

**Annual Report** | December 31, 2022

# Vanguard Variable Insurance Funds

Mid-Cap Index Portfolio

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Please note: The opinions expressed in this report are just that—informed opinions. They should not be considered promises or advice. Also, please keep in mind that the information and opinions cover the period through the date on the front of this report. Of course, the risks of investing in your portfolio are spelled out in the prospectus.

## Your Portfolio's Performance at a Glance

- Despite some relief in midsummer and late fall, the 12 months ended December 31, 2022, were a volatile, challenging period for financial markets. The Mid-Cap Index Portfolio returned -18.82%, in line with its benchmark index after factoring in the portfolio's expenses.
- Overall, the economic backdrop deteriorated as inflation soared to multidecade highs, driven by government spending during the pandemic as well as higher energy and food prices in the wake of Russia's invasion of Ukraine. That prompted aggressive tightening by many central banks to bring inflation in check, which increased fears of recession.
- Technology and consumer discretionary contributed most to the portfolio's negative performance, while energy performed strongly.
- For the 10 years ended December 31, 2022, the portfolio's average annual return was 10.95%, in line with its benchmark.
- Please note that the portfolio's returns are different from those in Vanguard Variable Annuity (and other plans that invest in the portfolio), which take into account insurance-related expenses.

### Market Barometer

	Average Annual Total Returns Periods Ended December 31, 2022		
	One Year	Three Years	Five Years
<b>Stocks</b>			
Russell 1000 Index (Large-caps)	-19.13%	7.35%	9.13%
Russell 2000 Index (Small-caps)	-20.44	3.10	4.13
Russell 3000 Index (Broad U.S. market)	-19.21	7.07	8.79
FTSE All-World ex US Index (International)	-15.49	0.61	1.28
<b>Bonds</b>			
Bloomberg U.S. Aggregate Float Adjusted Index (Broad taxable market)	-13.07%	-2.67%	0.06%
Bloomberg Municipal Bond Index (Broad tax-exempt market)	-8.53	-0.77	1.25
FTSE Three-Month U.S. Treasury Bill Index	1.50	0.70	1.24
<b>CPI</b>			
Consumer Price Index	6.45%	4.92%	3.78%

## About Your Portfolio's Expenses

As a shareholder of the portfolio, you incur ongoing costs, which include costs for portfolio management, administrative services, and shareholder reports (like this one), among others. Operating expenses, which are deducted from a portfolio's gross income, directly reduce the investment return of the portfolio.

A portfolio's expenses are expressed as a percentage of its average net assets. This figure is known as the expense ratio. The following examples are intended to help you understand the ongoing costs (in dollars) of investing in your portfolio and to compare these costs with those of other mutual funds. The examples are based on an investment of \$1,000 made at the beginning of the period shown and held for the entire period.

The accompanying table illustrates your portfolio's costs in two ways:

- **Based on actual portfolio return.** This section helps you to estimate the actual expenses that you paid over the period. The "Ending Account Value" shown is derived from the portfolio's actual return, and the third column shows the dollar amount that would have been paid by an investor who started with \$1,000 in the portfolio. You may use the information here, together with the amount you invested, to estimate the expenses that you paid over the period.

To do so, simply divide your account value by \$1,000 (for example, an \$8,600 account value divided by \$1,000 = 8.6), then multiply the result by the number given for your portfolio under the heading "Expenses Paid During Period."

- **Based on hypothetical 5% yearly return.** This section is intended to help you compare your portfolio's costs with those of other mutual funds. It assumes that the portfolio had a yearly return of 5% before expenses, but that the expense ratio is unchanged. In this case—because the return used is not the portfolio's actual return—the results do not apply to your investment. The example is useful in making comparisons because the Securities and Exchange Commission requires all mutual funds to calculate expenses based on a 5% return. You can assess your portfolio's costs by comparing this hypothetical example with the hypothetical examples that appear in shareholder reports of other funds.

Note that the expenses shown in the table are meant to highlight and help you compare *ongoing* costs only and do not reflect transaction costs incurred by the portfolio for buying and selling securities. The portfolio's expense ratio does not reflect additional fees and expenses associated with the annuity or life insurance program through which you invest.

The calculations assume no shares were bought or sold during the period. Your actual costs may have been higher or lower, depending on the amount of your investment and the timing of any purchases or redemptions.

