity Investments Institutional Operations Company, Inc., Covington, KY	8.48%
Investor Shares	Vanguard STAR Fund, Valley Forge, PA	21.00%

Vanguard Explorer Value™ Fund (2010)

- A series of Vanguard Scottsdale Funds.
- Advised by Cardinal Capital Management, L.L.C. and Frontier Capital Management Co., LLC.
- Net assets of \$605,924,750 and 17,767,624 outstanding shares.
- Nominees who own shares of this fund: BUCKLEY, over \$100,000.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
Investor Shares	Mac & Co., Pittsburgh, PA	11.09%
	Wells Fargo Bank, FBO Skadden Arps Slate Meagher And Flom Savings Plan, Charlotte, NC	8.32%
	State Street Bank Tr Transamerica Retirement Solutions Corporation, Harrison, NY	8.29%
	Fidelity Investments Institutional Operations Company, Inc., Covington, KY	6.85%

Vanguard Extended Duration Treasury Index Fund (2007)

- A series of Vanguard World Fund.
- Advised by The Vanguard Group, Inc.
- Net assets of \$1,539,721,702 and 27,664,261 outstanding shares.
- Nominees who own shares of this fund: NONE.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
ETF Shares	Charles Schwab & Co., Inc.	17.82%
	Vanguard Marketing Corporation	15.03%
	National Financial Services LLC	11.87%
	TD Ameritrade Clearing, Inc.	8.42%
Institutional Shares	Capinco, Milwaukee WI	8.54%
	Northern Trust Company FBO State of Utah, SITF, Chicago, IL	8.42%
	Northern Tr. Co. FBO Johns Hopkins Health System, Chicago, IL	7.53%
	Retirement Income Plan of Utica Mutual Insurance Company, Des Plaines, IL	7.10%
	Mac & Co., Pittsburgh, PA	6.39%
	The New York University Staff Pension Plan, New York, NY	5.42%
Institutional Plus Shares	Transocean U.S. Retirement Plan, Houston, TX	62.55%
	SG Pension Plan, New York, NY	19.36%
	SG US Operations, New York, NY	17.72%

Vanguard Extended Market Index Fund (1987)

- A series of Vanguard Index Funds.
- Advised by The Vanguard Group, Inc.
- Net assets of \$56,057,625,479 and 578,515,563 outstanding shares.
- Nominees who own shares of this fund: FULLWOOD, over \$100,000; GUTMANN, over \$100,000; LOUGHREY, over \$100,000; MALPASS, over \$100,000.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
ETF Shares	National Financial Services LLC	15.54%
	Charles Schwab & Co., Inc.	12.20%
	Vanguard Marketing Corporation	10.85%
	Morgan Stanley DW Inc.	7.78%
	Brown Brothers Harriman & Co. /ETF	6.71%
	UBS Financial Services LLC	6.53%
	TD Ameritrade Clearing, Inc.	5.51%

Institutional Shares	Fidelity Investments Institutional Operations Company, Inc., Covington, KY	21.58%
	TIAA-CREF Trust Company, FSB, Saint Louis, MO	7.50%
	Charles Schwab & Co., Inc., San Francisco, CA	5.43%
Institutional Plus Shares	Fidelity Investments Institutional Operations Company, Inc., Covington, KY	16.12%
	Bank of America, NA Bank of America 401(K) Plan, Houston, TX	15.71%
Institutional Select Shares	Vanguard Institutional Extended Market Index Trust, Valley Forge, PA	100.00%
Investor Shares	Charles Schwab & Co., Inc., San Francisco, CA	11.02%
	National Financial Services, Jersey City, NJ	9.04%

Vanguard Federal Money Market Fund (1981)

- A series of Vanguard Money Market Reserves.
- Advised by The Vanguard Group, Inc.
- Net assets of \$74,773,336,916 and 74,944,519,887 outstanding shares.
- Nominees who own shares of this fund: BUCKLEY, over \$100,000; LOUGHREY, over \$100,000; LOUGHRIDGE, \$10,001–\$50,000; MALPASS, \$10,001–\$50,000; MULLIGAN, \$10,001–\$50,000; VOLANAKIS, over \$100,000.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
Investor Shares	Vanguard Brokerage Services, Valley Forge, PA	48.27%
	Fidelity Investments Institutional Operations Company, Inc., Covington, KY	5.51%

Vanguard Financials Index Fund (2004)

- A series of Vanguard World Fund.
- Advised by The Vanguard Group, Inc.
- Net assets of \$6,064,280,454 and 110,578,570 outstanding shares.
- Nominees who own shares of this fund: MALPASS, \$10,001–\$50,000; RASKIN, \$10,001–\$50,000.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
Admiral Shares	Charles Schwab & Co., Inc., San Francisco, CA	7.11%
	Mitra & Co FBO 98, Green Bay, WI	6.93%
	National Financial Services LLC, Jersey City, NJ	5.48%
ETF Shares	Merrill Lynch, Pierce, Fenner & Smith	28.48%
	Charles Schwab & Co., Inc.	11.66%
	National Financial Services LLC	11.49%
	Vanguard Marketing Corporation	8.96%
	TD Ameritrade Clearing, Inc.	5.30%
	Morgan Stanley DW Inc.	5.21%

Vanguard FTSE All-World ex-US Index Fund (2007)

- A series of Vanguard International Equity Index Funds.
- Advised by The Vanguard Group, Inc.
- Net assets of \$30,976,224,973 and 615,693,091 outstanding shares.
- Nominees who own shares of this fund: BUCKLEY, over \$100,000; HEISEN, over \$100,000.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
Admiral Shares	Charles Schwab & Co., Inc., San Francisco, CA	10.70%
	National Financial Services, Jersey City, NJ	8.22%
ETF Shares	Charles Schwab & Co., Inc.	15.59%
	National Financial Services LLC	9.03%
	TD Ameritrade Clearing, Inc.	7.93%
	Morgan Stanley DW Inc.	6.76%
	Northern Trust Company, The	5.94%
	Vanguard Marketing Corporation	5.79%
	Edward D. Jones & Co.	5.33%
Institutional Shares	National Financial Services LLC, Jersey City, NJ	8.01%
	Fidelity Investments Institutional Operations Company, Inc., Covington, KY	7.32%
Institutional Plus Shares	JPMorgan Chase Bank, N.A. as directed trustee The Travelers Pension Trust The Travelers Companies, Inc., Saint Paul, MN	14.15%
	Fidelity Investments Institutional Operations Company, Inc., Covington, KY	8.27%
	Leidos, Inc. Retirement Plan, Reston, VA	8.19%
	National Financial Services LLC, Jersey City, NJ	7.03%
	Anheuser-Busch 401(K) Savings And Retirement Plan, Saint Louis, Mo	6.65%
	JPMorgan Chase, NA FBO State of Wyoming Equity Index, Brooklyn, NY	6.54%
	The Davis Family Foundation, Hanover, MD	5.75%
Great-West Trust Company LLC TTEE for Baylor Scott & White Health Retirement, Greenwood Village, CO	5.12%	
	Texas Association Of Counties Risk Management Pool, Austin, TX	5.09%
Investor Shares	Charles Schwab & Co., Inc., San Francisco, CA	28.86%
	National Financial Services LLC, Jersey City, NJ	15.63%

Vanguard FTSE All-World ex-US Small-Cap Index Fund (2009)

- A series of Vanguard International Equity Index Funds.
- Advised by The Vanguard Group, Inc.
- Net assets of \$4,476,507,070 and 51,422,597 outstanding shares.
- Nominees who own shares of this fund: BUCKLEY, over \$100,000; HEISEN, over \$100,000; VOLANAKIS, over \$100,000.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
ETF Shares	Charles Schwab & Co., Inc.	17.80%
	National Financial Services LLC	13.57%
	Vanguard Marketing Corporation	12.75%
	TD Ameritrade Clearing, Inc.	11.45%
	Pershing LLC	6.20%
	Edward D. Jones & Co.	5.09%
Institutional Shares	Wells Fargo Bank, NA FBO Port Authority of NY/NJ PFM Advisor, Minneapolis, MN	31.26%
	Fifth Third Bank FBO SEMC Long Term, Cincinnati, OH	15.85%
	Wells Fargo Bank, NA FBO BPA - CGS Decommissioning Trust Fund, Minneapolis, MN	14.68%
	Swiss Vorsorgestiftung fur das Cockpitpersonal II, Geschäftsstelle Glattbrugg, Switzerland	13.80%
	Fifth Third Bank FBO St. Elizabeth Pension – MF, Cincinnati, OH	10.24%
Investor Shares	Charles Schwab & Co., Inc., San Francisco, CA	5.27%

Vanguard FTSE Social Index Fund (2000)

- A series of Vanguard World Fund.
- Advised by The Vanguard Group, Inc.
- Net assets of \$3,089,673,750 and 197,629,830 outstanding shares.
- Nominees who own shares of this fund: NONE.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
Institutional Shares	Fidelity Investments Institutional Operations Company, Inc., Covington, KY	40.56%
	Charles Schwab & Co., Inc., San Francisco, CA	7.13%
	Kaiser Permanente 401K Retirement Plan, Oakland, CA	6.70%
Investor Shares	Charles Schwab & Co., Inc., San Francisco, CA	10.00%
	National Financial Services, Jersey City, NJ	6.57%

Vanguard Global Equity Fund (1995)

- A series of Vanguard Horizon Funds®.
- Advised by Acadian Asset Management LLC; Baillie Gifford Overseas Ltd.; and Marathon Asset Management LLP.
- Net assets of \$5,050,235,458 and 179,065,428 outstanding shares.
- Nominees who own shares of this fund: BUCKLEY, over \$100,000; HEISEN, over \$100,000; VOLANAKIS, over \$100,000.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares: NONE.

Vanguard Global ex-U.S. Real Estate Index Fund (2010)

- A series of Vanguard International Equity Index Funds.
- Advised by The Vanguard Group, Inc.
- Net assets of \$4,935,774,063 and 92,446,908 outstanding shares.
- Nominees who own shares of this fund: NONE.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
ETF Shares	Charles Schwab & Co., Inc.	29.51%
	National Financial Services LLC	8.41%
	First Clearing, LLC	7.36%
	JPMorgan Chase Bank, National Association	6.43%
	The Bank of New York Mellon	5.42%
	Pershing LLC	5.33%
	Vanguard Marketing Corporation	5.30%
	Institutional Shares	Hershey Trust Company FBO Milton Hershey School Trust, Hershey, PA
University of Iowa Diversified Investment Pool, Iowa City, IA		12.74%
University of Iowa Intermediate Pool, Iowa City, IA		11.53%
Washington Suburban Sanitary Commission Employees Retirement Plan, Laurel, MD		10.39%
Mac & Co., Pittsburgh, PA		8.78%
Pershing LLC, Jersey City, NJ		6.61%
Iowa State University, Ames, IA		5.21%
Investor Shares	The Northern Trust Company A/C 2628341, Chicago, IL	8.37%
	Charles Schwab & Co., Inc., San Francisco, CA	7.41%
	Northern Trust Company FBO Loyola Marymount University, Chicago, IL	7.23%
	The Northern Trust Company A/C 2628362, Chicago, IL	6.47%

Vanguard Global Minimum Volatility Fund (2013)

- A series of Vanguard Whitehall Funds.
- Advised by The Vanguard Group, Inc.
- Net assets of \$1,923,874,074 and 92,986,879 outstanding shares.
- Nominees who own shares of this fund: BUCKLEY, over \$100,000.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
Admiral Shares	Charles Schwab & Co., Inc., San Francisco, CA	15.97%
	National Financial Services, Jersey City, NJ	7.22%
Investor Shares	Vanguard Managed Payout Fund, Valley Forge, PA	28.11%
	National Financial Services, Jersey City, NJ	17.78%

Vanguard GNMA Fund (1980)

- A series of Vanguard Fixed Income Securities Funds.
- Advised by Wellington Management Company LLP.
- Net assets of \$25,244,776,790 and 2,384,206,315 outstanding shares.
- Nominees who own shares of this fund: NONE.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
Admiral Shares	Charles Schwab & Co., Inc., San Francisco, CA	5.76%
Investor Shares	Vanguard STAR Fund, Valley Forge, PA	31.28%
	Charles Schwab & Co., Inc., San Francisco, CA	14.76%
	National Financial Services, Jersey City, NJ	7.39%

Vanguard Growth and Income Fund (1986)

- A series of Vanguard Quantitative Funds.
- Advised by D.E. Shaw Investment Management, L.L.C.; Los Angeles Capital Management and Equity Research, Inc.; and The Vanguard Group, Inc.
- Net assets of \$7,467,999,328 and 129,429,135 outstanding shares.
- Nominees who own shares of this fund: NONE.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
Investor Shares	Vanguard Diversified Equity Fund, Valley Forge, PA	9.00%

Vanguard Growth Index Fund (1992)

- A series of Vanguard Index Funds.
- Advised by The Vanguard Group, Inc.
- Net assets of \$64,422,534,203 and 777,145,347 outstanding shares.

- Nominees who own shares of this fund: GUTMANN, over \$100,000; RASKIN, \$50,001–\$100,000; VOLANAKIS, over \$100,000.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
Admiral Shares	Charles Schwab & Co., Inc., San Francisco, CA	7.04%
ETF Shares	Merrill Lynch, Pierce, Fenner & Smith	16.39%
	TD Ameritrade Clearing, Inc.	13.43%
	National Financial Services LLC	12.56%
	Charles Schwab & Co., Inc.	10.41%
	Morgan Stanley DW Inc.	8.62%
	UBS Financial Services LLC	5.37%
Institutional Shares	Edward D. Jones & Co.	5.13%
	Fidelity Investments Institutional Operations Company, Inc., Covington, KY	10.68%
	Charles Schwab & Co., Inc., San Francisco, CA	6.48%
Investor Shares	Charles Schwab & Co., Inc., San Francisco, CA	14.62%
	National Financial Services LLC, Jersey City, NJ	12.52%

Vanguard Health Care Fund (1984)

- A series of Vanguard Specialized Funds.
- Advised by Wellington Management Company LLP.
- Net assets of \$46,926,986,104 and 473,169,744 outstanding shares.
- Nominees who own shares of this fund: BUCKLEY, over \$100,000; FULLWOOD, over \$100,000; HEISEN, over \$100,000; MCNABB, over \$100,000; VOLANAKIS, over \$100,000.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
Investor Shares	Charles Schwab & Co., Inc., San Francisco, CA	15.52%
	National Financial Services, Jersey City, NJ	8.50%

Vanguard Health Care Index Fund (2004)

- A series of Vanguard World Fund.
- Advised by The Vanguard Group, Inc.
- Net assets of \$7,055,783,517 and 56,017,161 outstanding shares.
- Nominees who own shares of this fund: NONE.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
ETF Shares	Vanguard Marketing Corporation	17.07%
	Charles Schwab & Co., Inc.	12.87%
	National Financial Services LLC	11.96%
	TD Ameritrade Clearing, Inc.	7.94%
	Morgan Stanley DW Inc.	5.92%
	Merrill Lynch, Pierce, Fenner & Smith	5.60%

Vanguard High Dividend Yield Index Fund (2006)

- A series of Vanguard Whitehall Funds.
- Advised by The Vanguard Group, Inc.
- Net assets of \$25,165,624,656 and 462,036,296 outstanding shares.
- Nominees who own shares of this fund: FULLWOOD, over \$100,000; HEISEN, \$10,001–\$50,000; LOUGHREY, over \$100,000.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
ETF Shares	Charles Schwab & Co., Inc.	14.62%
	National Financial Services LLC	13.65%
	Vanguard Marketing Corporation	11.35%
	TD Ameritrade Clearing, Inc.	9.42%
	Merrill Lynch, Pierce, Fenner & Smith	6.47%
Investor Shares	National Financial Services LLC, Jersey City, NJ	9.36%
	Charles Schwab & Co., Inc., San Francisco, CA	6.85%

Vanguard High-Yield Corporate Fund (1978)

- A series of Vanguard Fixed Income Securities Funds.
- Advised by Wellington Management Company LLP.
- Net assets of \$23,505,671,317 and 3,943,676,558 outstanding shares.
- Nominees who own shares of this fund: NONE.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
Admiral Shares	Charles Schwab & Co., Inc., San Francisco, CA	13.84%
	National Financial Services LLC, Jersey City, NJ	5.60%
Investor Shares	Charles Schwab & Co., Inc., San Francisco, CA	16.46%
	National Financial Services LLC, Jersey City, NJ	9.98%

Vanguard High-Yield Tax-Exempt Fund (1978)

- A series of Vanguard Municipal Bond Funds.
- Advised by The Vanguard Group, Inc.
- Net assets of \$11,439,864,666 and 1,011,299,002 outstanding shares.

- Nominees who own shares of this fund: LOUGHREY, over \$100,000; RASKIN, \$10,001–\$50,000.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
Admiral Shares	Charles Schwab & Co., Inc., San Francisco, CA	8.63%
Investor Shares	Charles Schwab & Co., Inc., San Francisco, CA	21.42%
	National Financial Services LLC, Jersey City, NJ	20.95%

Vanguard Industrials Index Fund (2004)

- A series of Vanguard World Fund.
- Advised by The Vanguard Group, Inc.
- Net assets of \$3,164,983,247 and 26,175,798 outstanding shares.
- Nominees who own shares of this fund: NONE.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
Admiral Shares	National Financial Services LLC, Jersey City, NJ	24.82%
ETF Shares	Merrill Lynch, Pierce, Fenner & Smith	49.60%
	TD Ameritrade Clearing, Inc.	6.59%
	Charles Schwab & Co., Inc.	6.41%
	Vanguard Marketing Corporation	6.38%

Vanguard Inflation-Protected Securities Fund (2000)

- A series of Vanguard Bond Index Funds.
- Advised by The Vanguard Group, Inc.
- Net assets of \$27,167,649,253 and 1,720,991,287 outstanding shares.
- Nominees who own shares of this fund: NONE.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
Admiral Shares	Charles Schwab & Co., Inc., San Francisco, CA	14.22%
	National Financial Services LLC, Jersey City, NJ	10.42%
Institutional Shares	Fidelity Investments Institutional Operations Company, Inc., Covington, KY	9.72%
	National Financial Services LLC, Jersey City, NJ	9.25%
Investor Shares	Charles Schwab & Co., Inc., San Francisco, CA	17.16%
	National Financial Services LLC, Jersey City, NJ	12.95%

Vanguard Information Technology Index Fund (2004)

- A series of Vanguard World Fund.
- Advised by The Vanguard Group, Inc.

- Net assets of \$14,115,452,946 and 102,620,876 outstanding shares.
- Nominees who own shares of this fund: RASKIN, \$50,001–\$100,000.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
ETF Shares	Merrill Lynch, Pierce, Fenner & Smith	34.10%
	Charles Schwab & Co., Inc.	8.40%
	Vanguard Marketing Corporation	7.09%
	UBS Financial Services LLC	5.66%
	First Clearing, LLC	5.66%
	National Financial Services LLC	5.40%

Vanguard Institutional Index Fund (1990)

- A series of Vanguard Institutional Index Funds.
- Advised by The Vanguard Group, Inc.
- Net assets of \$228,438,565,197 and 1,036,483,482 outstanding shares.
- Nominees who own shares of this fund: BUCKLEY, over \$100,000; MCNABB, over \$100,000.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
Institutional Shares	Fidelity Investments Institutional Operations Company, Inc., Covington, KY	12.72%
	Charles Schwab & Co., Inc., San Francisco, CA	5.99%
	National Financial Services LLC, Jersey City, NJ	5.76%
Institutional Plus Shares	Fidelity Investments Institutional Operations Company, Inc., Covington, KY	15.72%
	National Financial Services LLC, Jersey City, NJ	6.08%

Vanguard Institutional Intermediate-Term Bond Fund (2015)

- A series of Vanguard Malvern Funds.
- Advised by The Vanguard Group, Inc.
- Net assets of \$13,254,974,909 and 571,964,248 outstanding shares.
- Nominees who own shares of this fund: NONE.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares: NONE.

Vanguard Institutional Short-Term Bond Fund (2015)

- A series of Vanguard Malvern Funds.
- Advised by The Vanguard Group, Inc.
- Net assets of \$7,689,598,030 and 558,753,771 outstanding shares.
- Nominees who own shares of this fund: NONE.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares: NONE.

Vanguard Institutional Target Retirement 2015 Fund (2015)

- A series of Vanguard Chester Funds.
- Advised by The Vanguard Group, Inc.
- Net assets of \$7,183,606,526 and 337,841,488 outstanding shares.
- Nominees who own shares of this fund: NONE.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
Institutional Shares	Fidelity Investments Institutional Operations Company, Inc., Covington, KY	31.37%
	State Street Bank Tr Transamerica Retirement Solutions Corporation, Harrison, NY	7.95%
	TIAA-CREF Trust Company, FSB, Saint Louis, MO	7.17%

Vanguard Institutional Target Retirement 2020 Fund (2015)

- A series of Vanguard Chester Funds.
- Advised by The Vanguard Group, Inc.
- Net assets of \$15,697,361,710 and 731,026,998 outstanding shares.
- Nominees who own shares of this fund: NONE.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
Institutional Shares	Fidelity Investments Institutional Operations Company, Inc., Covington, KY	35.35%
	State Street Bank Tr Transamerica Retirement Solutions Corporation, Harrison, NY	7.68%
	TIAA-CREF Trust Company FSB, Saint Louis, MO	6.35%

Vanguard Institutional Target Retirement 2025 Fund (2015)

- A series of Vanguard Chester Funds.
- Advised by The Vanguard Group, Inc.
- Net assets of \$19,063,980,683 and 882,929,813 outstanding shares.
- Nominees who own shares of this fund: NONE.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
Institutional Shares	Fidelity Investments Institutional Operations Company, Inc., Covington, KY	31.21%
	State Street Bank Tr Transamerica Retirement Solutions Corporation, Harrison, NY	8.10%
	TIAA-CREF Trust Company FSB, Saint Louis, MO	6.17%

Vanguard Institutional Target Retirement 2030 Fund (2015)

- A series of Vanguard Chester Funds.
- Advised by The Vanguard Group, Inc.
- Net assets of \$16,585,564,514 and 765,759,683 outstanding shares.
- Nominees who own shares of this fund: NONE.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
Institutional Shares	Fidelity Investments Institutional Operations Company, Inc., Covington, KY	33.78%
	State Street Bank Tr Transamerica Retirement Solutions Corporation, Harrison, NY	6.89%
	TIAA-CREF Trust Company FSB, Saint Louis, MO	6.56%

Vanguard Institutional Target Retirement 2035 Fund (2015)

- A series of Vanguard Chester Funds.
- Advised by The Vanguard Group, Inc.
- Net assets of \$15,337,084,846 and 705,751,107 outstanding shares.
- Nominees who own shares of this fund: NONE.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
Institutional Shares	Fidelity Investments Institutional Operations Company, Inc., Covington, KY	30.98%
	TIAA-CREF Trust Company FSB, Saint Louis, MO	7.66%
	State Street Bank Tr Transamerica Retirement Solutions Corporation, Harrison, NY	7.54%

Vanguard Institutional Target Retirement 2040 Fund (2015)

- A series of Vanguard Chester Funds.
- Advised by The Vanguard Group, Inc.
- Net assets of \$12,807,893,679 and 587,632,536 outstanding shares.
- Nominees who own shares of this fund: NONE.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
Institutional Shares	Fidelity Investments Institutional Operations Company, Inc., Covington, KY	32.29%
	TIAA-CREF Trust Company FSB, Saint Louis, MO	9.33%
	State Street Bank Tr Transamerica Retirement Solutions Corporation, Harrison, NY	7.02%

Vanguard Institutional Target Retirement 2045 Fund (2015)

- A series of Vanguard Chester Funds.
- Advised by The Vanguard Group, Inc.
- Net assets of \$10,497,156,474 and 479,841,360 outstanding shares.
- Nominees who own shares of this fund: NONE.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
Institutional Shares	Fidelity Investments Institutional Operations Company, Inc., Covington, KY	28.23%
	State Street Bank Tr Transamerica Retirement Solutions Corporation, Harrison, NY	8.50%
	TIAA-CREF Trust Company FSB, Saint Louis, MO	8.03%

Vanguard Institutional Target Retirement 2050 Fund (2015)

- A series of Vanguard Chester Funds.
- Advised by The Vanguard Group, Inc.
- Net assets of \$6,831,515,797 and 312,099,585 outstanding shares.
- Nominees who own shares of this fund: NONE.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
Institutional Shares	Fidelity Investments Institutional Operations Company, Inc., Covington, KY	27.86%
	State Street Bank Tr Transamerica Retirement Solutions Corporation, Harrison, NY	7.84%
	TIAA-CREF Trust Company FSB, Saint Louis, MO	7.00%

Vanguard Institutional Target Retirement 2055 Fund (2015)

- A series of Vanguard Chester Funds.
- Advised by The Vanguard Group, Inc.
- Net assets of \$2,680,684,798 and 122,320,668 outstanding shares.
- Nominees who own shares of this fund: NONE.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
Institutional Shares	Fidelity Investments Institutional Operations Company, Inc., Covington, KY	26.08%
	State Street Bank Tr Transamerica Retirement Solutions Corporation, Harrison, NY	8.90%
	TIAA-CREF Trust Company FSB, Saint Louis, MO	6.54%

Vanguard Institutional Target Retirement 2060 Fund (2015)

- A series of Vanguard Chester Funds.
- Advised by The Vanguard Group, Inc.
- Net assets of \$637,919,943 and 29,132,319 outstanding shares.
- Nominees who own shares of this fund: NONE.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
Institutional Shares	Fidelity Investments Institutional Operations Company, Inc., Covington, KY	25.75%
	State Street Bank Tr Transamerica Retirement Solutions Corporation, Harrison, NY	6.68%

Vanguard Institutional Target Retirement 2065 Fund (2017)

- A series of Vanguard Chester Funds.
- Advised by The Vanguard Group, Inc.
- Information as of May 31, 2017, is not available because the fund didn't commence operations until July 12, 2017.

Vanguard Institutional Target Retirement Income Fund (2015)

- A series of Vanguard Chester Funds.
- Advised by The Vanguard Group, Inc.
- Net assets of \$2,628,989,671 and 125,128,560 outstanding shares.
- Nominees who own shares of this fund: NONE.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
Institutional Shares	Fidelity Investments Institutional Operations Company, Inc., Covington, KY	26.21%
	State Street Bank Tr Transamerica Retirement Solutions Corporation, Harrison, NY	6.47%
	TIAA-CREF Trust Company FSB, Saint Louis, MO	5.11%

Vanguard Institutional Total Stock Market Index Fund (2001)

- A series of Vanguard Institutional Index Funds.
- Advised by The Vanguard Group, Inc.
- Net assets of \$39,911,497,476 and 738,013,495 outstanding shares.
- Nominees who own shares of this fund: MCNABB, over \$100,000.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
Institutional Shares	Cincinnati Bell Pension Plans Trust, Cincinnati, OH	21.50%
	Capinco, Milwaukee, WI	21.21%
	Legacy Heritage Investors I LLC, New York, NY	16.62%
	Comerica Bank FBO Fb-Mutual, Detroit, MI	11.69%
	Munich Reinsurance America Inc., Pension Plan, Princeton, NJ	8.27%
	Comerica Bank FBO Fb-General Ins., Detroit, MI	6.61%
Institutional Plus Shares	Fidelity Investments Institutional Operations Company, Inc., Covington, KY	9.50%
	State of Utah Educational Savings Plan, Salt Lake City, UT	8.50%

Vanguard Intermediate-Term Bond Index Fund (1994)

- A series of Vanguard Bond Index Funds.
- Advised by The Vanguard Group, Inc.
- Net assets of \$32,016,855,547 and 1,772,203,160 outstanding shares.
- Nominees who own shares of this fund: RASKIN, \$10,001-\$50,000.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
Admiral Shares	Charles Schwab & Co., Inc., San Francisco, CA	7.43%
	National Financial Services, Jersey City, NJ	6.47%
ETF Shares	Merrill Lynch, Pierce, Fenner & Smith	38.17%
	Edward D. Jones & Co.	12.97%
	Wells Fargo Bank, National Association	7.30%
	Charles Schwab & Co., Inc.	6.42%
	National Financial Services LLC	5.75%
Institutional Shares	National Financial Services, Jersey City, NJ	10.25%
	Fidelity Investments Institutional Operations Company, Inc., Covington, KY	10.00%
	State Street Bank Tr Transamerica Retirement Solutions Corporation, Harrison, NY	5.73%
	Charles Schwab & Co., Inc., San Francisco, CA	5.72%
Institutional Plus Shares	Brown Brothers Harriman & Co. as Custodian for 5488093, New York, NY	44.30%
	Brown Brothers Harriman & Co. as Custodian for 6661110, New York, NY	23.98%
	Fidelity Investments Institutional Operations Company, Inc. (FIIOC), Covington, KY	8.10%
	Great West Trust Co., FBO DTE Energy Company Savings and Stock Ownership Plan, Overlook Park, KS	7.99%
	Mitra & Co. Exp., Green Bay, WI	7.43%
	Brown Brothers Harriman & Co. as Custodian for 6661052, New York, NY	6.93%

Investor Shares	National Financial Services, Jersey City, NJ	19.89%
	Charles Schwab & Co., Inc., San Francisco, CA	17.04%

Vanguard Intermediate-Term Corporate Bond Index Fund (2009)

- A series of Vanguard Scottsdale Funds.
- Advised by The Vanguard Group, Inc.
- Net assets of \$15,764,794,966 and 218,742,698 outstanding shares.
- Nominees who own shares of this fund: NONE.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
Admiral Shares	Charles Schwab & Co., Inc., San Francisco, CA	6.09%
ETF Shares	Merrill Lynch, Pierce, Fenner & Smith	17.72%
	TD Ameritrade Clearing, Inc.	12.12%
	Charles Schwab & Co., Inc.	10.10%
	First Clearing, LLC	6.97%
	National Financial Services LLC	6.18%
	State Street Bank and Trust Company	5.38%
Institutional Shares	Citibank, N.A. FBO Ashland Asbestos Defense Trust, New York, NY	25.54%
	Sompo America Insurance Co., New York, NY	23.26%
	Brown Brothers Harriman & Co., New York, NY	6.50%
	Pacific Life Foundation, Newport Beach, CA	6.46%
	Wells Fargo Bank NA, FBO National-Oil WE, Minneapolis, MN	5.97%

Vanguard Intermediate-Term Government Bond Index Fund (2009)

- A series of Vanguard Scottsdale Funds.
- Advised by The Vanguard Group, Inc.
- Net assets of \$2,300,306,831 and 65,168,663 outstanding shares.
- Nominees who own shares of this fund: NONE.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
Admiral Shares	Charles Schwab & Co., Inc., San Francisco, CA	32.90%
	National Financial Services LLC, Jersey City, NJ	13.09%
ETF Shares	National Financial Services LLC	25.14%
	First Clearing, LLC	12.86%
	TD Ameritrade Clearing, Inc.	9.98%
	Charles Schwab & Co., Inc.	8.65%
	Vanguard Marketing Corporation	6.22%

Institutional Shares	Charles Schwab & Co., Inc., San Francisco, CA	34.87%
	Mac & Co., Pittsburgh, PA	18.21%
	Merrill Lynch, Pierce, Fenner & Smith, Inc., Jacksonville, FL	14.76%
	Cape Cod Healthcare Inc., Hyannis, MA	7.43%
	PIMS/Prudential Retirement FBO Prudential Employee Savings, Newark, NJ	6.41%

Vanguard Intermediate-Term Investment-Grade Fund (1993)

- A series of Vanguard Fixed Income Securities Funds.
- Advised by The Vanguard Group, Inc.
- Net assets of \$27,446,237,996 and 2,795,556,446 outstanding shares.
- Nominees who own shares of this fund: GUTMANN, \$10,001-\$50,000; LOUGHREY, over \$100,000; LOUGHRIDGE, over \$100,000.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
Admiral Shares	Charles Schwab & Co., Inc., San Francisco, CA	9.02%
	National Financial Services LLC, Jersey City, NJ	7.13%
Investor Shares	Charles Schwab & Co., Inc., San Francisco, CA	17.43%
	National Financial Services LLC, Jersey City, NJ	10.96%

Vanguard Intermediate-Term Tax-Exempt Fund (1977)

- A series of Vanguard Municipal Bond Funds.
- Advised by The Vanguard Group, Inc.
- Net assets of \$53,158,684,015 and 3,738,827,023 outstanding shares.
- Nominees who own shares of this fund: GUTMANN, over \$100,000; LOUGHREY, over \$100,000; LOUGHRIDGE, over \$100,000; MCNABB, over \$100,000.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
Admiral Shares	Charles Schwab & Co., Inc., San Francisco, CA	17.14%
	National Financial Services LLC, Jersey City, NJ	9.67%
Investor Shares	Charles Schwab & Co., Inc., San Francisco, CA	30.80%
	National Financial Services LLC, Jersey City, NJ	17.85%

Vanguard Intermediate-Term Treasury Fund (1991)

- A series of Vanguard Fixed Income Securities Funds.
- Advised by The Vanguard Group, Inc.
- Net assets of \$6,281,254,191 and 558,562,730 outstanding shares.
- Nominees who own shares of this fund: NONE.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
Admiral Shares	National Financial Services LLC, Jersey City, NJ	11.43%
	Charles Schwab & Co., Inc., San Francisco, CA	5.50%
Investor Shares	National Financial Services LLC, Jersey City, NJ	9.99%
	Charles Schwab & Co., Inc., San Francisco, CA	9.66%

Vanguard International Dividend Appreciation Index Fund (2016)

- A series of Vanguard Whitehall Funds.
- Advised by The Vanguard Group, Inc.
- Net assets of \$506,300,702 and 10,372,591 outstanding shares.
- Nominees who own shares of this fund: NONE.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
Admiral Shares	FCCI Insurance Company, Sarasota, FL	20.51%
ETF Shares	Merrill Lynch, Pierce, Fenner & Smith	22.81%
	Vanguard Marketing Corporation	14.26%
	UBS Financial Services LLC	12.25%
	Charles Schwab & Co., Inc.	11.71%
	National Financial Services LLC	11.07%
	Investor Shares	National Financial Services, Jersey City, NJ
	Charles Schwab & Co., Inc., San Francisco, CA	14.29%

Vanguard International Explorer™ Fund (1996)

- A series of Vanguard Whitehall Funds.
- Advised by Schroder Investment Management North America Inc. and Wellington Management Company LLP.
- Net assets of \$3,370,436,361 and 170,272,995 outstanding shares.
- Nominees who own shares of this fund: VOLANAKIS, \$50,001–\$100,000.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
Investor Shares	Charles Schwab & Co., Inc., San Francisco, CA	13.32%
	National Financial Services LLC, Jersey City, NJ	8.47%

Vanguard International Growth Fund (1981)

- A series of Vanguard World Fund.
- Advised by Baillie Gifford Overseas Ltd. and Schroder Investment Management North America Inc.
- Net assets of \$27,419,973,436 and 522,471,062 outstanding shares.
- Nominees who own shares of this fund: BUCKLEY, over \$100,000; HEISEN, over \$100,000; MCNABB, over \$100,000.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
Investor Shares	Vanguard STAR Fund, Valley Forge, PA	26.41%

Vanguard International High Dividend Yield Index Fund (2016)

- A series of Vanguard Whitehall Funds.
- Advised by The Vanguard Group, Inc.
- Net assets of \$502,750,694 and 10,295,592 outstanding shares.
- Nominees who own shares of this fund: NONE.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
Admiral Shares	FCCI Insurance Company, Sarasota, FL	18.99%
	National Financial Services, Jersey City, NJ	15.76%
ETF Shares	Vanguard Marketing Corporation	16.86%
	Charles Schwab & Co., Inc.	16.16%
	National Financial Services LLC	13.54%
	Merrill Lynch, Pierce, Fenner & Smith	9.67%
	First Clearing, LLC	7.49%
	TD Ameritrade Clearing, Inc.	5.33%
Investor Shares	Raymond, James & Associates, Inc.	5.32%
	Charles Schwab & Co., Inc., San Francisco, CA	11.48%

Vanguard International Value Fund (1983)

- A series of Vanguard Trustees' Equity Fund.
- Advised by ARG Investment Management, LP; Edinburgh Partners Limited; and Lazard Asset Management LLC.
- Net assets of \$9,094,680,725 and 249,886,814 outstanding shares.
- Nominees who own shares of this fund: MCNABB, \$50,001–\$100,000.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
Investor Shares	Vanguard STAR Fund, Valley Forge, PA	21.25%

Vanguard Large-Cap Index Fund (2004)

- A series of Vanguard Index Funds.
- Advised by The Vanguard Group, Inc.
- Net assets of \$15,565,418,380 and 183,010,005 outstanding shares.
- Nominees who own shares of this fund: MALPASS, over \$100,000; RASKIN, \$10,001–\$50,000.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
Admiral Shares	Charles Schwab & Co., Inc., San Francisco, CA	11.58%
	National Financial Services LLC, Jersey City, NJ	6.78%
ETF Shares	Edward D. Jones & Co.	16.91%
	Charles Schwab & Co., Inc.	14.58%
	National Financial Services LLC	12.19%
	TD Ameritrade Clearing, Inc.	8.43%
	Vanguard Marketing Corporation	5.96%
Institutional Shares	Merrill Lynch, Pierce, Fenner & Smith Inc., Jacksonville, FL	14.47%
	Mac & Co. A/C 866757, Pittsburgh, PA	13.52%
	SEI Private Trust Company, Oaks, PA	9.76%
	Mid Atlantic Trust Company FBO Plumbers Local Union No. 1 Employee 401k Saving Plan, Pittsburgh, Pa	8.38%
	National Financial Services LLC, Jersey City, NJ	7.77%
	Mac & Co. A/C 867257, Pittsburgh, PA	6.59%
Investor Shares	Charles Schwab & Co., Inc., San Francisco, CA	14.33%
	National Financial Services LLC, Jersey City, NJ	10.20%
	Teachers Defined Contribution Retirement Plan FBO West Virginia Teachers DCP, Greenwood Village, CO	10.18%

Vanguard LifeStrategy® Conservative Growth Fund (1994)

- A series of Vanguard STAR Funds.
- Advised by The Vanguard Group, Inc.
- Net assets of \$8,811,734,412 and 455,642,071 outstanding shares.
- Nominees who own shares of this fund: NONE.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares: NONE.

Vanguard LifeStrategy® Growth Fund (1994)

- A series of Vanguard STAR Funds.
- Advised by The Vanguard Group, Inc.
- Net assets of \$13,388,302,995 and 426,765,222 outstanding shares.
- Nominees who own shares of this fund: NONE.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares: NONE.

Vanguard LifeStrategy® Income Fund (1994)

- A series of Vanguard STAR Funds.
- Advised by The Vanguard Group, Inc.
- Net assets of \$3,980,800,337 and 259,064,991 outstanding shares.
- Nominees who own shares of this fund: NONE.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares: NONE.

Vanguard LifeStrategy® Moderate Growth Fund (1994)

- A series of Vanguard STAR Funds.
- Advised by The Vanguard Group, Inc.
- Net assets of \$14,688,217,203 and 568,568,836 outstanding shares.
- Nominees who own shares of this fund: NONE.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares: NONE.