You can find more information about the portfolio's expenses, including annual expense ratios, in the Financial Statements section of this report. For additional information on operating expenses and other shareholder costs, please refer to your portfolio's current prospectus.

### Six Months Ended December 31, 2022

Mid-Cap Index Portfolio	Beginning Account Value 6/30/2022	Ending Account Value 12/31/2022	Expenses Paid During Period
Based on Actual Portfolio Return	\$1,000.00	\$1,044.50	\$0.88
Based on Hypothetical 5% Yearly Return	1,000.00	1,024.35	0.87

The calculations are based on expenses incurred in the most recent six-month period. The portfolio's annualized six-month expense ratio for that period is 0.17%. The dollar amounts shown as "Expenses Paid" are equal to the annualized expense ratio multiplied by the average account value over the period, multiplied by the number of days in the most recent six-month period, then divided by the number of days in the most recent 12-month period (184/365).

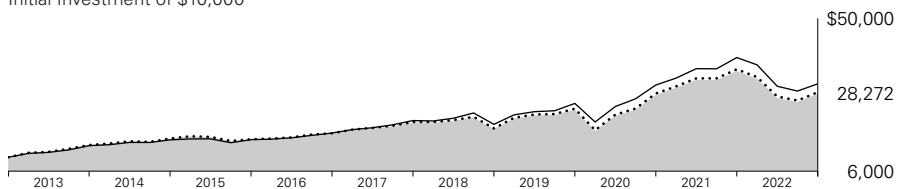
# Mid-Cap Index Portfolio

## Performance Summary

All of the returns in this report represent past performance, which is not a guarantee of future results that may be achieved by the portfolio. (Current performance may be lower or higher than the performance data cited. For performance data current to the most recent month-end, visit our website at [vanguard.com/performance](http://vanguard.com/performance).) Note, too, that both investment returns and principal value can fluctuate widely, so an investor's shares, when sold, could be worth more or less than their original cost. The returns shown do not reflect taxes that a shareholder would pay on portfolio distributions or on the sale of portfolio shares. Nor do the returns reflect fees and expenses associated with the annuity or life insurance program through which a shareholder invests. If these fees and expenses were included, the portfolio's returns would be lower.

### Cumulative Performance: December 31, 2012, Through December 31, 2022

Initial Investment of \$10,000



Average Annual Total Returns  
Periods Ended December 31, 2022

	One Year	Five Years	Ten Years	Final Value of a \$10,000 Investment
Mid-Cap Index Portfolio	-18.82%	7.18%	10.95%	\$28,272
Spliced Mid-Cap Index	-18.68	7.34	11.13	28,728
Dow Jones U.S. Total Stock Market Float Adjusted Index	-19.53	8.65	12.03	31,151

Spliced Mid-Cap Index: MSCI US Mid Cap 450 Index through January 30, 2013; CRSP US Mid Cap Index thereafter.

## Portfolio Allocation

As of December 31, 2022

Basic Materials	4.0%
Consumer Discretionary	13.0
Consumer Staples	5.0
Energy	6.7
Financials	13.1
Health Care	11.0
Industrials	15.6
Real Estate	9.0
Technology	13.1
Telecommunications	1.7
Utilities	7.8

The table reflects the portfolio's investments, except for short-term investments and derivatives. Sector categories are based on the Industry Classification Benchmark ("ICB"), except for the "Other" category (if applicable), which includes securities that have not been provided an ICB classification as of the effective reporting period.

The portfolio may invest in derivatives (such as futures and swap contracts) for various reasons, including, but not limited to, attempting to remain fully invested and tracking its target index as closely as possible.