Vanguard Limited-Term Tax-Exempt Fund (1987)

- A series of Vanguard Municipal Bond Funds.
- Advised by The Vanguard Group, Inc.
- Net assets of \$24,098,328,071 and 2,190,038,932 outstanding shares.
- Nominees who own shares of this fund: BUCKLEY, over \$100,000; GUTMANN, over \$100,000; LOUGHRIDGE, over \$100,000; MCNABB, over \$100,000.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
Admiral Shares	Charles Schwab & Co., Inc., San Francisco, CA	19.29%
	National Financial Services LLC, Jersey City, NJ	17.66%
Investor Shares	Charles Schwab & Co., Inc., San Francisco, CA	27.47%
	National Financial Services, Jersey City, NJ	19.40%

Vanguard Long-Term Bond Index Fund (1994)

- A series of Vanguard Bond Index Funds.
- Advised by The Vanguard Group, Inc.
- Net assets of \$10,151,426,195 and 601,490,175 outstanding shares.
- Nominees who own shares of this fund: NONE.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
ETF Shares	National Financial Services LLC	16.55%
	TD Ameritrade Clearing, Inc.	12.13%
	Pershing LLC	10.55%
	Vanguard Marketing Corporation	7.61%
	The Bank of New York Mellon	7.43%
	Charles Schwab & Co., Inc.	7.18%
	State Street Bank and Trust Company	6.74%
Institutional Shares	National Financial Services, Jersey City, NJ	15.76%
	HOCO FBO Non FID ERISA, Kansas City, MO	8.32%
	Capinco, Milwaukee, WI	6.04%

Institutional Plus Shares	Northern Trust Company FBO The McClatchy Company, Chicago, IL	15.26%
	Munich Reinsurance America Inc., Pension Plan, Princeton, NJ	12.45%
	National Financial Services LLC, Jersey City, NJ	10.42%
	Mac & Co. A/C 510898, Pittsburgh, PA	8.70%
	JPMorgan Chase N.A. FBO Deloitte Pension Plan for Employees, Brooklyn, NY	8.55%
	Mac & Co. A/C 747087, Pittsburgh, PA	6.96%
	Northern Trust Company FBO Tesor Corporation, Chicago, IL	6.67%
	Stanford University Staff Retirement Annuity Plan, Stanford, CA	5.40%
	Fidelity Investments Institutional Operations Company, Inc., Covington, KY	5.05%

Vanguard Long-Term Corporate Bond Index Fund (2009)

- A series of Vanguard Scottsdale Funds.
- Advised by The Vanguard Group, Inc.
- Net assets of \$2,459,853,843 and 40,981,386 outstanding shares.
- Nominees who own shares of this fund: NONE.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
ETF Shares	JPMorgan Chase Bank, National Association	15.61%
	Vanguard Marketing Corporation	12.68%
	The Bank of New York Mellon	6.85%
	National Financial Services LLC	6.54%
	Charles Schwab & Co., Inc.	5.91%
Institutional Shares	Mac & Co., Pittsburgh, PA	38.80%
	Mitra & Co. FBO 98, Green Bay, WI	13.68%
	The New York University Staff Pension Plan, New York, NY	10.15%
	Bank of America NA FBO MFO 3416716, Dallas, TX	7.13%
	The Northern Trust Corporation FBO American Hospital – Retirement, Chicago, IL	6.49%
	Brown Brothers Harriman & Co., New York, NY	6.44%
	Northern Trust Company FBO New York Times Company - Guild Fund, Chicago, IL	6.10%
Capinco, Milwaukee, WI	5.25%	

Vanguard Long-Term Government Bond Index Fund (2009)

- A series of Vanguard Scottsdale Funds.
- Advised by The Vanguard Group, Inc.
- Net assets of \$1,098,476,970 and 28,609,771 outstanding shares.

- Nominees who own shares of this fund: NONE.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
Admiral Shares	Charles Schwab & Co., Inc., San Francisco, CA	27.40%
ETF Shares	Vanguard Marketing Corporation	17.89%
	TD Ameritrade Clearing, Inc.	11.31%
	Charles Schwab & Co., Inc.	9.91%
	National Financial Services LLC	9.19%
	First Clearing, LLC	6.15%
	JPMorgan Chase Bank, National Association	6.10%
Institutional Shares	The Northern Trust Corporation FBO American Hospital – Retirement, Chicago, IL	16.28%
	JP Morgan Chase Bank NA FBO Towers Watson Savings Plan For US Employees Target 2025, New York, NY	14.59%
	JP Morgan Chase Bank NA FBO Towers Watson Savings Plan For US Employees Target 2030, New York, NY	13.33%
	State Street Bank & Trust FBO Leidos Biomedical Research, Quincy, MA	12.56%
	JP Morgan Chase Bank NA FBO Towers Watson Savings Plan For US Employees Target 2035, New York, NY	9.90%
	JP Morgan Chase Bank NA FBO Towers Watson Savings Plan For US Employees Target 2040, New York, NY	7.89%
	JP Morgan Chase Bank NA FBO Towers Watson Savings Plan For US Employees Target 2020 New York, NY	5.85%
	JP Morgan Chase Bank NA FBO Towers Watson Savings Plan For US Employees Target 2045 New York, NY	5.09%

Vanguard Long-Term Investment-Grade Fund (1973)

- A series of Vanguard Fixed Income Securities Funds.
- Advised by Wellington Management Company LLP and The Vanguard Group, Inc.
- Net assets of \$15,357,710,104 and 1,479,458,431 outstanding shares.
- Nominees who own shares of this fund: NONE.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
Admiral Shares	National Financial Services, Jersey City, NJ	6.64%
Investor Shares	Vanguard STAR Fund, Valley Forge, PA	59.07%
	Variable Annuity Life Insurance Company, Houston, TX	5.89%

Vanguard Long-Term Tax-Exempt Fund (1977)

- A series of Vanguard Municipal Bond Funds.
- Advised by The Vanguard Group, Inc.
- Net assets of \$10,392,523,312 and 891,621,688 outstanding shares.

- Nominees who own shares of this fund: LOUGHRIDGE, over \$100,000; RASKIN, \$1–\$10,000.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
Admiral Shares	National Financial Services, Jersey City, NJ	5.07%
Investor Shares	Charles Schwab & Co., Inc., San Francisco, CA	18.43%
	National Financial Services, Jersey City, NJ	16.18%

Vanguard Long-Term Treasury Fund (1986)

- A series of Vanguard Fixed Income Securities Funds.
- Advised by The Vanguard Group, Inc.
- Net assets of \$3,395,130,138 and 278,549,308 outstanding shares.
- Nominees who own shares of this fund: NONE.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
Admiral Shares	National Financial Services, Jersey City, NJ	8.39%
	Fidelity Investments Institutional Operations Company, Inc., Covington, KY	5.77%
Investor Shares	Variable Annuity Life Insurance Company, Houston, TX	23.05%
	Charles Schwab & Co., Inc., San Francisco, CA	6.44%
	National Financial Services, Jersey City, NJ	5.53%

Vanguard Managed Payout Fund (2008)

- A series of Vanguard Valley Forge Funds.
- Advised by The Vanguard Group, Inc.
- Net assets of \$1,877,104,927 and 102,915,739 outstanding shares.
- Nominees who own shares of this fund: NONE.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
Investor Shares	The Jackson Laboratory Bar Harbor, ME	6.05%

Vanguard Market Liquidity Fund (2004)

- A series of Vanguard CMT Funds.
- Advised by The Vanguard Group, Inc.
- Net assets of \$59,191,132,027 and 612,918,717 outstanding shares.
- Nominees who own shares of this fund: NONE.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
Investor Shares	Vanguard Total International Stock Index Fund, Valley Forge, PA	13.42%
	Vanguard Total Bond Market II Index Fund, Valley Forge, PA	7.29%
	Vanguard Total Bond Market Index Fund, Valley Forge, PA	7.04%

Vanguard Market Neutral Fund (1998)

- A series of Vanguard Montgomery Funds.
- Advised by The Vanguard Group, Inc.
- Net assets of \$2,064,577,697 and 174,746,536 outstanding shares.
- Nominees who own shares of this fund: MALPASS, over \$100,000.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
Institutional Shares	National Financial Services, Jersey City, NJ	23.37%
	Charles Schwab & Co., Inc., San Francisco, CA	15.94%
	Aspiriant Defensive Allocation Fund - A Series Of Aspiriant Trust, Milwaukee, WI	10.03%
	Maril & CO FBO NG, Green Bay, WI	8.02%
	Maril & CO FBO JI, Green Bay, WI	7.54%
	Bank of Hawaii Agent U/A dated 3/03/2011 FBO Lokahi Assurance Ltd. 2, Honolulu, HI	6.22%
	St. Charles Health System, Inc., Bend, OR	5.44%
Investor Shares	Charles Schwab & Co., Inc., San Francisco, CA	29.52%
	National Financial Services, Jersey City, NJ	21.62%
	Vanguard Managed Payout Fund, Valley Forge, PA	7.38%

Vanguard Massachusetts Tax-Exempt Fund (1998)

- A series of Vanguard Massachusetts Tax-Exempt Funds.
- Advised by The Vanguard Group, Inc.
- Net assets of \$1,593,761,214 and 147,482,661 outstanding shares.
- Nominees who own shares of this fund: NONE.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
Investor Shares	National Financial Services LLC, Jersey City, NJ	17.19%
	Charles Schwab & Co., Inc., San Francisco, CA	9.54%

Vanguard Materials Index Fund (2004)

- A series of Vanguard World Fund.
- Advised by The Vanguard Group, Inc.

- Net assets of \$2,305,134,257 and 21,791,422 outstanding shares.
- Nominees who own shares of this fund: RASKIN, \$50,001–\$100,000.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
Admiral Shares	Charles Schwab & Co., Inc., San Francisco, CA	11.02%
ETF Shares	TD Ameritrade Clearing, Inc.	18.42%
	Merrill Lynch, Pierce, Fenner & Smith	15.55%
	Vanguard Marketing Corporation	12.55%
	Charles Schwab & Co., Inc.	12.37%
	National Financial Services LLC	7.15%

Vanguard Mega Cap Growth Index Fund (2007)

- A series of Vanguard World Fund.
- Advised by The Vanguard Group, Inc.
- Net assets of \$3,042,932,583 and 29,984,031 outstanding shares.
- Nominees who own shares of this fund: NONE.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
ETF Shares	National Financial Services LLC	21.35%
	TD Ameritrade Clearing, Inc.	11.91%
	Merrill Lynch, Pierce, Fenner & Smith	11.63%
	Charles Schwab & Co., Inc.	9.40%
	Vanguard Marketing Corporation	8.06%
	Morgan Stanley DW Inc.	7.68%
Institutional Shares	SEI Private Trust Company, Oaks, PA	30.25%
	National Financial Services, Jersey City, NJ	18.33%
	Chengwen C. Wang, Las Vegas, NV	18.22%
	SEI Private Trust Company, Oaks, PA	17.98%
	State Street Bank Tr Transamerica Retirement Solutions Corporation, Harrison, NY	15.05%

Vanguard Mega Cap Index Fund (2007)

- A series of Vanguard World Fund.
- Advised by The Vanguard Group, Inc.
- Net assets of \$1,311,132,655 and 15,221,053 outstanding shares.
- Nominees who own shares of this fund: NONE.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
ETF Shares	Charles Schwab & Co., Inc.	17.24%
	National Financial Services LLC	12.65%
	Vanguard Marketing Corporation	11.51%
	Merrill Lynch, Pierce, Fenner & Smith	9.82%
	TD Ameritrade Clearing, Inc.	6.47%
	Pershing LLC	5.43%
Institutional Shares	BTC FBO Liberty Energy Utilities, Overland Park, KS	38.20%
	Wells Fargo Bank, NA FBO Middlesex Health System Pension Plan, Minneapolis, MN	17.73%
	Wells Fargo Bank, NA FBO Middlesex Hospital Endowment, Minneapolis, MN	11.90%
	Wells Fargo Bank, NA FBO Lower Merion PO VG MC, Minneapolis, MN	9.46%
	Capinco, Milwaukee, WI	9.19%
	Wells Fargo Bank, NA FBO Lower Merion NU VG MC, Minneapolis, MN	9.07%

Vanguard Mega Cap Value Index Fund (2007)

- A series of Vanguard World Fund.
- Advised by The Vanguard Group, Inc.
- Net assets of \$1,765,945,287 and 24,862,742 outstanding shares.
- Nominees who own shares of this fund: NONE.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
ETF Shares	National Financial Services LLC	22.34%
	Merrill Lynch, Pierce, Fenner & Smith	14.50%
	Morgan Stanley DW Inc.	9.14%
	Charles Schwab & Co., Inc.	8.66%
	Vanguard Marketing Corporation	7.94%
	The Bank of New York Mellon	5.61%
Institutional Shares	UBS Financial Services LLC	5.58%
	Charles Schwab & Co., Inc., San Francisco, CA	33.05%
	National Financial Services, Jersey City, NJ	8.57%
	SEI Private Trust Company, Oaks, PA	6.14%
	Cincinnati Bengals Inc. Cincinnati, OH	5.08%

Vanguard Mid-Cap Growth Fund (1997)

- A series of Vanguard Whitehall Funds.
- Advised by Victory Capital Management Inc., through its RS Investments franchise and William Blair Investment Management, LLC.
- Net assets of \$4,185,750,114 and 169,638,351 outstanding shares.

- Nominees who own shares of this fund: HEISEN, over \$100,000.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
Investor Shares	Fidelity Investments Institutional Operations Company, Inc., Covington, KY	11.01%
	National Financial Services, Jersey City, NJ	7.32%
	Charles Schwab & Co., Inc., San Francisco, CA	5.42%

Vanguard Mid-Cap Growth Index Fund (2006)

- A series of Vanguard Index Funds.
- Advised by The Vanguard Group, Inc.
- Net assets of \$9,656,539,251 and 143,214,993 outstanding shares.
- Nominees who own shares of this fund: HEISEN, over \$100,000.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
Admiral Shares	Charles Schwab & Co., Inc., San Francisco, CA	8.44%
	National Financial Services, Jersey City, NJ	5.85%
ETF Shares	National Financial Services LLC	21.65%
	Morgan Stanley DW Inc.	11.15%
	Charles Schwab & Co., Inc.	11.03%
	TD Ameritrade Clearing, Inc.	8.10%
	Vanguard Marketing Corporation	6.09%
	UBS Financial Services LLC	5.32%
Investor Shares	Charles Schwab & Co., Inc., San Francisco, CA	8.46%
	Ascensus Trust Company FBO Vanguard House Account Frontier Pro, Fargo, ND	7.55%
	Nationwide Trust Company FSB, Columbus, OH	7.12%
	National Financial Services, Jersey City, NJ	6.73%

Vanguard Mid-Cap Index Fund (1998)

- A series of Vanguard Index Funds.
- Advised by The Vanguard Group, Inc.
- Net assets of \$86,052,599,973 and 922,075,308 outstanding shares.
- Nominees who own shares of this fund: MULLIGAN, over \$100,000; RASKIN, over \$100,000.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
Admiral Shares	Charles Schwab & Co., Inc., San Francisco, CA	7.51%
ETF Shares	TD Ameritrade Clearing, Inc.	10.78%
	Charles Schwab & Co., Inc.	10.69%
	National Financial Services LLC	8.35%
	UBS Financial Services LLC	5.96%
	Morgan Stanley DW Inc.	5.89%
	The Bank of New York Mellon	5.19%
	First Clearing, LLC	5.07%
	Vanguard Marketing Corporation	5.01%
Institutional Shares	Fidelity Investments Institutional Operations Company, Inc., Covington, KY	14.80%
	Charles Schwab & Co., Inc., San Francisco, CA	5.86%
Institutional Plus Shares	Fidelity Investments Institutional Operations Company, Inc., Covington, KY	20.51%
	Northern Trust Co. FBO Accenture-DV, Chicago, IL	5.95%
	Mac & Co., Pittsburgh, PA	5.48%
	State Street Corporation, Boston, MA	5.22%
Investor Shares	Charles Schwab & Co., Inc., San Francisco, CA	13.79%
	National Financial Serv. Corp Jersey City, NJ	11.22%

Vanguard Mid-Cap Value Index Fund (2006)

- A series of Vanguard Index Funds.
- Advised by The Vanguard Group, Inc.
- Net assets of \$15,060,792,860 and 220,833,696 outstanding shares.
- Nominees who own shares of this fund: NONE.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
Admiral Shares	Charles Schwab & Co., Inc., San Francisco, CA	11.13%
ETF Shares	National Financial Services LLC	13.91%
	Charles Schwab & Co., Inc.	13.78%
	TD Ameritrade Clearing, Inc.	12.84%
	Morgan Stanley DW Inc.	7.99%
	Vanguard Marketing Corporation	5.32%
Investor Shares	National Financial Services, Jersey City, NJ	13.94%
	Charles Schwab & Co., Inc., San Francisco, CA	12.89%
	Ascensus Trust Company FBO Vanguard House Account Frontier Pro., Fargo, ND	5.59%

Vanguard Morgan™ Growth Fund (1968)

- A series of Vanguard Morgan Growth Fund.
- Advised by Frontier Capital Management Co., LLC; Jennison Associates LLC; The Vanguard Group, Inc.; and Wellington Management Company LLP.
- Net assets of \$12,153,486,090 and 239,563,668 outstanding shares.
- Nominees who own shares of this fund: MCNABB, \$10,001–\$50,000.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
Admiral Shares	Fidelity Investments Institutional Operations Company, Inc., Covington, KY	8.39%
	Cox Enterprises, Inc. Savings and Investment Plan, Atlanta, GA	6.34%
Investor Shares	Vanguard STAR Fund, Valley Forge, PA	30.37%
	Vanguard Diversified Equity Fund, Valley Forge, PA	5.02%

Vanguard Mortgage-Backed Securities Index Fund (2009)

- A series of Vanguard Scottsdale Funds.
- Advised by The Vanguard Group, Inc.
- Net assets of \$4,567,357,710 and 101,598,268 outstanding shares.
- Nominees who own shares of this fund: NONE.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
Admiral Shares	SEI Private Trust Company FBO SunTrust Bank, Oaks, PA	42.12%
	National Financial Services, Jersey City, NJ	25.17%
	Charles Schwab & Co., Inc., San Francisco, CA	6.09%
ETF Shares	Charles Schwab & Co., Inc.	31.86%
	State Street Bank and Trust Company	11.41%
	National Financial Services LLC	8.72%
	Merrill Lynch, Pierce, Fenner & Smith	7.46%
	Ameriprise Advisor Services, Inc.	6.27%
	Pershing LLC	6.00%
Institutional Shares	The Bank of New York Mellon	5.42%
	National Financial Services, Jersey City, NJ	99.99%

Vanguard Municipal Cash Management Fund (2004)

- A series of Vanguard CMT Funds.
- Advised by The Vanguard Group, Inc.
- Net assets of \$2,485,037,266 and 24,893,144 outstanding shares.
- Nominees who own shares of this fund: NONE.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
Investor Shares	Vanguard Tax-Exempt Money Market Fund, Valley Forge, PA	29.92%
	Vanguard Intermediate-Term Tax-Exempt Fund, Valley Forge, PA	28.23%
	Vanguard Limited-Term Tax-Exempt Fund, Valley Forge, PA	16.30%
	Vanguard Short-Term Tax-Exempt Fund, Valley Forge, PA	15.22%
	Vanguard High-Yield Tax-Exempt Fund, Valley Forge, PA	5.48%

Vanguard Municipal Money Market Fund (1980)

- A series of Vanguard Municipal Bond Funds.
- Advised by The Vanguard Group, Inc.
- Net assets of \$16,944,351,712 and 16,941,978,571 outstanding shares.
- Nominees who own shares of this fund: BUCKLEY, over \$100,000.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares: NONE.

Vanguard New Jersey Long-Term Tax-Exempt Fund (1988)

- A series of Vanguard New Jersey Tax-Free Funds.
- Advised by The Vanguard Group, Inc.
- Net assets of \$2,049,785,145 and 171,058,466 outstanding shares.
- Nominees who own shares of this fund: NONE.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
Investor Shares	National Financial Services LLC, Jersey City, NJ	15.69%
	Charles Schwab & Co., Inc., San Francisco, CA	15.63%

Vanguard New Jersey Municipal Money Market Fund (1988)

- A series of Vanguard New Jersey Tax-Free Funds.
- Advised by The Vanguard Group, Inc.
- Net assets of \$1,246,021,999 and 1,245,737,091 outstanding shares.
- Nominees who own shares of this fund: NONE.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares: NONE.