Mid-Cap Index Portfolio

	Shares	Market Value* (\$000)		Shares	Market Value* (\$000)
<b>Financials (13.1%)</b>					
Arthur J Gallagher & Co.	80,100	15,102	Cooper Cos. Inc.	18,707	6,186
MSCI Inc. Class A	28,829	13,410	* Align Technology Inc.	28,200	5,947
Ameriprise Financial Inc.	40,392	12,577	* Incyte Corp.	71,881	5,773
State Street Corp.	132,509	10,279	Royalty Pharma plc Class A	142,504	5,632
Discover Financial Services	103,842	10,159	* Avantor Inc.	243,400	5,133
Willis Towers Watson plc	41,167	10,069	Viartis Inc.	460,857	5,129
M&T Bank Corp.	65,586	9,514	Baxter International Inc.	95,800	4,883
T. Rowe Price Group Inc.	84,900	9,259	Teleflex Inc.	17,818	4,448
Hartford Financial Services Group Inc.	120,912	9,169	* Henry Schein Inc.	51,490	4,113
Nasdaq Inc.	149,378	9,164	* Bio-Rad Laboratories Inc. Class A	7,953	3,344
American International Group Inc.	141,200	8,929	* Catalent Inc.	65,000	2,926
Fifth Third Bancorp	260,766	8,556	* Charles River Laboratories International Inc.	9,700	2,114
First Republic Bank	69,530	8,475	Universal Health Services Inc. Class B	11,563	1,629
* Arch Capital Group Ltd.	133,448	8,378	* DaVita Inc.	9,528	711
Apollo Global Management Inc.	130,499	8,324			<b>243,280</b>
Raymond James Financial Inc.	73,587	7,863	<b>Industrials (15.5%)</b>		
Principal Financial Group Inc.	92,964	7,801	Cintas Corp.	32,781	14,805
Huntington Bancshares Inc.	548,133	7,729	Carrier Global Corp.	317,699	13,105
Regions Financial Corp.	354,993	7,654	TransDigm Group Inc.	19,592	12,336
Citizens Financial Group Inc.	187,150	7,368	* Mettler-Toledo International Inc.	8,456	12,223
Northern Trust Corp.	75,262	6,660	AMETEK Inc.	87,310	12,199
* Markel Corp.	4,854	6,395	PACCAR Inc.	118,973	11,775
KeyCorp	354,536	6,176	* Keysight Technologies Inc.	67,820	11,602
Cincinnati Financial Corp.	59,704	6,113	Rockwell Automation Inc.	43,619	11,235
Broadridge Financial Solutions Inc.	44,680	5,993	Old Dominion Freight Line Inc.	37,744	10,711
FactSet Research Systems Inc.	14,483	5,811	Verisk Analytics Inc. Class A	59,421	10,483
W R Berkley Corp.	75,634	5,489	Ferguson plc	79,700	10,119
* SVB Financial Group	22,467	5,171	WW Grainger Inc.	17,263	9,603
Cboe Global Markets Inc.	40,270	5,053	United Rentals Inc.	26,378	9,375
Everest Re Group Ltd.	14,924	4,944	Equifax Inc.	46,521	9,042
Loews Corp.	76,633	4,470	Fortive Corp.	134,411	8,636
Ares Management Corp. Class A	59,300	4,058	Vulcan Materials Co.	47,980	8,402
Equitable Holdings Inc.	140,613	4,036	Ingersoll Rand Inc.	153,812	8,037