Vanguard New York Long-Term Tax-Exempt Fund (1986)

- A series of Vanguard New York Tax-Free Funds.
- Advised by The Vanguard Group, Inc.
- Net assets of \$4,261,024,073 and 360,229,308 outstanding shares.
- Nominees who own shares of this fund: NONE.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
Investor Shares	National Financial Services LLC, Jersey City, NJ	22.39%
	Charles Schwab & Co., Inc., San Francisco, CA	15.30%

Vanguard New York Municipal Money Market Fund (1997)

- A series of Vanguard New York Tax-Free Funds.
- Advised by The Vanguard Group, Inc.
- Net assets of \$2,289,303,126 and 2,289,087,939 outstanding shares.
- Nominees who own shares of this fund: NONE.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
Investor Shares	Vanguard Marketing Corp., Valley Forge, PA	7.09%

Vanguard Ohio Long-Term Tax-Exempt Fund (1990)

- A series of Vanguard Ohio Tax-Free Funds.
- Advised by The Vanguard Group, Inc.
- Net assets of \$1,163,855,924 and 92,300,425 outstanding shares.
- Nominees who own shares of this fund: NONE.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
Investor Shares	Charles Schwab & Co., Inc., San Francisco, CA	9.06%
	National Financial Services, Jersey City, NJ	7.16%

Vanguard Pacific Stock Index Fund (1990)

- A series of Vanguard International Equity Index Funds.
- Advised by The Vanguard Group, Inc.
- Net assets of \$6,749,940,620 and 137,168,405 outstanding shares.
- Nominees who own shares of this fund: HEISEN, \$1–\$10,000; VOLANAKIS, \$50,001–\$100,000.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
ETF Shares	The Bank of New York Mellon	19.44%
	JPMorgan Chase Bank, National Association	12.97%
	Charles Schwab & Co., Inc.	12.27%
	National Financial Services LLC	7.99%
	Vanguard Marketing Corporation	5.32%
	First Clearing, LLC	5.11%

Institutional Shares	Park National Bank, Newark, OH	15.19%
	HOCO FBO Non Fid ERISA, Kansas City, MO	9.84%
	Singleton Group LLC, Newport Beach, CA	9.30%
	Russell Trust Company Tr Solvay America Companies Pension Plan, Seattle, WA	6.41%
	UMB Bank NA, Carpinteria, CA	6.30%
	Vanguard Charitable Program, Pacific Stock Index Select Pool, Southeastern, PA	5.37%
Investor Shares	Charles Schwab & Co., Inc., San Francisco, CA	15.19%
	National Financial Services LLC, Jersey City, NJ	10.31%

Vanguard Pennsylvania Long-Term Tax-Exempt Fund (1986)

- A series of Vanguard Pennsylvania Tax-Free Funds.
- Advised by The Vanguard Group, Inc.
- Net assets of \$3,465,261,965 and 298,565,932 outstanding shares.
- Nominees who own shares of this fund: GUTMANN, over \$100,000; MCNABB, over \$100,000.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
Investor Shares	Charles Schwab & Co., Inc., San Francisco, CA	15.15%
	National Financial Services LLC, Jersey City, NJ	10.11%

Vanguard Pennsylvania Municipal Money Market Fund (1988)

- A series of Vanguard Pennsylvania Tax-Free Funds.
- Advised by The Vanguard Group, Inc.
- Net assets of \$1,961,128,582 and 1,960,944,127 outstanding shares.
- Nominees who own shares of this fund: NONE.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares: NONE.

Vanguard Precious Metals and Mining Fund (1984)

- A series of Vanguard Specialized Funds.
- Advised by M&G Investment Management Limited.
- Net assets of \$2,487,937,962 and 244,919,788 outstanding shares.
- Nominees who own shares of this fund: NONE.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
Investor Shares	National Financial Services, Jersey City, NJ	6.79%

Vanguard Prime Money Market Fund (1975)

- A series of Vanguard Money Market Reserves.
- Advised by The Vanguard Group, Inc.
- Net assets of \$96,977,137,997 and 96,966,825,983 outstanding shares.
- Nominees who own shares of this fund: FULLWOOD, \$1–\$10,000; HEISEN, over \$100,000; LOUGHREY, over \$100,000; LOUGHRIDGE, \$10,001–\$50,000; PEROLD, \$10,001–\$50,000; VOLANAKIS, \$1–\$10,000.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
Institutional Shares	Fidelity Investments Institutional Operations Company, Inc., Covington, KY	8.07%
	FedEx Corporation Retirement Savings Plan, Memphis, TN	6.18%

Vanguard PRIMECAP Core Fund (2004)

- A series of Vanguard Fenway Funds.
- Advised by PRIMECAP Management Company.
- Net assets of \$9,693,003,958 and 390,017,732 outstanding shares.
- Nominees who own shares of this fund: BUCKLEY, over \$100,000; FULLWOOD, over \$100,000; HEISEN, over \$100,000; MALPASS, over \$100,000; MCNABB, over \$100,000.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
Investor Shares	Fidelity Investments Institutional Operations Company, Inc., Covington, KY	8.07%
	Charles Schwab & Co., Inc., San Francisco, CA	6.49%
	Fidelity Investments Institutional Operations Company, Inc., as agent for Astra Zeneca 401K Plans, Covington, KY	5.31%

Vanguard PRIMECAP Fund (1984)

- A series of Vanguard Chester Funds.
- Advised by PRIMECAP Management Company.
- Net assets of \$53,879,379,873 and 439,947,187 outstanding shares.
- Nominees who own shares of this fund: FULLWOOD, \$10,001–\$50,000; MALPASS, \$50,001–\$100,000; MCNABB, over \$100,000.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
Admiral Shares	FedEx Corporation Retirement Savings Plan, Memphis, TN	7.03%
Investor Shares	Vanguard STAR Fund, Valley Forge, PA	15.60%
	Charles Schwab & Co., Inc., San Francisco, CA	5.21%

Vanguard REIT Index Fund (1996)

- A series of Vanguard Specialized Funds.
- Advised by The Vanguard Group, Inc.
- Net assets of \$62,541,390,043 and 1,102,847,079 outstanding shares.
- Nominees who own shares of this fund: RASKIN, \$1–\$10,000.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
Admiral Shares	Charles Schwab & Co., Inc., San Francisco, CA	5.76%
ETF Shares	Charles Schwab & Co., Inc.	11.88%
	National Financial Services LLC	9.42%
	First Clearing, LLC	8.06%
	TD Ameritrade Clearing, Inc.	7.79%
	JPMorgan Chase Bank, National Association	6.31%
	Wells Fargo Bank, National Association	6.31%
Institutional Shares	Fidelity Investments Institutional Operations Company, Inc., Covington, KY	13.83%
	National Financial Services, Jersey City, NJ	7.61%
Investor Shares	Charles Schwab & Co., Inc., San Francisco, CA	17.27%
	National Financial Services, Jersey City, NJ	15.36%

Vanguard Russell 1000 Growth Index Fund (2010)

- A series of Vanguard Scottsdale Funds.
- Advised by The Vanguard Group, Inc.
- Net assets of \$3,648,960,982 and 20,238,922 outstanding shares.
- Nominees who own shares of this fund: NONE.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
ETF Shares	Charles Schwab & Co., Inc.	13.56%
	Merrill Lynch, Pierce, Fenner & Smith	10.79%
	Morgan Stanley DW Inc.	10.35%
	UBS Financial Services LLC	10.16%
	National Financial Services LLC	6.35%
	First Clearing, LLC	6.10%
	JPMorgan Chase Bank, National Association	5.08%
	Institutional Shares	National Financial Services, Jersey City, NJ
SEI Private Trust Company, Oaks, PA		6.24%
Mitra & Co FBO 98 – ERISA Only, Green Bay, WI		6.24%
Capinco, Milwaukee, WI		6.14%
State Street Bank Tr Transamerica Retirement Solutions Corporation, Harrison, NY		5.59%

Vanguard Russell 1000 Index Fund (2010)

- A series of Vanguard Scottsdale Funds.
- Advised by The Vanguard Group, Inc.
- Net assets of \$2,708,728,806 and 15,604,633 outstanding shares.
- Nominees who own shares of this fund: NONE.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
ETF Shares	National Financial Services LLC	15.41%
	UBS Financial Services LLC	15.39%
	Charles Schwab & Co., Inc.	14.91%
	Vanguard Marketing Corporation	12.98%
	Pershing LLC	5.06%
Institutional Shares	National Financial Services, Jersey City, NJ	13.50%
	General Atomics 401(K) Retirement Savings Plan, San Diego, CA	7.30%
	Mac & Co., Pittsburgh, PA	5.37%
	Wells Fargo Bank, NA FBO St Pete Fire-Vanguard, Minneapolis, MN	5.25%

Vanguard Russell 1000 Value Index Fund (2010)

- A series of Vanguard Scottsdale Funds.
- Advised by The Vanguard Group, Inc.
- Net assets of \$2,604,340,045 and 18,343,608 outstanding shares.
- Nominees who own shares of this fund: NONE.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
ETF Shares	Merrill Lynch, Pierce, Fenner & Smith	14.91%
	Morgan Stanley DW Inc.	10.57%
	Charles Schwab & Co., Inc.	10.18%
	National Financial Services LLC	8.83%
	UBS Financial Services LLC	7.99%
Institutional Shares	Mitra & Co. FBO 98 – ERISA Only, Green Bay, WI	11.57%
	National Financial Services, Jersey City, NJ	8.17%
	SEI Private Trust Company, Oaks, PA	7.88%
	Capinco, Milwaukee, WI	7.66%
	401(K) Savings Plan of Fiserv, Inc., Brookfield, WI	6.54%
	Fidelity Investments Institutional Operations Company, Inc., Covington, KY	5.84%

Vanguard Russell 2000 Growth Index Fund (2010)

- A series of Vanguard Scottsdale Funds.
- Advised by The Vanguard Group, Inc.
- Net assets of \$519,741,510 and 3,025,865 outstanding shares.
- Nominees who own shares of this fund: NONE.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
ETF Shares	Charles Schwab & Co., Inc.	20.18%
	National Financial Services LLC	14.26%
	Vanguard Marketing Corporation	10.48%
	Ameriprise Advisor Services, Inc.	6.73%
	Merrill Lynch, Pierce, Fenner & Smith	6.61%
Institutional Shares	SEI Private Trust Company, Oaks, PA	24.69%
	Mac & Co., Pittsburgh, PA	23.92%
	Fidelity Investments Institutional Operations Company, Inc., Covington, KY	21.01%
	Capinco, Milwaukee, WI	6.45%
	John Hancock Trust Company LLC, Westwood, MA	6.39%

Vanguard Russell 2000 Index Fund (2010)

- A series of Vanguard Scottsdale Funds.
- Advised by The Vanguard Group, Inc.
- Net assets of \$1,570,542,463 and 11,953,504 outstanding shares.
- Nominees who own shares of this fund: NONE.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
ETF Shares	National Financial Services LLC	16.32%
	Charles Schwab & Co., Inc.	10.78%
	UBS Financial Services LLC	9.51%
	Pershing LLC	6.93%
	Merrill Lynch, Pierce, Fenner & Smith	6.42%
	Northern Trust Company, The	6.42%
	Vanguard Marketing Corporation	5.27%
Institutional Shares	National Financial Services, Jersey City, NJ	22.17%
	Mitra & Co. FBO 98, Green Bay, WI	6.41%
	Mac & Co., Pittsburgh, Pa	5.98%
	Community Funds Inc. CFI Pool, New York, NY	5.72%
	Fidelity Investments Institutional Operations Company, Inc., Covington, KY	5.65%

Vanguard Russell 2000 Value Index Fund (2010)

- A series of Vanguard Scottsdale Funds.
- Advised by The Vanguard Group, Inc.
- Net assets of \$312,736,398 and 2,388,863 outstanding shares.
- Nominees who own shares of this fund: NONE.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
ETF Shares	Charles Schwab & Co., Inc.	23.59%
	National Financial Services LLC	12.42%
	Vanguard Marketing Corporation	11.49%
	First Clearing, LLC	6.46%
Institutional Shares	SEI Private Trust Company, Oaks, PA	38.29%
	National Financial Services, Jersey City, NJ	19.78%
	John Hancock Trust Company LLC, Westwood, MA	12.63%
	Wells Fargo Bank, NA FBO Westport-Mutual, Minneapolis, MN	8.87%
	Mitra & Co. FBO 98, Green Bay, WI	8.67%

Vanguard Russell 3000 Index Fund (2010)

- A series of Vanguard Scottsdale Funds.
- Advised by The Vanguard Group, Inc.
- Net assets of \$1,247,414,479 and 7,245,329 outstanding shares.
- Nominees who own shares of this fund: NONE.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
ETF Shares	Vanguard Marketing Corporation	17.16%
	Charles Schwab & Co., Inc.	11.67%
	Morgan Stanley DW Inc.	10.17%
	National Financial Services LLC	9.88%
	Manufacturers and Traders Trust Company	6.16%
	First Clearing, LLC	5.99%
	Bank of America, NA/Gwim Trust Operations	5.64%

Institutional Shares	Mac & Co., Pittsburgh, PA	10.39%
	Charles Schwab & Co., Inc., San Francisco, CA	10.15%
	SEI Private Trust Company, Oaks, PA	9.38%
	Massachusetts Mutual Life Insurance Company, Springfield, MA	8.12%
	Wells Fargo Bank, NA FBO PHSA Short Term Directed Account, Minneapolis, MN	7.48%
	Wells Fargo Bank, NA FBO HMM - Operational Portfolio, Minneapolis, MN	6.37%
	Wells Fargo Bank, NA FBO HMM - Collis P&H Portfolio, Minneapolis, MN	5.82%

Vanguard S&P 500 Growth Index Fund (2010)

- A series of Vanguard Admiral® Funds.
- Advised by The Vanguard Group, Inc.
- Net assets of \$1,571,298,861 and 12,700,000 outstanding shares.
- Nominees who own shares of this fund: NONE.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
ETF Shares	National Financial Services LLC	15.22%
	LPL Financial Corporation	12.06%
	Charles Schwab & Co., Inc.	11.71%
	Merrill Lynch, Pierce, Fenner & Smith	10.20%
	Vanguard Marketing Corporation	8.82%
	TD Ameritrade Clearing, Inc.	5.76%
	Morgan Stanley DW Inc.	5.76%

Vanguard S&P 500 Value Index Fund (2010)

- A series of Vanguard Admiral® Funds.
- Advised by The Vanguard Group, Inc.
- Net assets of \$720,063,082 and 7,191,771 outstanding shares.
- Nominees who own shares of this fund: NONE.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
ETF Shares	Merrill Lynch, Pierce, Fenner & Smith	23.11%
	LPL Financial Corporation	16.90%
	National Financial Services LLC	12.18%
	Charles Schwab & Co., Inc.	11.24%
Institutional Shares	Harvest Foundation Of The Piedmont, Martinsville, VA	58.63%
	National Financial Services LLC, Jersey City, NJ	41.34%

Vanguard S&P Mid-Cap 400 Growth Index Fund (2010)

- A series of Vanguard Admiral® Funds.
- Advised by The Vanguard Group, Inc.
- Net assets of \$1,028,940,112 and 7,245,710 outstanding shares.
- Nominees who own shares of this fund: NONE.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
ETF Shares	Vanguard Marketing Corporation	44.82%
	Charles Schwab & Co., Inc.	14.13%
	National Financial Services LLC	8.86%
	The Bank of New York Mellon	6.39%
	Raymond, James & Associates, Inc.	5.95%
Institutional Shares	Merrill Lynch, Pierce, Fenner & Smith Inc. Jacksonville, FL	27.78%
	Mori & Co. FBO FID ERISA, Kansas City, MO	20.06%
	Mitra & Co. FBO 98, Green Bay, WI	15.98%
	Capinco, Milwaukee, WI	10.12%
	Charles Schwab & Co., Inc., San Francisco, CA	5.37%
	ICMA Retirement Corporation, Washington, DC	5.20%
	Fidelity Investments Institutional Operations Company, Inc., Covington, KY	5.04%

Vanguard S&P Mid-Cap 400 Index Fund (2010)

- A series of Vanguard Admiral® Funds.
- Advised by The Vanguard Group, Inc.
- Net assets of \$1,840,202,827 and 11,064,244 outstanding shares.
- Nominees who own shares of this fund: NONE.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
ETF Shares	Vanguard Marketing Corporation	17.78%
	National Financial Services LLC	10.86%
	Charles Schwab & Co., Inc.	7.54%
	Morgan Stanley DW Inc.	6.83%
	Raymond, James & Associates, Inc.	5.64%
	Ameriprise Advisor Services, Inc.	5.11%
	Institutional Shares	National Financial Services, Jersey City, NJ
Fidelity Investments Institutional Operations Company, Inc., Covington, KY		14.08%
DCGT FBO Principal Life Insurance Company, Des Moines, IA		9.86%
Voya Institutional Trust Co. FBO Core Market Solutions, Braintree, MA		5.92%

Vanguard S&P Mid-Cap 400 Value Index Fund (2010)

- A series of Vanguard Admiral® Funds.
- Advised by The Vanguard Group, Inc.
- Net assets of \$777,517,049 and 6,356,026 outstanding shares.
- Nominees who own shares of this fund: NONE.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
ETF Shares	Vanguard Marketing Corporation	52.62%
	Charles Schwab & Co., Inc.	15.82%
	National Financial Services LLC	9.80%
Institutional Shares	Mori & Co FBO FID ERISA, Kansas City, MO	41.38%
	SEI Private Trust Company, Oaks, PA	28.63%
	BMO Harris Bank NA FBO Arvest Bank, Bartlesville, OK	14.38%
	The Peddie School, Hightstown, NJ	7.88%
	Charles Schwab & Co., Inc., San Francisco, CA	5.99%

Vanguard S&P Small-Cap 600 Growth Index Fund (2010)

- A series of Vanguard Admiral® Funds.
- Advised by The Vanguard Group, Inc.
- Net assets of \$247,365,141 and 1,900,000 outstanding shares.
- Nominees who own shares of this fund: NONE.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
ETF Shares	Vanguard Marketing Corporation	14.01%
	Charles Schwab & Co., Inc.	13.59%
	TD Ameritrade Clearing, Inc.	10.46%
	National Financial Services LLC	10.35%
	Pershing LLC	8.99%
	Raymond, James & Associates, Inc.	8.99%

Vanguard S&P Small-Cap 600 Index Fund (2010)

- A series of Vanguard Admiral® Funds.
- Advised by The Vanguard Group, Inc.
- Net assets of \$1,219,878,172 and 7,400,897 outstanding shares.
- Nominees who own shares of this fund: NONE.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
ETF Shares	Charles Schwab & Co., Inc.	14.76%
	National Financial Services LLC	12.55%
	Vanguard Marketing Corporation	11.04%
	First Clearing, LLC	7.38%
	Ameriprise Advisor Services, Inc.	6.20%
	LPL Financial Corporation	5.86%
	Morgan Stanley DW Inc.	5.46%
	Pershing LLC	5.06%
Institutional Shares	Merrill Lynch, Pierce, Fenner & Smith Inc. Jacksonville, FL	24.12%
	Fidelity Investments Institutional Operations Company, Inc., Covington, KY	16.74%
	Mac & Co., Pittsburgh, PA	7.90%
	Wells Fargo Bank, Charlotte, NC	5.03%

Vanguard S&P Small-Cap 600 Value Index Fund (2010)

- A series of Vanguard Admiral® Funds.
- Advised by The Vanguard Group, Inc.
- Net assets of \$222,197,753 and 1,830,302 outstanding shares.
- Nominees who own shares of this fund: NONE.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
ETF Shares	Vanguard Marketing Corporation	24.89%
	Charles Schwab & Co., Inc.	15.64%
	National Financial Services LLC	11.77%
	Pershing LLC	6.79%
	TD Ameritrade Clearing, Inc.	6.39%
	UBS Financial Services LLC	6.01%
Institutional Shares	TD Ameritrade Trust Company CO#00P74, Denver, CO	93.28%
	National Financial Services, Jersey City, NJ	6.58%

Vanguard Selected Value Fund (1996)

- A series of Vanguard Whitehall Funds.
- Advised by Barrow, Hanley, Mewhinney & Strauss, LLC; Donald Smith & Co., Inc.; and Pzena Investment Management, LLC.
- Net assets of \$10,032,529,031 and 329,867,427 outstanding shares.
- Nominees who own shares of this fund: MCNABB, \$10,001–\$50,000; VOLANAKIS, over \$100,000.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
Investor Shares	Fidelity Investments Institutional Operations Company, Inc., Covington, KY	7.96%
	Charles Schwab & Co., Inc., San Francisco, CA	7.25%
	National Financial Services, Jersey City, NJ	7.05%