MarketAxess Holdings Inc.	13,570	3,784	Martin Marietta Materials Inc.	23,549	7,959
Annaly Capital Management Inc.	177,829	3,749	Quanta Services Inc.	54,300	7,738
Fidelity National Financial Inc.	98,244	3,696	* Waters Corp.	22,528	7,718
LPL Financial Holdings Inc.	14,344	3,101	Xylem Inc.	68,468	7,570
Franklin Resources Inc.	113,947	3,006	Dover Corp.	53,343	7,223
Tradeweb Markets Inc. Class A	42,200	2,740	* Teledyne Technologies Inc.	17,800	7,118
Interactive Brokers Group Inc. Class A	37,150	2,688	Westinghouse Air Brake Technologies Corp.	65,655	6,553
Brown & Brown Inc.	43,100	2,455	Expeditors International of Washington Inc.	60,437	6,281
Globe Life Inc.	16,607	2,002	Otis Worldwide Corp.	79,196	6,202
*.1 Coinbase Global Inc. Class A	54,400	1,925	Ball Corp.	119,342	6,103
Ally Financial Inc.	51,108	1,250	Jacobs Solutions Inc.	47,975	5,760
Corebridge Financial Inc.	24,554	492	Synchrony Financial	171,219	5,626
1 Rocket Cos. Inc. Class A	46,500	325	Textron Inc.	79,318	5,616
		<b>291,361</b>	JB Hunt Transport Services Inc.	31,432	5,480
<b>Health Care (10.9%)</b>			Global Payments Inc.	51,400	5,105
* Centene Corp.	215,160	17,645	* Zebra Technologies Corp. Class A	19,660	5,041
* Dexcom Inc.	146,757	16,619	* FleetCor Technologies Inc.	26,657	4,896
* IQVIA Holdings Inc.	70,573	14,460	* Trimble Inc.	93,704	4,738
ResMed Inc.	55,638	11,580	Snap-on Inc.	20,157	4,606
* Alnylam Pharmaceuticals Inc.	46,733	11,106	Packaging Corp. of America	35,199	4,502
Zimmer Biomet Holdings Inc.	79,726	10,165	Stanley Black & Decker Inc.	58,039	4,360
* Horizon Therapeutics plc	86,100	9,798	TransUnion	73,203	4,154
* Veeva Systems Inc. Class A	53,405	8,619	* Bill.com Holdings Inc.	38,100	4,151
Laboratory Corp. of America Holdings	33,692	7,934	CH Robinson Worldwide Inc.	44,690	4,092
* Insulet Corp.	26,400	7,772	Masco Corp.	85,652	3,997
Cardinal Health Inc.	99,623	7,658	Crown Holdings Inc.	45,563	3,746
* Molina Healthcare Inc.	22,229	7,340	Westrock Co.	96,703	3,400
* BioMarin Pharmaceutical Inc.	70,614	7,308	HEICO Corp. Class A	27,899	3,344
STERIS plc	37,900	7,000	Jack Henry & Associates Inc.	13,916	2,443
* Hologic Inc.	93,389	6,986	HEICO Corp.	15,669	2,407
* Seagen Inc.	52,926	6,802	Hubbell Inc. Class B	10,179	2,389
Quest Diagnostics Inc.	43,268	6,769	Fortune Brands Innovations Inc.	24,416	1,394
PerkinElmer Inc.	48,000	6,731	* Generac Holdings Inc.	12,000	1,208
West Pharmaceutical Services Inc.	28,100	6,613			<b>346,608</b>
* IDEXX Laboratories Inc.	15,706	6,407			