Vanguard Short-Term Bond Index Fund (1994)

- A series of Vanguard Bond Index Funds.
- Advised by The Vanguard Group, Inc.
- Net assets of \$48,977,928,627 and 2,851,516,629 outstanding shares.
- Nominees who own shares of this fund: RASKIN, \$10,001–\$50,000.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
Admiral Shares	Charles Schwab & Co., Inc., San Francisco, CA	14.75%
	National Financial Services, Jersey City, NJ	8.89%
ETF Shares	Merrill Lynch, Pierce, Fenner & Smith	20.03%
	Pershing LLC	11.35%
	Charles Schwab & Co., Inc.	9.47%
	Morgan Stanley DW Inc.	9.15%
	National Financial Services LLC	8.12%
Institutional Shares	TD Ameritrade Clearing, Inc.	6.88%
	National Financial Services, Jersey City, NJ	13.03%
	Fidelity Investments Institutional Operations Company, Inc., Covington, KY	6.69%
Institutional Plus Shares	Charles Schwab & Co., Inc., San Francisco, CA	5.68%
	Fidelity Investments Institutional Operations Company, Inc., Covington, KY	13.45%
	State of Utah Educational Savings Plan, Salt Lake City, UT	12.97%
	MetLife FBO Kaiser Permanente, New York, NY	6.18%
	Chevron Employee Savings Investment Plan, San Ramon, CA	6.07%
Investor Shares	Charles Schwab & Co., Inc., San Francisco, CA	5.19%
	Charles Schwab & Co., Inc., San Francisco, CA	22.69%
	National Financial Services, Jersey City, NJ	20.34%

Vanguard Short-Term Corporate Bond Index Fund (2009)

- A series of Vanguard Scottsdale Funds.
- Advised by The Vanguard Group, Inc.
- Net assets of \$22,994,953,400 and 411,427,316 outstanding shares.
- Nominees who own shares of this fund: NONE.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
Admiral Shares	Charles Schwab & Co., Inc., San Francisco, CA	12.77%
	National Financial Services, Jersey City, NJ	8.02%
ETF Shares	Charles Schwab & Co., Inc.	14.92%
	National Financial Services LLC	8.77%
	Morgan Stanley DW Inc.	7.50%
	TD Ameritrade Clearing, Inc.	7.43%
	Ameriprise Advisor Services, Inc.	6.69%
	JPMorgan Chase Bank, National Association	5.75%
	First Clearing, LLC	5.57%
Institutional Shares	The University of South Florida, Tampa, FL	21.21%
	National Financial Services, Jersey City, NJ	15.89%
	Wells Fargo Bank, NA FBO City Of Albuquerque, Minneapolis, MN	10.01%
	Delaware Public Employees Retirement System, Dover, DE	7.49%

Vanguard Short-Term Federal Fund (1987)

- A series of Vanguard Fixed Income Securities Funds.
- Advised by The Vanguard Group, Inc.
- Net assets of \$5,649,725,645 and 527,715,115 outstanding shares.
- Nominees who own shares of this fund: NONE.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
Admiral Shares	Wells Fargo Bank, Charlotte, NC	11.67%
	National Financial Services, Jersey City, NJ	9.82%
	Bright Start College Savings Plan-Bright Start Index Short Term Portfolio, Denver, CO	6.74%
	John Hancock Life Insurance Co. USA, Boston, MA	6.70%
	Charles Schwab & Co., Inc., San Francisco, CA	6.26%
Investor Shares	Charles Schwab & Co., Inc., San Francisco, CA	15.88%
	Wells Fargo Clearing Services LLC, Saint Louis, MO	14.61%
	National Financial Services, Jersey City, NJ	9.29%

Vanguard Short-Term Government Bond Index Fund (2009)

- A series of Vanguard Scottsdale Funds.
- Advised by The Vanguard Group, Inc.
- Net assets of \$2,132,133,941 and 55,094,387 outstanding shares.
- Nominees who own shares of this fund: NONE.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
Admiral Shares	National Financial Services, Jersey City, NJ	15.76%
	Charles Schwab & Co., Inc., San Francisco, CA	7.20%
ETF Shares	Merrill Lynch, Pierce, Fenner & Smith	26.75%
	Charles Schwab & Co., Inc.	15.52%
	TD Ameritrade Clearing, Inc.	9.50%
	National Financial Services LLC	6.78%
	Morgan Stanley DW Inc.	5.38%
Institutional Shares	Merrill Lynch, Pierce, Fenner & Smith Inc., Jacksonville, FL	23.24%
	National Financial Services, Jersey City, NJ	21.62%
	The Aerospace Corporation, El Segundo, CA	15.45%
	Pershing LLC, Jersey City, NJ	15.33%
	Trustees of Phillips Academy, Andover, MA	13.98%

Vanguard Short-Term Inflation-Protected Securities Index Fund (2012)

- A series of Vanguard Malvern Funds.
- Advised by The Vanguard Group, Inc.
- Net assets of \$20,131,042,663 and 740,839,967 outstanding shares.
- Nominees who own shares of this fund: NONE.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
Admiral Shares	Vanguard Institutional Target Retirement 2015 Fund, Valley Forge, PA	16.22%
	Charles Schwab & Co., Inc., San Francisco, CA	10.96%
	Vanguard Institutional Target Retirement 2020 Fund, Valley Forge, PA	10.78%
	Vanguard Institutional Target Retirement Income Fund, Valley Forge, PA	9.45%
	National Financial Services, Jersey City, NJ	8.72%
	Vanguard Institutional Target Retirement 2010 Fund, Valley Forge, PA	7.40%
ETF Shares	Charles Schwab & Co., Inc.	21.68%
	National Financial Services LLC	11.21%
	TD Ameritrade Clearing, Inc.	6.44%
	JPMorgan Chase Bank, National Association	6.17%
Institutional Shares	Vanguard Target Retirement 2015 Trust, Valley Forge, PA	18.31%
	Vanguard Target Retirement Income Trust, Valley Forge, PA	15.83%
	Vanguard Target Retirement 2020 Trust, Valley Forge, PA	14.07%
	Vanguard Target Retirement 2010 Trust, Valley Forge, PA	8.35%

Investor Shares	Vanguard Target Retirement Income Fund, Valley Forge, PA	33.18%
	Vanguard Target Retirement 2015 Fund, Valley Forge, PA	31.97%
	Vanguard Target Retirement 2020 Fund, Valley Forge, PA	17.15%
	Vanguard Target Retirement 2010 Fund, Valley Forge, PA	15.76%

Vanguard Short-Term Investment-Grade Fund (1982)

- A series of Vanguard Fixed Income Securities Funds.
- Advised by The Vanguard Group, Inc.
- Net assets of \$60,521,494,863 and 5,659,167,365 outstanding shares.
- Nominees who own shares of this fund: GUTMANN, \$10,001–\$50,000; LOUGHRIDGE, over \$100,000.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
Admiral Shares	Charles Schwab & Co., Inc., San Francisco, CA	17.32%
	National Financial Services, Jersey City, NJ	9.97%
Institutional Shares	State of Utah Educational Savings Plan, Salt Lake City, UT	9.95%
	National Financial Services LLC, Jersey City, NJ	9.30%
	Charles Schwab & Co., Inc., San Francisco, CA	6.10%
Investor Shares	Vanguard STAR Fund, Valley Forge, PA	25.53%
	Charles Schwab & Co., Inc., San Francisco, CA	17.95%
	National Financial Services, Jersey City, NJ	11.24%

Vanguard Short-Term Tax-Exempt Fund (1977)

- A series of Vanguard Municipal Bond Funds.
- Advised by The Vanguard Group, Inc.
- Net assets of \$14,796,081,204 and 935,869,618 outstanding shares.
- Nominees who own shares of this fund: LOUGHREY, \$50,001–\$100,000; MCNABB, over \$100,000.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
Admiral Shares	Charles Schwab & Co., Inc., San Francisco, CA	18.90%
	National Financial Services, Jersey City, NJ	14.54%
Investor Shares	Charles Schwab & Co., Inc., San Francisco, CA	28.00%
	National Financial Services, Jersey City, NJ	24.44%

Vanguard Short-Term Treasury Fund (1991)

- A series of Vanguard Fixed Income Securities Funds.
- Advised by The Vanguard Group, Inc.
- Net assets of \$7,768,249,949 and 729,141,914 outstanding shares.
- Nominees who own shares of this fund: NONE.

- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
Admiral Shares	Wells Fargo Bank, Charlotte, NC	7.64%
	Charles Schwab & Co., Inc., San Francisco, CA	6.60%
	Keshet Investments LP Partnership, Katonah, NY	5.28%
Investor Shares	Charles Schwab & Co., Inc., San Francisco, CA	17.36%
	National Financial Services, Jersey City, NJ	10.33%

Vanguard Small-Cap Growth Index Fund (1998)

- A series of Vanguard Index Funds.
- Advised by The Vanguard Group, Inc.
- Net assets of \$18,694,524,664 and 319,080,396 outstanding shares.
- Nominees who own shares of this fund: FULLWOOD, \$10,001–\$50,000; VOLANAKIS, over \$100,000.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
Admiral Shares	Charles Schwab & Co., Inc., San Francisco, CA	9.56%
	John Hancock Life Insurance Co. USA, Boston, MA	6.02%
ETF Shares	Charles Schwab & Co., Inc.	17.46%
	National Financial Services LLC	13.27%
	Edward D. Jones & Co.	10.97%
	Merrill Lynch, Pierce, Fenner & Smith	9.94%
	TD Ameritrade Clearing, Inc.	7.03%
	Morgan Stanley DW Inc.	6.97%
Institutional Shares	Vanguard Marketing Corporation	6.68%
	Fidelity Investments Institutional Operations Company, Inc., Covington, KY	22.37%
	Charles Schwab & Co., Inc., San Francisco, CA	11.33%
Investor Shares	Charles Schwab & Co., Inc., San Francisco, CA	14.58%
	National Financial Services Corp., Jersey City, NJ	13.46%

Vanguard Small-Cap Index Fund (1960)

- A series of Vanguard Index Funds.
- Advised by The Vanguard Group, Inc.
- Net assets of \$75,092,463,809 and 941,969,944 outstanding shares.
- Nominees who own shares of this fund: BUCKLEY, over \$100,000; FULLWOOD, over \$100,000; HEISEN, over \$100,000; MCNABB, over \$100,000; RASKIN, \$50,001–\$100,000.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
Admiral Shares	Charles Schwab & Co., Inc., San Francisco, CA	7.08%
ETF Shares	Charles Schwab & Co., Inc.	14.93%
	National Financial Services LLC	9.49%
	TD Ameritrade Clearing, Inc.	7.17%
	Edward D. Jones & Co.	7.06%
	Morgan Stanley DW Inc.	6.38%
	Vanguard Marketing Corporation	5.44%
Institutional Shares	Fidelity Investments Institutional Operations Company, Inc., Covington, KY	19.41%
	Charles Schwab & Co., Inc., San Francisco, CA	5.94%
	National Financial Services Corp., Jersey City, NJ	5.27%
Institutional Plus Shares	Fidelity Investments Institutional Operations Company, Inc., Covington, KY	19.76%
	National Financial Services, Jersey City, NJ	7.25%
	State Street Bank Tr Transamerica Retirement Solutions Corporation, Harrison, NY	5.78%
Investor Shares	Charles Schwab & Co., Inc., San Francisco, CA	16.88%
	National Financial Services Corp., Jersey City, NJ	11.39%

Vanguard Small-Cap Value Index Fund (1998)

- A series of Vanguard Index Funds.
- Advised by The Vanguard Group, Inc.
- Net assets of \$26,183,490,520 and 465,048,373 outstanding shares.
- Nominees who own shares of this fund: NONE.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
Admiral Shares	Charles Schwab & Co., Inc., San Francisco, CA	6.42%
ETF Shares	Charles Schwab & Co., Inc.	15.50%
	National Financial Services LLC	13.68%
	TD Ameritrade Clearing, Inc.	9.74%
	Edward D. Jones & Co.	9.14%
	Merrill Lynch, Pierce, Fenner & Smith	8.53%
	Vanguard Marketing Corporation	6.76%
Institutional Shares	Charles Schwab & Co., Inc., San Francisco, CA	12.55%
	Fidelity Investments Institutional Operations Company, Inc., Covington, KY	11.10%
	JPMorgan Chase Bank, NA FBO TIAA Separate Account VA, New York, NY	6.49%
Investor Shares	Charles Schwab & Co., Inc., San Francisco, CA	13.58%
	National Financial Services Corp., Jersey City, NJ	12.52%

Vanguard STAR® Fund (1985)

- A series of Vanguard STAR Funds.
- Advised by The Vanguard Group, Inc.
- Net assets of \$20,166,278,686 and 783,518,758 outstanding shares.
- Nominees who own shares of this fund: NONE.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares: NONE.

Vanguard Strategic Equity Fund (1995)

- A series of Vanguard Horizon Funds®.
- Advised by The Vanguard Group, Inc.
- Net assets of \$6,805,256,907 and 205,045,270 outstanding shares.
- Nominees who own shares of this fund: LOUGHRIDGE, over \$100,000.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares: NONE.

Vanguard Strategic Small-Cap Equity Fund (2006)

- A series of Vanguard Horizon Funds®.
- Advised by The Vanguard Group, Inc.
- Net assets of \$1,620,584,938 and 47,060,010 outstanding shares.
- Nominees who own shares of this fund: BUCKLEY, over \$100,000.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
Investor Shares	Charles Schwab & Co., Inc., San Francisco, CA	16.83%
	National Financial Services LLC, Jersey City, NJ	12.24%
	Fidelity Investments Institutional Operations Company, Inc., Covington, KY	5.48%

Vanguard Target Retirement 2015 Fund (2003)

- A series of Vanguard Chester Funds.
- Advised by The Vanguard Group, Inc.
- Net assets of \$17,381,995,358 and 1,135,073,360 outstanding shares.
- Nominees who own shares of this fund: NONE.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
Investor Shares	Fidelity Investments Institutional Operations Company, Inc., Covington, KY	5.96%

Vanguard Target Retirement 2020 Fund (2006)

- A series of Vanguard Chester Funds.
- Advised by The Vanguard Group, Inc.

- Net assets of \$30,387,738,982 and 1,008,641,805 outstanding shares.
- Nominees who own shares of this fund: NONE.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
Investor Shares	Fidelity Investments Institutional Operations Company, Inc., Covington, KY	10.84%

Vanguard Target Retirement 2025 Fund (2003)

- A series of Vanguard Chester Funds.
- Advised by The Vanguard Group, Inc.
- Net assets of \$35,737,326,822 and 2,036,240,994 outstanding shares.
- Nominees who own shares of this fund: NONE.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
Investor Shares	Fidelity Investments Institutional Operations Company, Inc., Covington, KY	9.54%

Vanguard Target Retirement 2030 Fund (2006)

- A series of Vanguard Chester Funds.
- Advised by The Vanguard Group, Inc.
- Net assets of \$29,441,535,496 and 933,437,478 outstanding shares.
- Nominees who own shares of this fund: NONE.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
Investor Shares	Fidelity Investments Institutional Operations Company, Inc., Covington, KY	12.14%

Vanguard Target Retirement 2035 Fund (2003)

- A series of Vanguard Chester Funds.
- Advised by The Vanguard Group, Inc.
- Net assets of \$28,424,538,033 and 1,474,779,719 outstanding shares.
- Nominees who own shares of this fund: NONE.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
Investor Shares	Fidelity Investments Institutional Operations Company, Inc., Covington, KY	10.18%

Vanguard Target Retirement 2040 Fund (2006)

- A series of Vanguard Chester Funds.
- Advised by The Vanguard Group, Inc.
- Net assets of \$21,063,769,373 and 637,895,346 outstanding shares.
- Nominees who own shares of this fund: NONE.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
Investor Shares	Fidelity Investments Institutional Operations Company, Inc., Covington, KY	12.88%

Vanguard Target Retirement 2045 Fund (2003)

- A series of Vanguard Chester Funds.
- Advised by The Vanguard Group, Inc.
- Net assets of \$19,128,233,736 and 924,386,431 outstanding shares.
- Nominees who own shares of this fund: NONE.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
Investor Shares	Fidelity Investments Institutional Operations Company, Inc., Covington, KY	10.55%

Vanguard Target Retirement 2050 Fund (2006)

- A series of Vanguard Chester Funds.
- Advised by The Vanguard Group, Inc.
- Net assets of \$12,350,499,300 and 371,020,968 outstanding shares.
- Nominees who own shares of this fund: FULLWOOD, over \$100,000.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
Investor Shares	Fidelity Investments Institutional Operations Company, Inc., Covington, KY	13.36%

Vanguard Target Retirement 2055 Fund (2010)

- A series of Vanguard Chester Funds.
- Advised by The Vanguard Group, Inc.
- Net assets of \$4,926,234,738 and 136,688,179 outstanding shares.
- Nominees who own shares of this fund: NONE.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
Investor Shares	Fidelity Investments Institutional Operations Company, Inc., Covington, KY	15.41%

Vanguard Target Retirement 2060 Fund (2012)

- A series of Vanguard Chester Funds.
- Advised by The Vanguard Group, Inc.
- Net assets of \$1,760,453,603 and 55,354,319 outstanding shares.
- Nominees who own shares of this fund: NONE.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
Investor Shares	Fidelity Investments Institutional Operations Company, Inc., Covington, KY	8.59%

Vanguard Target Retirement 2065 Fund (2017)

- A series of Vanguard Chester Funds.
- Advised by The Vanguard Group, Inc.
- Information as of May 31, 2017, is not available because the fund didn't commence operations until July 12, 2017.

Vanguard Target Retirement Income Fund (2003)

- A series of Vanguard Chester Funds.
- Advised by The Vanguard Group, Inc.
- Net assets of \$11,226,554,720 and 844,131,890 outstanding shares.
- Nominees who own shares of this fund: NONE.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares: NONE.

Vanguard Tax-Exempt Bond Index Fund (2015)

- A series of Vanguard Municipal Bond Funds.
- Advised by The Vanguard Group, Inc.
- Net assets of \$1,337,963,262 and 29,347,728 outstanding shares.
- Nominees who own shares of this fund: NONE.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
Admiral Shares	Gabriel Chehebar & Rosy Chehebar JT WROS, Sunny Isles Beach, FL	6.49%
ETF Shares	Charles Schwab & Co., Inc.	28.99%
	Raymond, James & Associates, Inc.	13.92%
	National Financial Services LLC	10.80%
	First Clearing, LLC	7.43%
	Vanguard Marketing Corporation	6.84%
Investor Shares	Pershing LLC, Jersey City, NJ	5.60%

Vanguard Tax-Managed Balanced Fund (1994)

- A series of Vanguard Tax-Managed Funds®.
- Advised by The Vanguard Group, Inc.
- Net assets of \$3,465,643,862 and 118,081,672 outstanding shares.
- Nominees who own shares of this fund: NONE.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
Admiral Shares	Charles Schwab & Co., Inc., San Francisco, CA	7.08%
	National Financial Services, Jersey City, NJ	5.60%

Vanguard Tax-Managed Capital Appreciation Fund (1994)

- A series of Vanguard Tax-Managed Funds®.
- Advised by The Vanguard Group, Inc.
- Net assets of \$8,129,106,512 and 71,368,088 outstanding shares.
- Nominees who own shares of this fund: BUCKLEY, over \$100,000; MCNABB, over \$100,000; VOLANAKIS, over \$100,000.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
Institutional Shares	Edward & Janis Donaghy Tr UA 12-11-2009 Edward & Janis Donaghy Living Trust, Fresno, CA	11.77%
	Donaghy Sales Inc., Fresno, CA	8.75%
	Peter R. Kemmerer & John C. Kemmerer Tr UA 05-08-1984 Mahlon S Kemmerer II Trust, Cranbury, NJ	7.57%
	National Financial Services, Jersey City, NJ	6.31%

Vanguard Tax-Managed Small-Cap Fund (1999)

- A series of Vanguard Tax-Managed Funds®.
- Advised by The Vanguard Group, Inc.
- Net assets of \$5,195,857,395 and 94,693,975 outstanding shares.
- Nominees who own shares of this fund: MCNABB, over \$100,000.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
Admiral Shares	Charles Schwab & Co., Inc., San Francisco, CA	6.84%
Institutional Shares	National Financial Services, Jersey City, NJ	18.67%
	Charles Schwab & Co., Inc., San Francisco, CA	8.18%
	Mac & Co., Pittsburgh, PA	6.51%
	Peter R. Kemmerer & John C. Kemmerer TR UA 05-08-1984 Mahlon S. Kemmerer II Trust, Cranbury, NJ	6.11%
	William K. Gayden & Cynthia N. Gayden TR UA 04-06-2016 The MP Management Trust Wkg, Dallas, TX	5.30%

Vanguard Telecommunication Services Index Fund (2004)

- A series of Vanguard World Fund.
- Advised by The Vanguard Group, Inc.
- Net assets of \$1,401,132,364 and 15,437,817 outstanding shares.
- Nominees who own shares of this fund: NONE.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
ETF Shares	Merrill Lynch, Pierce, Fenner & Smith	35.73%
	TD Ameritrade Clearing, Inc.	11.59%
	Charles Schwab & Co., Inc.	7.42%
	Vanguard Marketing Corporation	7.05%
	First Clearing, LLC	6.42%
	National Financial Services LLC	5.31%

Vanguard Total Bond Market Index Fund (1986)

- A series of Vanguard Bond Index Funds.
- Advised by The Vanguard Group, Inc.
- Net assets of \$182,374,406,940 and 14,136,641,330 outstanding shares.
- Nominees who own shares of this fund: GUTMANN, \$10,001–\$50,000; LOUGHRIDGE, over \$100,000; MCNABB, over \$100,000; VOLANAKIS, over \$100,000.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
Admiral Shares	Charles Schwab & Co., Inc., San Francisco, CA	6.06%
ETF Shares	State Street Bank and Trust Company	17.52%
	Edward D. Jones & Co.	14.75%
	Charles Schwab & Co., Inc.	10.25%
	National Financial Services LLC	6.69%
	Pershing LLC	5.93%
	TD Ameritrade Clearing, Inc.	5.85%
	Morgan Stanley DW Inc.	5.15%
Institutional Shares	Fidelity Investments Institutional Operations Company, Inc., Covington, KY	14.77%
	Charles Schwab & Co., Inc., San Francisco, CA	6.22%
	National Financial Services, Jersey City, NJ	6.00%
Institutional Plus Shares	Fidelity Investments Institutional Operations Company, Inc., Covington, KY	14.83%
	Charles Schwab & Co., Inc., San Francisco, CA	5.36%
Institutional Select Shares	Vanguard Institutional Total Bond Market Index Trust, Valley Forge, PA	99.93%
Investor Shares	Charles Schwab & Co., Inc., San Francisco, CA	11.43%
	National Financial Services, Jersey City, NJ	9.29%

Vanguard Total Bond Market II Index Fund (2009)

- A series of Vanguard Bond Index Funds.
- Advised by The Vanguard Group, Inc.
- Net assets of \$129,822,969,530 and 12,071,885,132 outstanding shares.
- Nominees who own shares of this fund: NONE.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
Institutional Shares	Vanguard Target Retirement 2025 Trust, Valley Forge, PA	17.04%
	Vanguard Target Retirement 2020 Trust, Valley Forge, PA	15.11%
	Vanguard Target Retirement 2030 Trust, Valley Forge, PA	12.16%
	Vanguard Target Retirement 2035 Trust, Valley Forge, PA	8.10%
	Vanguard Target Retirement 2015 Trust, Valley Forge, PA	6.64%
Investor Shares	Vanguard Target Retirement 2025 Fund, Valley Forge, PA	11.51%
	Vanguard Target Retirement 2020 Fund, Valley Forge, PA	11.17%
	Vanguard Target Retirement 2030 Fund, Valley Forge, PA	7.49%
	Vanguard Target Retirement 2015 Fund, Valley Forge, PA	7.08%
	Vanguard Institutional Target Retirement 2025 Fund, Valley Forge, PA	6.18%
	Vanguard Institutional Target Retirement 2020 Fund, Valley Forge, PA	5.85%
	Vanguard Target Retirement Income Fund, Valley Forge, PA	5.37%
	Vanguard Target Retirement 2035 Fund, Valley Forge, PA	5.34%
	Vanguard LifeStrategy Moderate Growth Fund, Valley Forge, PA	5.31%

Vanguard Total International Bond Index Fund (2013)

- A series of Vanguard Charlotte Funds.
- Advised by The Vanguard Group, Inc.
- Net assets of \$84,915,692,591 and 4,462,144,719 outstanding shares.
- Nominees who own shares of this fund: GUTMANN, \$10,001–\$50,000; LOUGHRIDGE, over \$100,000; VOLANAKIS, over \$100,000.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
Admiral Shares	Vanguard Institutional Target Retirement 2025 Fund, Valley Forge, PA	6.18%
	Vanguard Institutional Target Retirement 2020 Fund, Valley Forge, PA	5.87%

ETF Shares	Charles Schwab & Co., Inc.	15.40%
	National Financial Services LLC	13.76%
	Pershing LLC	10.13%
	Ridge Clearing & Outsourcing Solutions, Inc.	6.70%
	State Street Bank and Trust Company	6.09%
	Merrill Lynch, Pierce, Fenner & Smith	5.72%
	TD Ameritrade Clearing, Inc.	5.65%
Institutional Shares	Vanguard Target Retirement 2025 Trust, Valley Forge, PA	17.24%
	Vanguard Target Retirement 2020 Trust, Valley Forge, PA	15.42%
	Vanguard Target Retirement 2030 Trust, Valley Forge, PA	12.17%
	Vanguard Target Retirement 2035 Trust, Valley Forge, PA	8.06%
	Vanguard Target Retirement 2015 Trust, Valley Forge, PA	6.77%
Investor Shares	Vanguard Target Retirement 2025 Fund, Valley Forge, PA	15.52%
	Vanguard Target Retirement 2020 Fund, Valley Forge, PA	15.33%
	Vanguard Target Retirement 2030 Fund, Valley Forge, PA	10.05%
	Vanguard Target Retirement 2015 Fund, Valley Forge, PA	9.84%
	Vanguard Target Retirement Income Fund, Valley Forge, PA	7.44%
	Vanguard LifeStrategy Moderate Growth Fund, Valley Forge, PA	7.26%
	Vanguard Target Retirement 2035 Fund, Valley Forge, PA	7.00%
	Vanguard LifeStrategy Conservative Growth Fund, Valley Forge, PA	6.58%

Vanguard Total International Stock Index Fund (1996)

- A series of Vanguard STAR Funds.
- Advised by The Vanguard Group, Inc.
- Net assets of \$280,328,363,615 and 9,490,494,128 outstanding shares.
- Nominees who own shares of this fund: GUTMANN, over \$100,000; LOUGHREY, over \$100,000; LOUGHRIDGE, over \$100,000; MALPASS, over \$100,000; MCNABB, over \$100,000.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
ETF Shares	Vanguard Marketing Corporation	16.03%
	National Financial Services LLC	14.16%
	Charles Schwab & Co., Inc.	12.77%
	Merrill Lynch, Pierce, Fenner & Smith	7.62%
	Pershing LLC	6.02%
Institutional Shares	Fidelity Investments Institutional Operations Company, Inc., Covington, KY	9.44%
	National Financial Services, Jersey City, NJ	5.98%
	Charles Schwab & Co., Inc., San Francisco, CA	5.16%

Institutional Plus Shares	Vanguard Target Retirement 2035 Trust, Valley Forge, PA	11.53%
	Vanguard Target Retirement 2030 Trust, Valley Forge, PA	11.52%
	Vanguard Target Retirement 2025 Trust, Valley Forge, PA	11.47%
	Vanguard Target Retirement 2040 Trust, Valley Forge, PA	9.95%
	Vanguard Target Retirement 2045 Trust, Valley Forge, PA	8.86%
	Vanguard Target Retirement 2020 Trust, Valley Forge, PA	7.73%
	Vanguard Target Retirement 2050 Trust, Valley Forge, PA	6.05%
Institutional Select Shares	Vanguard Institutional Total International Stock Market Index Trust, Valley Forge, PA	99.96%
Investor Shares	Vanguard Target Retirement 2025 Fund, Valley Forge, PA	8.77%
	Vanguard Target Retirement 2035 Fund, Valley Forge, PA	8.54%
	Vanguard Target Retirement 2030 Fund, Valley Forge, PA	8.03%
	Vanguard Target Retirement 2040 Fund, Valley Forge, PA	6.93%
	Vanguard Target Retirement 2045 Fund, Valley Forge, PA	6.49%
	Vanguard Target Retirement 2020 Fund, Valley Forge, PA	6.48%

Vanguard Total Stock Market Index Fund (1992)

- A series of Vanguard Index Funds.
- Advised by The Vanguard Group, Inc.
- Net assets of \$574,666,131,873 and 7,946,371,291 outstanding shares.
- Nominees who own shares of this fund: BUCKLEY, over \$100,000; FULLWOOD, over \$100,000; GUTMANN, over \$100,000; HEISEN, over \$100,000; LOUGHREY, over \$100,000; LOUGHRIDGE, over \$100,000; MALPASS, over \$100,000; MCNABB, over \$100,000; VOLANAKIS, over \$100,000.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
ETF Shares	Charles Schwab & Co., Inc.	17.39%
	National Financial Services LLC	14.55%
	Vanguard Marketing Corporation	12.34%
	TD Ameritrade Clearing, Inc.	7.60%
Institutional Shares	Vanguard Institutional Target Retirement 2025 Fund, Valley Forge, PA	7.84%
	Vanguard Institutional Target Retirement 2035 Fund, Valley Forge, PA	7.77%
	Vanguard Institutional Target Retirement 2030 Fund, Valley Forge, PA	7.61%
	Vanguard Institutional Target Retirement 2040 Fund, Valley Forge, PA	7.10%
	Vanguard Institutional Target Retirement 2045 Fund, Valley Forge, PA	6.02%
	Vanguard Institutional Target Retirement 2020 Fund, Valley Forge, PA	5.59%

Institutional Plus Shares	Vanguard Target Retirement 2035 Trust, Valley Forge, PA	13.13%
	Vanguard Target Retirement 2030 Trust, Valley Forge, PA	13.08%
	Vanguard Target Retirement 2025 Trust, Valley Forge, PA	12.98%
	Vanguard Target Retirement 2040 Trust, Valley Forge, PA	11.26%
	Vanguard Target Retirement 2045 Trust, Valley Forge, PA	10.03%
	Vanguard Target Retirement 2020 Trust, Valley Forge, PA	8.70%
	Vanguard Target Retirement 2050 Trust, Valley Forge, PA	6.85%
Institutional Select Shares	Vanguard Institutional Total Stock Market Index Trust, Valley Forge, PA	99.89%
Investor Shares	Vanguard Target Retirement 2025 Fund, Valley Forge, PA	11.83%
	Vanguard Target Retirement 2035 Fund, Valley Forge, PA	11.65%
	Vanguard Target Retirement 2030 Fund, Valley Forge, PA	10.91%
	Vanguard Target Retirement 2040 Fund, Valley Forge, PA	9.44%
	Vanguard Target Retirement 2045 Fund, Valley Forge, PA	8.88%
	Vanguard Target Retirement 2020 Fund, Valley Forge, PA	8.74%
	Vanguard Target Retirement 2050 Fund, Valley Forge, PA	5.73%
	Vanguard LifeStrategy Growth Fund, Valley Forge, PA	5.51%

Vanguard Total World Stock Index Fund (2008)

- A series of Vanguard International Equity Index Funds.
- Advised by The Vanguard Group, Inc.
- Net assets of \$11,912,645,324 and 188,822,191 outstanding shares.
- Nominees who own shares of this fund: MCNABB, over \$100,000.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
ETF Shares	Charles Schwab & Co., Inc.	11.54%
	Vanguard Marketing Corporation	9.69%
	National Financial Services LLC	8.83%
	Brown Brothers Harriman & Co.	6.85%
	Northern Trust Company, The	6.72%
	JPMorgan Chase Bank, National Association	6.04%
	The Bank of New York Mellon	5.30%
Institutional Shares	Charles Schwab & Co., Inc., San Francisco, CA	14.48%
	National Financial Services, Jersey City, NJ	14.31%
	Global Trust Company FBO Highland Equity Fund LLC, Woburn, MA	9.05%
	Vanguard Marketing Corp FBO 21932793, Valley Forge, PA	5.97%
	Global Trust Company FBO Highland Collective Investment Trust, Woburn, MA	5.47%
Investor Shares	Charles Schwab & Co., Inc., San Francisco, CA	13.95%
	National Financial Services, Jersey City, NJ	10.45%

Vanguard Treasury Money Market Fund (1992)

- A series of Vanguard Admiral® Funds.
- Advised by The Vanguard Group, Inc.
- Net assets of \$15,246,142,935 and 15,208,193,415 outstanding shares.
- Nominees who own shares of this fund: PEROLD, \$1–\$10,000.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares: NONE.

Vanguard U.S. Growth Fund (1959)

- A series of Vanguard World Fund.
- Advised by Baillie Gifford Overseas Ltd.; Jackson Square Partners, LLC; Jennison Associates LLC; Wellington Management Company LLP; and William Blair Investment Management, LLC.
- Net assets of \$7,454,459,967 and 158,887,067 outstanding shares.
- Nominees who own shares of this fund: LOUGHRIDGE, over \$100,000; MCNABB, over \$100,000.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
Investor Shares	Vanguard STAR Fund, Valley Forge, PA	31.35%
	Vanguard Diversified Equity Fund, Valley Forge, PA	5.12%

Vanguard U.S Value Fund (2000)

- A series of Vanguard Malvern Funds.
- Advised by The Vanguard Group, Inc.
- Net assets of \$1,586,049,688 and 86,211,796 outstanding shares.
- Nominees who own shares of this fund: NONE.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
Investor Shares	Charles Schwab & Co., Inc., San Francisco, CA	6.22%
	National Financial Services, Jersey City, NJ	5.14%

Vanguard Ultra-Short-Term Bond Fund (2015)

- A series of Vanguard Fixed Income Securities Funds.
- Advised by The Vanguard Group, Inc.
- Net assets of \$2,818,108,373 and 148,704,604 outstanding shares.
- Nominees who own shares of this fund: MULLIGAN, over \$100,000.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
Admiral Shares	Charles Schwab & Co., Inc., San Francisco, CA	11.18%
	National Financial Services LLC, Jersey City, NJ	10.23%
	NYU Hospitals Center Capital Program, New York, NY	5.36%

Investor Shares	Charles Schwab & Co., Inc., San Francisco, CA	22.26%
	National Financial Services LLC, Jersey City, NJ	12.66%

Vanguard Utilities Index Fund (2004)

- A series of Vanguard World Fund.
- Advised by The Vanguard Group, Inc.
- Net assets of \$3,343,076,999 and 34,983,975 outstanding shares.
- Nominees who own shares of this fund: NONE.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
Admiral Shares	National Financial Services LLC, Jersey City, NJ	7.72%
ETF Shares	Vanguard Marketing Corporation	22.49%
	Charles Schwab & Co., Inc.	13.90%
	National Financial Services LLC	11.88%
	TD Ameritrade Clearing, Inc.	10.97%

Vanguard Value Index Fund (1992)

- A series of Vanguard Index Funds.
- Advised by The Vanguard Group, Inc.
- Net assets of \$56,145,380,817 and 1,002,497,366 outstanding shares.
- Nominees who own shares of this fund: GUTMANN, over \$100,000; RASKIN, \$10,001–\$50,000.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
Admiral Shares	Charles Schwab & Co., Inc., San Francisco, CA	7.63%
ETF Shares	Merrill Lynch, Pierce, Fenner & Smith	20.16%
	National Financial Services LLC	10.57%
	Edward D. Jones & Co.	9.01%
	Charles Schwab & Co., Inc.	7.53%
	Morgan Stanley DW Inc.	7.00%
	TD Ameritrade Clearing, Inc.	6.70%
	Brown Brothers Harriman & Co.	5.44%
Institutional Shares	Fidelity Investments Institutional Operations Company, Inc., Covington, KY	9.21%
	Charles Schwab & Co., Inc., San Francisco, CA	7.72%
	Cox Enterprises, Inc. Savings and Investment Plan 090535, Atlanta, GA	5.40%
Investor Shares	Charles Schwab & Co., Inc., San Francisco, CA	15.07%
	National Financial Services, Jersey City, NJ	12.03%
	Vanguard Managed Payout Fund, Valley Forge, PA	5.95%

Vanguard Variable Insurance Fund—Balanced Portfolio (1991)

- A series of Vanguard Variable Insurance Funds.
- Advised by Wellington Management Company LLP.
- Net assets of \$2,684,937,426 and 117,807,718 outstanding shares.
- Nominees who own shares of this fund: NONE.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
Investor Shares	Transamerica Premier Life Insurance Company (Vanguard Variable Annuity)	76.56%
	Transamerica Financial Life Insurance Company (Vanguard Variable Annuity)	5.06%

Vanguard Variable Insurance Fund—Capital Growth Portfolio (2002)

- A series of Vanguard Variable Insurance Funds.
- Advised by PRIMECAP Management Company.
- Net assets of \$1,115,135,498 and 36,229,962 outstanding shares.
- Nominees who own shares of this fund: NONE.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
Investor Shares	Transamerica Premier Life Insurance Company (Vanguard Variable Annuity)	63.52%
	Nationwide Life Insurance	6.12%

Vanguard Variable Insurance Fund—Conservative Allocation Portfolio (2011)

- A series of Vanguard Variable Insurance Funds.
- Advised by The Vanguard Group, Inc.
- Net assets of \$261,787,475 and 10,676,188 outstanding shares.
- Nominees who own shares of this fund: NONE.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
Investor Shares	Transamerica Premier Life Insurance Company (Vanguard Variable Annuity)	91.37%
	Transamerica Financial Life Insurance Company (Vanguard Variable Annuity)	7.85%

Vanguard Variable Insurance Fund—Diversified Value Portfolio (1999)

- A series of Vanguard Variable Insurance Funds.
- Advised by Barrow, Hanley, Mewhinney & Strauss, LLC.
- Net assets of \$1,127,861,882 and 72,242,624 outstanding shares.

- Nominees who own shares of this fund: NONE.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
Investor Shares	Transamerica Premier Life Insurance Company (Vanguard Variable Annuity)	38.18%
	Mutual of America	23.94%
	Voya Retirement Insurance and Annuity Company	10.26%
	Nationwide Life Insurance	7.89%

Vanguard Variable Insurance Fund—Equity Income Portfolio (1993)

- A series of Vanguard Variable Insurance Funds.
- Advised by Wellington Management Company LLP and The Vanguard Group, Inc.
- Net assets of \$1,206,630,526 and 54,932,799 outstanding shares.
- Nominees who own shares of this fund: NONE.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
Investor Shares	Transamerica Premier Life Insurance Company (Vanguard Variable Annuity)	69.55%
	Jefferson National Life Co.	5.27%

Vanguard Variable Insurance Fund—Equity Index Portfolio (1991)

- A series of Vanguard Variable Insurance Funds.
- Advised by The Vanguard Group, Inc.
- Net assets of \$4,686,688,073 and 127,526,792 outstanding shares.
- Nominees who own shares of this fund: RASKIN, over \$100,000.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
Investor Shares	Brown Brothers Harriman & Co.	33.04%
	Transamerica Premier Life Insurance Company (Vanguard Variable Annuity)	30.04%
	Transamerica Life Insurance	5.43%

Vanguard Variable Insurance Fund—Growth Portfolio (1993)

- A series of Vanguard Variable Insurance Funds.
- Advised by Jackson Square Partners, LLC; Wellington Management Company LLP; and William Blair Investment Management, LLC.
- Net assets of \$479,666,261 and 22,769,909 outstanding shares.
- Nominees who own shares of this fund: NONE.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
Investor Shares	Transamerica Premier Life Insurance Company (Vanguard Variable Annuity)	79.49%
	Transamerica Financial Life Insurance Company (Vanguard Variable Annuity)	6.61%
	Jefferson National Life Co.	5.32%

Vanguard Variable Insurance Fund—High Yield Bond Portfolio (1996)

- A series of Vanguard Variable Insurance Funds.
- Advised by Wellington Management Company LLP.
- Net assets of \$681,141,248 and 85,635,978 outstanding shares.
- Nominees who own shares of this fund: NONE.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
Investor Shares	Transamerica Premier Life Insurance Company (Vanguard Variable Annuity)	52.04%
	Nationwide Life Insurance	9.01%
	Jefferson National Life Co.	5.72%

Vanguard Variable Insurance Fund—International Portfolio (1994)

- A series of Vanguard Variable Insurance Funds.
- Advised by Baillie Gifford Overseas Ltd. and Schroder Investment Management North America Inc.
- Net assets of \$2,674,189,760 and 113,013,241 outstanding shares.
- Nominees who own shares of this fund: NONE.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
Investor Shares	Transamerica Premier Life Insurance Company (Vanguard Variable Annuity)	39.98%
	Mutual of America	18.00%
	Hartford Life Insurance	7.51%
	Nationwide Life Insurance	6.35%

Vanguard Variable Insurance Fund—Mid-Cap Index Portfolio (1999)

- A series of Vanguard Variable Insurance Funds.
- Advised by The Vanguard Group, Inc.
- Net assets of \$1,631,830,100 and 75,609,448 outstanding shares.
- Nominees who own shares of this fund: RASKIN, over \$100,000.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
Investor Shares	Transamerica Premier Life Insurance Company (Vanguard Variable Annuity)	46.15%
	Nationwide Life Insurance	11.32%

Vanguard Variable Insurance Fund—Moderate Allocation Portfolio (2011)

- A series of Vanguard Variable Insurance Funds.
- Advised by The Vanguard Group, Inc.
- Net assets of \$333,360,836 and 12,212,309 outstanding shares.
- Nominees who own shares of this fund: NONE.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
Investor Shares	Transamerica Premier Life Insurance Company (Vanguard Variable Annuity)	90.49%
	Transamerica Financial Life Insurance Company (Vanguard Variable Annuity)	8.90%

Vanguard Variable Insurance Fund—Money Market Portfolio (1991)

- A series of Vanguard Variable Insurance Funds.
- Advised by The Vanguard Group, Inc.
- Net assets of \$958,859,835 and 958,341,670 outstanding shares.
- Nominees who own shares of this fund: NONE.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
Investor Shares	Transamerica Premier Life Insurance Company (Vanguard Variable Annuity)	85.17%
	Transamerica Financial Life Insurance Company (Vanguard Variable Annuity)	6.31%

Vanguard Variable Insurance Fund—REIT Index Portfolio (1999)

- A series of Vanguard Variable Insurance Funds.
- Advised by The Vanguard Group, Inc.
- Net assets of \$1,058,248,329 and 84,036,496 outstanding shares.
- Nominees who own shares of this fund: NONE.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
Investor Shares	Transamerica Premier Life Insurance Company (Vanguard Variable Annuity)	48.94%
	Mutual of America	10.75%
	Hartford Life Insurance	5.59%

Vanguard Variable Insurance Fund—Short-Term Investment-Grade Portfolio (1999)

- A series of Vanguard Variable Insurance Funds.
- Advised by The Vanguard Group, Inc.
- Net assets of \$1,515,508,505 and 143,465,736 outstanding shares.
- Nominees who own shares of this fund: NONE.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
Investor Shares	Transamerica Premier Life Insurance Company (Vanguard Variable Annuity)	65.61%
	Jefferson National Life Co.	7.80%
	Nationwide Life Insurance	6.23%

Vanguard Variable Insurance Fund—Small Company Growth Portfolio (1996)

- A series of Vanguard Variable Insurance Funds.
- Advised by ArrowMark Colorado Holdings, LLC and The Vanguard Group, Inc.
- Net assets of \$1,504,027,124 and 69,835,942 outstanding shares.
- Nominees who own shares of this fund: NONE.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
Investor Shares	Transamerica Premier Life Insurance Company (Vanguard Variable Annuity)	48.57%
	Nationwide Life Insurance	9.42%
	AUL Group Retirement Annuity	9.09%

Vanguard Variable Insurance Fund—Total Bond Market Index Portfolio (1991)

- A series of Vanguard Variable Insurance Funds.
- Advised by The Vanguard Group, Inc.
- Net assets of \$3,059,858,084 and 260,950,968 outstanding shares.
- Nominees who own shares of this fund: NONE.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
Investor Shares	Transamerica Premier Life Insurance Company (Vanguard Variable Annuity)	48.74%
	Nationwide Life Insurance	12.50%
	Transamerica Life Insurance	5.23%

Vanguard Variable Insurance Fund—Total Stock Market Index Portfolio (2003)

- A series of Vanguard Variable Insurance Funds.
- Advised by The Vanguard Group, Inc.
- Net assets of \$1,877,880,958 and 55,027,489 outstanding shares.
- Nominees who own shares of this fund: NONE.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
Investor Shares	Transamerica Premier Life Insurance Company (Vanguard Variable Annuity)	60.33%
	American Fidelity Assurance	12.79%
	Jefferson National Life Co.	5.92%
	Nationwide Life Insurance	5.65%

Vanguard Wellesley® Income Fund (1970)

- A series of Vanguard Wellesley Income Fund.
- Advised by Wellington Management Company LLP.
- Net assets of \$52,434,864,859 and 1,142,065,862 outstanding shares.
- Nominees who own shares of this fund: HEISEN, over \$100,000; VOLANAKIS, over \$100,000.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
Investor Shares	National Financial Services, Jersey City, NJ	18.15%
	Charles Schwab & Co., Inc., San Francisco, CA	16.31%

Vanguard Wellington™ Fund (1929)

- A series of Vanguard Wellington Fund.
- Advised by Wellington Management Company LLP.
- Net assets of \$100,071,536,493 and 1,615,396,893 outstanding shares.
- Nominees who own shares of this fund: BUCKLEY, over \$100,000; HEISEN, \$10,001–\$50,000; MALPASS, over \$100,000; MCNABB, \$1–\$10,000; VOLANAKIS, over \$100,000.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
Investor Shares	Variable Annuity Life Insurance Company, Houston, TX	9.69%
	Charles Schwab & Co., Inc., San Francisco, CA	7.87%
	National Financial Services, Jersey City, NJ	7.36%

Vanguard Windsor™ Fund (1958)

- A series of Vanguard Windsor Funds.
- Advised by Pzena Investment Management, LLC and Wellington Management Company LLP.
- Net assets of \$18,487,254,586 and 417,803,710 outstanding shares.
- Nominees who own shares of this fund: BUCKLEY, over \$100,000; MCNABB, over \$100,000.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
Admiral Shares	FedEx Corporation Retirement Savings Plan 093111, Memphis, TN	8.12%
Investor Shares	Vanguard STAR Fund, Valley Forge, PA	28.87%

Vanguard Windsor™ II Fund (1985)

- A series of Vanguard Windsor Funds.
- Advised by Barrow, Hanley, Mewhinney & Strauss, LLC; Hotchkis and Wiley Capital Management, LLC; Lazard Asset Management LLC; Sanders Capital, LLC; and The Vanguard Group, Inc.
- Net assets of \$47,975,577,569 and 898,413,199 outstanding shares.
- Nominees who own shares of this fund: HEISEN, over \$100,000; LOUGHRIDGE, over \$100,000; MALPASS, over \$100,000; VOLANAKIS, over \$100,000.
- Shareholders with more than 5% record and/or beneficial ownership of the noted class of this fund's shares:

Title of Class	Name and Address of Shareholder	Percent of Class
Admiral Shares	Fidelity Investments Institutional Operations Company, Inc., Covington, KY	7.10%
Investor Shares	Vanguard STAR Fund, Valley Forge, PA	19.36%
	Variable Annuity Life Insurance Company, Houston, TX	11.97%

Exhibits to Proposal 6— Adopt the Funds’ Service Agreement for Institutional Index Fund and Institutional Total Stock Market Index Fund

Exhibit 6.1

List of funds with similar investment objectives for which Vanguard acts as investment advisor

Fund	Other Funds with Similar Investment Objectives	Rate of Compensation	Size of Other Funds as of May 31, 2017
Vanguard Institutional Index Fund	Vanguard 500 Index Fund	0.040% ¹¹	\$324,562,476,521
	Vanguard Growth Index Fund	0.050% ¹²	\$64,422,534,203
	Vanguard Value Index Fund	0.050% ¹²	\$56,145,380,817
	Vanguard Variable Insurance Fund—Equity Index Portfolio	0.150% ¹³	\$4,686,688,073
Vanguard Institutional Total Stock Market Index Fund	Vanguard Total Stock Market Index Fund	0.035% ¹²	\$574,666,131,873
	Vanguard Large-Cap Index Fund	0.050% ¹²	\$15,565,418,380
	Vanguard Variable Insurance Fund—Total Stock Market Index Portfolio	0.160% ¹³	\$1,877,880,958

Comparison of total annual operating expenses

The following examples are intended to help you compare the costs of investing in the Institutional Funds under the Institutional Management Agreements and the Service Agreement. The expense tables below compare (i) the total annual operating expenses of the Institutional Funds as reflected in their audited financial statements for the fiscal year ended December 31, 2016, (ii) *pro forma* estimates of the Institutional Funds’ total annual operating expenses assuming the Service Agreement had been in place for the fiscal year ended December 31, 2016, and (iii) the aggregate amount of fees paid under the current Institutional Agreements and the amounts that would have been paid under the proposed Service Agreement had it been in effect for the prior fiscal year.

The expense examples are intended to help you compare the costs of investing in the Institutional Funds with the cost of investing in other mutual funds. They illustrate the hypothetical expenses that you would incur over various periods if you were to invest \$10,000 in the Institutional Funds’ shares. These examples assume that the shares provide a return of 5% each year and that the total annual fund operating expenses remain as stated in the tables below. You would incur these expenses whether or not you redeem your investment at the end of the given period. All costs are based upon the information set forth in the Annual Fund Operating Expenses tables below.

Pro forma expenses should not be considered a guarantee of future expenses. If approved, each Institutional Fund’s expenses will be based on Vanguard’s costs of operation as provided in the Service Agreement.

¹¹ Reflects total annual operating expenses of Admiral Shares for the preceding fiscal year. Expense ratios are determined according to Vanguard’s costs of operation pursuant to Board approved methodologies under the Service Agreement.

¹² Reflects total annual operating expenses of Institutional Shares for the preceding fiscal year.

¹³ Reflects total annual operating expenses of the Portfolio for the preceding fiscal year.

Institutional Index Fund

Fees and Expenses

Institutional Shares

	Current	Pro Forma		
Shareholder Fees (Fees paid directly from your investment)	None	None		
Annual Fund Operating Expenses (Expenses that you pay each year as a percentage of the value of your investment)				
Management Fee	0.040%	0.035%		
12b-1 Distribution Fee	None	None		
Other Expenses	0.000%	0.000%		
Total Annual Fund Operating Expenses	0.040%	0.035%		
Hypothetical Example	1 Year	3 Years	5 Years	10 Years
Current	\$4	\$13	\$23	\$51
Pro Forma	\$4	\$11	\$20	\$45

Institutional Plus Shares

	Current	Pro Forma		
Shareholder Fees (Fees paid directly from your investment)	None	None		
Annual Fund Operating Expenses (Expenses that you pay each year as a percentage of the value of your investment)				
Management Fee	0.020%	0.020%		
12b-1 Distribution Fee	None	None		
Other Expenses	0.000%	0.000%		
Total Annual Fund Operating Expenses	0.020%	0.020%		
Hypothetical Example	1 Year	3 Years	5 Years	10 Years
Current	\$2	\$6	\$11	\$26
Pro Forma	\$2	\$6	\$11	\$26

Institutional Total Stock Market Index Fund

Fees and Expenses

Institutional Shares

	Current	Pro Forma		
Shareholder Fees (Fees paid directly from your investment)	None	None		
Annual Fund Operating Expenses (Expenses that you pay each year as a percentage of the value of your investment)				
Management Fee	0.040%	0.035%		
12b-1 Distribution Fee	None	None		
Other Expenses	0.000%	0.000%		
Total Annual Fund Operating Expenses	0.040%	0.035%		
Hypothetical Example	1 Year	3 Years	5 Years	10 Years
Current	\$4	\$13	\$23	\$51
Pro Forma	\$4	\$11	\$20	\$45

Institutional Plus Shares

	Current	Pro Forma		
Shareholder Fees (Fees paid directly from your investment)	None	None		
Annual Fund Operating Expenses (Expenses that you pay each year as a percentage of the value of your investment)				
Management Fee	0.020%	0.020%		
12b-1 Distribution Fee	None	None		
Other Expenses	0.000%	0.000%		
Total Annual Fund Operating Expenses	0.020%	0.020%		
Hypothetical Example	1 Year	3 Years	5 Years	10 Years
Current	\$2	\$6	\$11	\$26
Pro Forma	\$2	\$6	\$11	\$26

Comparison of Aggregate Compensation Under the Institutional Agreements and Proposed Service Agreement

Fund	Aggregate Amount of Compensation Under Current Institutional Agreements	Estimated Aggregate Amount of Compensation Under the Proposed Service Agreement ¹⁴	Percentage Difference
Vanguard Institutional Index Fund	\$62,464,000	\$56,954,000	8.82%
Vanguard Institutional Total Stock Market Index Fund	\$8,011,000	\$7,957,000	0.67%

¹⁴ Amounts are based on an estimate of expenses that would have been allocated to the funds based on Vanguard's costs of operation pursuant to Board-approved methodologies under the Service Agreement.

Exhibit 6.2

Fifth Amended and Restated Funds' Service Agreement

This Fifth Amended and Restated Funds' Service Agreement, made as of the 8th day of June, 2009 (the "Agreement"), between and among the investment companies registered under the Investment Company Act of 1940 ("1940 Act"), whose names are set forth on the signature page of this Agreement, which together with any additional investment companies which may become a party to this Agreement pursuant to Section 5.4 and 5.5 are collectively called the "Funds"; and The Vanguard Group, Inc., a Pennsylvania corporation ("Service Company").

Whereas, each of the Funds has heretofore determined (as evidenced by, among many documents, prior versions* of this Agreement (the "Prior Agreements"), and by prospectuses and proxy statements of the Funds related thereto): (i) to manage and perform the corporate management, administrative and share distribution functions required for its continued operation, (ii) to create a structure which enhances the independence of the Funds from the providers of external services, (iii) to share, on an equitable and fair basis, with all of the other Funds the expenses of establishing the means to accomplish these objectives at the lowest reasonable cost; and

* Funds' Service Agreement dated May 1, 1975; an Amended and Restated Funds' Service Agreement dated October 1, 1977; an Amended and Restated Funds' Service Agreement dated May 10, 1993, an Amended and Restated Funds' Service Agreement dated January 1, 1996, and an Amended and Restated Funds' Service Agreement dated June 15, 2001 as therefore amended.

Whereas, each of the Funds: (i) has heretofore determined that these objectives can best be accomplished by establishing a company: (a) to be wholly-owned by the Funds; (b) to provide corporate management, administrative, and distribution services, and upon the reasonable request of any Fund to provide other service to such Fund at cost; (c) to employ the executive, managerial, administrative, secretarial and clerical personnel necessary or appropriate to perform such services; and (d) to acquire such assets and to obtain such facilities and equipment as are necessary or appropriate to carry out such services, and to make those assets available to the Funds; and (ii) since May 1, 1975 (or the commencement of its operations after this date) has utilized Service Company, pursuant to the provisions of the Prior Agreements; and

Whereas, each of the Funds has further heretofore recognized that it may, from time to time, be in the best interests of the Funds (i) for Service Company to provide similar services to investment companies other than the Funds, (ii) for the Funds to organize, from time to time, new investment companies which are intended to become parties to this Agreement; and, (iii) for Service Company to engage in business activities (directly or through subsidiaries), supportive of the Funds' operations as investment companies; and

Whereas, each of the Funds desires to enter into a completely integrated Fifth Amended and Restated Funds' Service Agreement with the other Funds to (i) set forth the current terms and provisions of the relationships which the Funds have determined to establish; and (ii) make non-substantive amendments to the Amended and Restated Funds' Service Agreement, including correcting the names of the Funds set forth on the signature page of this Agreement.

Now, therefore, each Fund agrees with each and all of the other Funds, and with Service Company, as follows:

I. CAPITALIZATION AND ASSETS OF SERVICE COMPANY

1.1 Capital and Assets. To provide the Service Company with the cash and with the office space, facilities and equipment necessary for it to discharge its responsibilities hereunder, each Fund agrees:

A. To make cash investments in the Service Company as provided in Sections 1.2, 1.3 and 1.4.

B. To assign and transfer to Service Company on and after May 1, 1975 any and all right, title and interest which the Funds may have in any office facilities and equipment necessary for it to discharge its responsibilities and in any other assets which Service Company may develop or acquire, subject only to the rights reserved in Section 1.6 (concerning certain major assets). Section 5.2 (concerning rights upon withdrawal) and Section 5.3 (concerning rights upon termination) of the Agreement.

1.2 Cash Investments in Service Company. To provide Service Company with such cash as may be necessary or appropriate from time to time to accomplish the purposes of the Funds and to discharge its responsibilities hereunder, each Fund agrees to purchase, for cash, shares of common stock of Service Company ("Shares") or such other securities of Service Company (hereafter referred to as "other securities") upon the favorable vote of the holders of a majority of the Shares adopting a resolution setting forth the terms and provisions of the purchase. Provided, however, that:

A. Without the consent of all of the Funds, the date for the purchase of Shares or other securities shall not be less than 15 days following the date on which the resolution is approved by the shareholders.

B. The cash purchase price to be paid by any Fund for the Shares or other securities, expressed as a percentage of the total purchase price for the additional securities to be paid by all of the Funds shall not exceed the percentage which the then current net assets of the Fund bears to the aggregate current net assets of all of the Funds as of the most recent month-end preceding the purchase date.

1.3 Periodic Adjustments of Cash Investments. To maintain and re-establish periodically a fair and proportionate ratio of cash investments by each Fund in the Service Company as compared to its then current net assets, each Fund agrees to purchase from one or more of the other Funds, or to sell one or more of the Funds, sufficient Shares or other securities to re-establish the ratio.

A. Such purchases and sales shall be made (1) as of the last business day of any month upon the addition or withdrawal of any Fund as a party to this Agreement, provided that if the addition or withdrawal of a Fund creates no material disparity in the ratios (as determined by the Service Company's Board of Directors), and no Fund requests that an adjustment be made, the adjustment may be deferred until the close of the Service Company's fiscal year; (2) in connection with additional investments pursuant to Section 1.2; and (3) annually as of the close of the Service Company's fiscal year, on a date fixed by Service Company's Board of Directors within 90 days after the close of the fiscal year unless there is no material disparity in the ratios (as determined by the Service Company's Board of Directors) and no Fund requests that an adjustment be made.

B. The cash purchases and sale price of the Share or other securities shall be for each Fund (1) in the case of Shares, the fair market value of Shares determined in accord with generally accepted accounting principles and procedures established by the Board of Directors of

Service Company; and (2) in the case of debt securities, the face value thereof.

C. Unless specifically required by applicable law, the issuance and transfer of Shares or other securities of Service Company, and the cash investments of the Funds in Service Company, may be evidenced by proper records of Service Company; and no certificates need be issued.

1.4 Limitation Upon Funds' Obligations to Make Cash Investments or Purchases. Notwithstanding the provisions of Sections 1.1, 1.2 and 1.3 above, no Fund shall be obligated to purchase Shares or other securities of Service Company if, as a result of such purchase the Fund would thereby have invested in cash a total of more than 0.40% of its then current net assets in Shares or other securities of Service Company.

1.5 Restrictions on Transfer of Shares or Other Securities. Each Fund agrees that it will not, without the written consent of all other parties to this Agreement, transfer or dispose of or encumber any of its Shares or other securities of Service Company except as provided in this Agreement, and that, if issued, each certificate for Shares or other securities of Service Company will be stamped with a legend referring to this restriction.

1.6 Assets of Service Company. The Funds agree that Service Company may acquire, by purchase or lease, office space, furniture, equipment, supplies, files, records, computer hardware and software, and other assets necessary or appropriate for the discharge of the Service Company's responsibilities hereunder. Each of the Funds hereby assigns and transfers to Service Company, any and all right, title and interest that it may have or hereafter acquire in any such assets, subject to the rights of each Fund (A) to receive the then fair value of such assets upon the purchase or sale of Shares pursuant to this Agreement, (B) to the continued use of such assets in the administration of the business affairs of a Fund so long as the Fund remains a party to this Agreement.

1.7 Borrowing by Service Company. The Funds agree that Service Company may borrow money, and may issue a note or other security in connection with such borrowing, as long as such borrowing, is in connection with the discharge of Service Company's responsibilities hereunder and is undertaken in accord with procedures approved by the Service Company's Board of Directors.

II. SERVICES TO BE OBTAINED INDEPENDENTLY BY EACH FUND

2.1 Services and Expenses. Each Fund shall, at its own expense, obtain from Service Company or an outside vendor (as that Fund's Board of Trustees shall determine):

- A. Services of an independent public accountant.
- B. Services of outside legal counsel.
- C. Transfer agency services, including "shareholder services."
- D. Custodian, registrar and dividend disbursing services.
- E. Brokerage fees, commissions and transfer taxes in connection with the purchase and sale of securities for its investment portfolio.
- F. Investment advisory services.
- G. Taxes and other fees applicable to its operations.
- H. Costs incident to its annual or special meetings of shareholders, including but not limited to legal and accounting fees, and the preparations, printing and mailing of proxy materials.
- I. Trustees' fees.
- J. Costs incurred in the continued maintenance of its corporate existence, including reports to shareholders and government agencies, and the expenses, if any, attributable to the registration of the Fund's shares with Federal and state regulatory authorities.
- K. And, in general and except as provided in Section 3.2(B), any other costs directly attributable to and identified with a particular Fund or Funds rather than all Funds which are parties to this Agreement.

2.2 Disbursement of Payment for These Services. Notwithstanding the provisions of Section 2.1 above, Service Company may, as agent for any Fund, disburse to third parties payments for any of the foregoing services or expenses. Each Fund shall reimburse Service Company promptly for such disbursements made on behalf of the Fund.

III. SERVICES PROVIDED BY AND EXPENSES OF SERVICE COMPANY

3.1 Services to be Provided to Funds. Service Company shall with respect to each Fund, subject to the direction and control of the Board of Trustees and officers of the Fund:

- A. Manage, administer and/or conduct the general business activities of the Fund.

B. Provide the personnel and obtain the office space, facilities and equipment necessary to perform such general business activities under the direction of the Funds' executive officers (who may also be officers of Service Company) who will have the full responsibility for the general management of these functions.

C. Establish wholly-owned subsidiaries, and supervise the management and operations of such subsidiaries, as are necessary or appropriate to carry on or support the business activities of the Fund; and authorize such subsidiaries to perform such other functions for the Fund, including organizing new investment companies which are intended to become parties to this Agreement pursuant to Section 5.4 or Section 5.5, as Service Company's Board of Directors shall determine.

No provisions hereof shall prohibit the Service Company from performing such additional services to the Fund as the Fund's Board of Trustees may appropriately request and which two-thirds of the shareholders of the Service Company shall approve.

3.2 Expenses of Operation of Service Company. Each of the Funds agrees to pay to the Service Company, within 10 days after the last business day of each month or at such other time as agreed to by the Fund and the Service Company, the Fund's portion of the actual costs of operation of Service Company for each monthly period, or for such other period as is agreed upon, during which the Fund is a party to this Agreement.

A. Corporate Management and Administrative Expenses. A Fund's portion of the cost of operation of Service Company shall mean its share of the direct and indirect expenses of Service Company's providing corporate management and administrative services, including distribution services of an administrative nature, as allocated among the Funds with Allocation of indirect costs based on one or more of the following methods of allocation:

- (1) Net Assets: The proportionate allocation of expenses based upon the value of each Fund's net assets, computed as a percentage of the value of total net assets of all Funds receiving services from Service Company, determined at the end of the last preceding monthly period.
- (2) Personnel Time: The proportionate allocation of expenses based upon a summary by each Fund of the time spent by each employee who works directly on the affairs of one or more of the Funds, computed as a percentage of the total time spent by such employee on the affairs of all of the Funds.
- (3) Shareholder Accounts: The proportionate allocation of expenses based upon the number of each Fund's shareholder accounts and

transaction activity in those accounts, measured over a period of time, relative to the total number of shareholder accounts and transaction activity in those accounts for all Funds receiving number of portfolio transactions for all Funds receiving services from the Service Company during such period.

(4) Such other methods of allocation as may be approved by the Board of Directors of the Service Company based upon its determination that the allocation method is fair to each Fund in view of (i) the nature, amount and purpose of the expenditure, (ii) the benefits, if any, to be derived directly by each Fund relative to the benefits derived by other Funds, (iii) the need or desirability for the Funds as a group to provide competitive investment programs and services at competitive prices for the group to survive and grow, (iv) the benefits which each Fund derives by being a member of a strong Fund group, and (v) such other factors as the Board considers relevant to the specific expenditure and allocation.

B. Distribution Expenses. Each of the Funds expressly agrees to pay to Service Company, as requested, the Fund's portion of the actual cost of distributing shares of the Funds, which shall mean its share of all of the direct and indirect expenses of a marketing and promotional nature including, but not limited to, advertising, sales literature, and sales personnel, as well as expenditures on behalf of any newly organized registered investment company which is to become a party of this Agreement pursuant to Section 5.4. The cost of distributing shares of the Funds shall not include distribution-related expenses of an administrative nature, which shall be allocated among the Funds pursuant to Section 3.2(A). Distribution expenses of a marketing and promotional nature shall be allocated among the Funds in the manner approved by the Securities and Exchange Commission in Investment Company Act Release No. 11645 (Feb. 25, 1981):

(1) 50% of these expenses will be allocated based upon each Fund's average month-end assets during the preceding quarter relative to the average month-end assets during the preceding quarter of the Funds as a group.

(2) 50% of these expenses will be allocated initially among the Funds based upon each Fund's sales for the 24 months ended with the last day of the preceding quarter relative to the sales of the Funds as a group for the same period. (Shares issued pursuant to a reorganization shall be excluded from the sales of a Fund and the Funds as a group.)

(3) Provided, however, that no Fund's aggregate quarterly contribution for distribution expenses, expressed as a percentage of its assets,

shall exceed 125% of the average expenses for the Funds as a Group, expressed as a percentage of the total assets of the Funds. Expenses not charged to a particular Fund(s) because of this 125% limitation shall be reallocated to other Funds on iterative basis; and that no Fund's annual expenses for distribution shall exceed 0.2% of its average month-end net assets.

IV. CONCERNING THE SERVICE COMPANY

4.1 Name. Each Fund acknowledge and agrees:

A. That the name "The Vanguard Group, Inc.", and any variants thereof used to identify (1) the Funds as a group, (2) any Fund as a member of a group being served by Service Company, or (3) any other person as being served or related to Service Company (whether now in existence or hereafter created), shall be the sole and exclusive property of Service Company, its affiliates, and its successors.

B. That Service Company shall have the sole and exclusive right to permit the use of said name or variants thereof so long as this Agreement or any amendments thereto are effective.

C. That upon its withdrawal from this Agreement and upon the written request of Service Company, the Fund shall cease to use, or in any way to refer to itself as related to, "The Vanguard Group, Inc." or any variant thereof.

D. The foregoing agreements on the part of each Fund are hereby made binding upon it, its trustees, officers, shareholders and creditors and all other persons claiming under or through it.

4.2 Services to Others. The Service Company may render services to any person other than the Funds so long as:

A. The services to be rendered to the Funds hereunder are not impaired thereby.

B. The terms and provisions upon which the services are to be rendered have been approved by the holders of a majority of the Shares.

C. The services rendered for compensation and, to the extent achievable, for the purpose of gaining a profit thereon.

D. Any income earned and fees received by Service Company shall be used to reduce the total costs and expenses of Service Company.

4.3 Books, Records, and Audits of Service Company. The Service Company, and any subsidiary established pursuant to Section 3.1(C), shall maintain

complete, accurate, and current books, records, and financial statements concerning its activities. To the extent appropriate, it will preserve said records in the manner and for the periods prescribed by law. Financial records and statements shall be kept in accord with generally accepted accounting principles and shall be audited at least annually by independent public accountants (who may also be accountants for any of the Funds). Within 120 days after the close of Service Company's fiscal year, it shall deliver to each Fund a copy of its audited financial statements for that year and the accountants report thereon. Service Company, on behalf of itself and any subsidiary, acknowledges that all of the records they shall prepare and maintain pursuant to this Agreement shall be the property of the Funds and that upon a request of any Fund they shall make the Fund's records available to it, along with such other information and data as are reasonably requested by the Fund, for inspection, audit or copying, or turn said records over to the Fund.

4.4 Indemnification.

A. Each Fund (herein the "Indemnitor") agrees to indemnify, hold harmless, and reimburse (herein "indemnify") every other Fund, Service Company and/or any subsidiary of Service Company (herein the "Indemnitee"):

(1) which Indemnitee (a) was or is a party to, or is threatened to be made a party to, any threatened, pending, or completed action, suit, or proceeding, whether civil, criminal, administrative, or investigative (herein a "suit"), or (b) incurs an actual economic loss or expense (herein a "loss").

(2) if: (a) such suit or loss arises from an action or failure to act, event, occurrence, transaction, or other analogous happening (herein an "event") under circumstances in which the Indemnitee is involved in a suit or incurs a loss.

(i) as a result substantially of, or attributable primarily to, its being a party to this Agreement, or to its indirect participation in transactions contemplated by this Agreement; and

(ii) where the suit or loss arises primarily and substantially from an event related primarily and substantially to the business and/or operations of the Indemnitor; and

(b) an independent third party, who may but need not be legal counsel for the Funds, advises the Funds in writing (i) that the condition set forth in "(1)" and "(2)(a)" have occurred and (ii) that the Indemnitee is without significant fault or responsibility for the suit or loss as measured by the comparative conduct of the

Indemnitor and Indemnitee and by the purposes sought to be accomplished by this Agreement.

B. The financial obligations of the Indemnitor under this Section shall be limited to:

(1) In the case of a suit, to expenses (including attorneys' fees), actually incurred by the Indemnitee. The termination of any suit by judgment, order, settlement, or upon a plea of nolo contendere or its equivalent, shall not, of itself, create a presumption that the Indemnitee is not entitled to be indemnified hereunder.

(2) In the case of an event, to losses and/or expenses (including attorney's fees) actually incurred by the Indemnitee.

The Indemnitee shall not be liable financially hereunder for lost profits in the case of either a suit or loss.

C. Expenses incurred in defending a suit or resolving an event may be paid by the prospective Indemnitor in advance of the final disposition of such suit or event if authorized by the Board of Trustees of the prospective Indemnitor in the specific case upon receipt of an undertaking by or on behalf of the prospective indemnitee to repay such amount unless it shall ultimately be determined that the Indemnitee is entitled to be indemnified by the Indemnitor as provided in this Section.

D. The indemnification provided by this section shall not be deemed exclusive of any other rights to which the Indemnitee may be entitled under any agreement or otherwise.

V. TERM OF AGREEMENT

5.1 Effective Period. This Agreement shall become effective on the date first written above, and shall continue in full force and effect as to all parties hereto until terminated or amended by mutual agreement of all parties hereto. The withdrawal pursuant to Section 5.2(A) or 5.2(B) of one or more of the Funds from this agreement shall not affect the continuance of this Agreement except as to the parties withdrawing.

5.2 Withdrawal from Agreement.

A. Any Fund may elect to withdraw from this Agreement effective at the end of any monthly period by giving at least 90 days' prior written notice to each of the parties to this Agreement. Upon the written demand of all other Funds which are parties to this Agreement a Fund shall withdraw, and in the event of its failure to do so shall be deemed to have withdrawn, from this Agreement; such demand shall specify the date of withdrawal

which shall be at the end of any monthly period at least 90 days from the time of service of such demand.

B. In the event of the withdrawal of any Fund from this Agreement, all its rights and obligations, except for lease commitments, under this Agreement (except such rights or obligations as have accrued prior to the date of withdrawal) shall terminate as of the date of the withdrawal. The withdrawing Fund shall surrender its Shares to Service Company, and (1) shall be entitled to receive from Service Company an amount equal to the excess of the fair value of (i) its Shares of other securities Service Company as of the date of its withdrawal less (ii) its proportionate interest in any liabilities of Service Company, including when appropriate any commitments of Service Company and unexpired leases at the date of withdrawal; (2) shall be obligated to pay Service Company an amount equal to the excess of (ii) over (i). Such amount to be received from or paid to Service Company shall be determined by the favorable vote of the holders of a majority of the Shares whose determination shall be conclusive upon the Funds. Any amount found payable by the Service Company to the withdrawing Fund shall be recoverable by Service Company from the Funds remaining under this Agreement in accordance with the provisions of Section 1.2, 1.3 and 1.4 hereof.

5.3 Termination by Mutual Consent. In the event that all Funds withdraw from this Agreement without entering into a comparable successor agreement, each Fund shall surrender its Shares to Service Company and after payment by Service Company of all its liabilities, including the settlement of unexpired lease obligations, shall:

A. Receive from Service Company in cash an amount equal to its proportionate share of the actual value of all assets of the Service Company which can be reduced readily to cash.

B. Negotiate in good faith with the other Funds provision for the equitable use and/or disposition of assets of the Service Company which are not readily reducible to cash.

5.4 Additional Parties to Agreement. Upon the favorable vote of two-thirds of the shareholders and of the holders of two-thirds of the Shares of the Service Company, any investment company registered under the Investment Company Act of 1940 may become a party to this Agreement and share as a Fund in all of the rights, duties and liabilities hereunder by adopting, executing and delivering to the Service Company and the Funds a signed copy of this Agreement which shall evidence that investment company's agreement to assume the duties and obligations of a Fund hereunder. Upon the delivery of a signed copy of this Agreement, the new Fund shall be subject to all

provisions of this Agreement and become a holder of Shares by adjustment in cash investments among the Funds pursuant to Section 1.3. No person shall become a holder of shares without becoming a party to this Agreement.

5.5 Fund of Funds Parties to Agreement. A "Fund of Funds" shall mean a registered investment company or series of a Fund which is managed and administered by Service Company and which invests substantially all of its assets in shares of two or more Funds (or series thereof).

A. Upon the favorable vote of two-thirds of the shareholders and of the holders of two-thirds of the Shares of the Service Company, a Fund of Funds organized as a separate registered investment company may become a party to this Agreement and share as a Fund in all of the rights, duties and liabilities hereunder by adopting, executing and delivering to the Service Company and the Funds a signed copy of this Agreement which shall evidence that investment company's agreement to assume the duties and obligations of a Fund hereunder, except as provided in the following paragraph B.

B. A Fund of Funds: (1) shall not be obligated or permitted to make a capital contribution or to acquire Shares pursuant to Section I except to the extent that the Fund of Funds' assets are not invested in shares of the Funds; (2) shall not be allocated or obligated to pay any portion of the expenses of Service Company pursuant to Section 3.2 except as determined by the Board of Directors of Service Company pursuant to Section 3.2(A)(4); and (3) may have the expenses the Fund of Funds would otherwise bear pursuant to Section 2.1 reduced or eliminated by the savings which accrue to the benefit of the Funds.

C. Upon the delivery of a signed copy of this Agreement, the Fund of Funds shall be subject to all the provisions of this Agreement except as provided herein.

VI. GENERAL

6.1 Definition of Certain Terms. As used in this Agreement, the terms set forth below shall mean:

A. "Fair Value of Shares" shall mean the proportionate interest, as represented by the ratio of the number of Shares owned by a Fund to the number of Shares issued and outstanding, in all assets of the Service Company less all liabilities of the Service Company on the date fair value is to be determined. Assets shall be valued at fair market value. In case of any dispute as to the proportionate interest of any Fund or as to the fair value of the Shares, the issue shall be determined by the favorable

vote of the holders of a majority of the Shares, whose determination shall be conclusive upon the Fund.

B. "Person" shall mean a natural person, a corporation, a partnership, an association, a joint-stock company, a trust, a fund or any organized group of persons whether incorporated or not.

6.2 Assignment. This Agreement shall bind and inure to the benefit of the parties thereto, their respective successors and assigns.

6.3 Captions. The captions in this Agreement are included for convenience of reference only and in no way define any of the provisions hereof or otherwise affect their construction or effect.

6.4 Amendment. Unless prohibited by applicable laws, regulations or orders of regulatory authorities and except as set forth below, this Agreement may be amended at any time and in one or more respects upon the favorable vote of the holders of a majority of the Shares (except that the vote required in Sections 3.1 and 5.4 may be amended only by the favorable votes of the number of holders or Shares specified therein) and without the further approval or vote of shareholders of any of the Funds; provided, however, that Section 1.4 (limiting cash investments by the Funds in Service Company) may not be amended unless and exemptive order permitting such amendment is obtained from the U.S. Securities and Exchange Commission.

6.5 Severability. If any provision of this Agreement shall be held or made invalid by a court decision, statute, rule or otherwise, the remainder of this Agreement shall not be affected thereby.

In Witness Whereof, each of the parties hereto has caused the Agreement to be signed and its corporate seal to be hereto affixed by its proper officers thereunto duly authorized, all as of the date and year first above written.

The Vanguard Group, Inc.

Attest: /s/ Heidi Stam

Heidi Stam
Secretary

BY: /s/ F. William McNabb III

F. William McNabb III
President and
Chief Executive Officer

The Vanguard Group of Investment Companies:

Vanguard Admiral Funds	Vanguard Bond Index Funds
Vanguard California Tax-Free Funds	Vanguard Charlotte Funds
Vanguard Chester Funds	Vanguard Convertible Securities Fund
Vanguard Explorer Fund	Vanguard Fenway Funds
Vanguard Fixed Income Securities Funds	Vanguard Florida Tax-Free Funds
Vanguard Horizon Funds	Vanguard Index Funds
Vanguard International Equity Index Funds	Vanguard Malvern Funds
Vanguard Massachusetts Tax-Exempt Funds	Vanguard Money Market Reserves
Vanguard Montgomery Funds	Vanguard Morgan Growth Fund
Vanguard Municipal Bond Funds	Vanguard New Jersey Tax-Free Funds
Vanguard New York Tax-Free Funds	Vanguard Ohio Tax-Free Funds
Vanguard Pennsylvania Tax-Free Funds	Vanguard Quantitative Funds
Vanguard Scottsdale Funds ¹⁵	Vanguard Specialized Funds
Vanguard STAR Funds	Vanguard Tax-Managed Funds
Vanguard Trustees' Equity Fund	Vanguard Valley Forge Funds
Vanguard Variable Insurance Funds	Vanguard Wellesley Income Fund
Vanguard Wellington Fund	Vanguard Whitehall Funds
Vanguard Windsor Funds	Vanguard World Fund

Attest: /s/ Heidi Stam

Heidi Stam
Secretary

BY: /s/ F. William McNabb III

F. William McNabb III
President and
Chief Executive Officer

Signature page revised as of September 26, 2011.

Exhibit 6.3

Ownership of The Vanguard Group, Inc.

Each Vanguard fund that owns 10% or more of The Vanguard Group, Inc., as of May 31, 2017, is set forth below:

Fund	Percentage Owned
Vanguard Total Stock Market Index Fund	15.07%

Exhibit 6.4

Advisory, distribution, and administrative fees paid to Vanguard and its affiliates under the Institutional Management Agreements

Fund	Date of Institutional Management Agreements	Aggregate Amount of Advisory Fee ¹⁶	Aggregate Amount of Any Other Material Payments to Vanguard or its Affiliates	Date Agreement Last Submitted to Shareholders	Purpose of Submission to Shareholders
Vanguard Institutional Index Fund	March 31, 2004	\$62,464,000	N/A	June 15, 1990	Approval by Initial Sole Shareholder
Vanguard Institutional Total Stock Market Index Fund	March 31, 2004	\$8,011,000	N/A	May 25, 2001	Approval by Initial Sole Shareholder

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16 Reflects aggregate amounts paid to Vanguard under the Institutional Management Agreements

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