Mid-Cap Index Portfolio

	Shares	Market Value* (\$000)		Shares	Market Value* (\$000)
<b>Real Estate (9.0%)</b>					
Realty Income Corp.	238,291	15,115			
VICI Properties Inc.	378,900	12,276			
* CoStar Group Inc.	154,567	11,945			
Welltower Inc.	179,514	11,767			
SBA Communications Corp. Class A	41,005	11,494			
Digital Realty Trust Inc.	109,275	10,957			
Alexandria Real Estate Equities Inc.	62,383	9,087			
* CBRE Group Inc. Class A	114,070	8,779			
Weyerhaeuser Co.	279,621	8,668			
AvalonBay Communities Inc.	53,159	8,586			
Equity Residential	136,436	8,050			
Extra Space Storage Inc.	50,892	7,490			
Simon Property Group Inc.	62,133	7,299			
Invitation Homes Inc.	232,274	6,885			
Mid-America Apartment Communities Inc.	43,838	6,882			
Ventas Inc.	151,900	6,843			
Sun Communities Inc.	47,088	6,734			
WP Carey Inc.	79,075	6,180			
Iron Mountain Inc.	110,463	5,507			
Essex Property Trust Inc.	24,628	5,219			
Healthpeak Properties Inc.	204,309	5,122			
UDR Inc.	123,750	4,793			
Camden Property Trust	40,530	4,535			
Boston Properties Inc.	53,674	3,627			
Host Hotels & Resorts Inc.	135,758	2,179			
Regency Centers Corp.	32,599	2,037			
* Zillow Group Inc. Class C	60,100	1,936			
* Zillow Group Inc. Class A	14,600	456			
		<b>200,448</b>			
<b>Technology (13.0%)</b>					
Amphenol Corp. Class A	226,152	17,219			
* Cadence Design Systems Inc.	104,245	16,746			
Microchip Technology Inc.	208,978	14,681			
* ON Semiconductor Corp.	164,261	10,245			
* Gartner Inc.	28,537	9,592			
Corning Inc.	289,245	9,238			
CDW Corp.	51,462	9,190			
* ANSYS Inc.	33,142	8,007			
Hewlett Packard Enterprise Co.	488,968	7,804			
* Datadog Inc. Class A	99,828	7,337			
* Atlassian Corp. Class A	56,300	7,245			
* VeriSign Inc.	34,189	7,024			
* EPAM Systems Inc.	20,800	6,817			
* Fortinet Inc.	126,150	6,167			
* Paycom Software Inc.	19,392	6,018			
Marvell Technology Inc.	162,038	6,002			
Monolithic Power Systems Inc.	16,908	5,979			
Skyworks Solutions Inc.	60,929	5,552			
* Pinterest Inc. Class A	223,284	5,421			
* Zoom Video Communications Inc. Class A	79,300	5,372			
* DoorDash Inc. Class A	109,500	5,346			
* Splunk Inc.	61,787	5,319			
Teradyne Inc.	59,200	5,171			
* Tyler Technologies Inc.	15,800	5,094			
* HubSpot Inc.	17,500	5,060			
* Akamai Technologies Inc.	59,752	5,037			
NetApp Inc.	82,580	4,960			
* MongoDB Inc. Class A	24,838	4,889			
* Cloudflare Inc. Class A	102,796	4,647			
Gen Digital Inc.	210,363	4,508			
* GoDaddy Inc. Class A	58,897	4,407			
* Match Group Inc.	106,104	4,402			
SS&C Technologies Holdings Inc.	81,361	4,236			
* DocuSign Inc. Class A	76,368	4,232			
* Palantir Technologies Inc. Class A	639,220	4,104			
* ZoomInfo Technologies Inc. Class A	130,388	3,926			
Seagate Technology Holdings plc	74,590	3,924			
* Western Digital Corp.	120,528	3,803			
* Okta Inc. Class A			54,777	3,743	
* Zscaler Inc.			32,900	3,682	
* Qorvo Inc.			38,578	3,497	
* Black Knight Inc.			56,285	3,476	
* Snap Inc. Class A			387,200	3,465	
*.1 Unity Software Inc.			117,698	3,365	
* Twilio Inc. Class A			66,300	3,246	
Bentley Systems Inc. Class B			84,118	3,109	
Leidos Holdings Inc.			26,000	2,735	
* F5 Inc.			11,431	1,640	
* Dropbox Inc. Class A			51,186	1,146	
* Toast Inc. Class A			57,591	1,038	
* UiPath Inc. Class A			57,211	727	
* AppLovin Corp. Class A			33,133	349	
				<b>289,939</b>	
<b>Telecommunications (1.7%)</b>					
Motorola Solutions Inc.			63,531	16,373	
* Arista Networks Inc.			87,060	10,565	
* Liberty Broadband Corp. Class C			46,039	3,511	
Juniper Networks Inc.			61,639	1,970	
* Roku Inc. Class A			46,304	1,884	
* DISH Network Corp. Class A			94,631	1,329	
Lumen Technologies Inc.			197,087	1,029	
* Liberty Broadband Corp. Class A			5,986	454	
				<b>37,115</b>	
<b>Utilities (7.8%)</b>					
Waste Connections Inc.			97,767	12,960	
* PG&E Corp.			796,191	12,946	
Consolidated Edison Inc.			134,839	12,852	
WEC Energy Group Inc.			119,863	11,238	
Eversource Energy			132,384	11,099	
Constellation Energy Corp.			124,071	10,696	
American Water Works Co. Inc.			69,162	10,542	
Edison International			145,141	9,234	
Ameren Corp.			98,206	8,732	
Entergy Corp.			77,356	8,703	
FirstEnergy Corp.			206,378	8,655	
PPL Corp.			265,767	7,766	
DTE Energy Co.			62,596	7,357	
AES Corp.			253,823	7,300	
CenterPoint Energy Inc.			238,995	7,167	
CMS Energy Corp.			110,292	6,985	
Eergy Inc.			87,165	5,485	
Alliant Energy Corp.			95,398	5,267	
NiSource Inc.			154,293	4,231	
Vistra Corp.			151,226	3,508	
Avangrid Inc.			29,410	1,264	
				<b>173,987</b>	
<b>Total Common Stocks (Cost \$1,922,947)</b>				<b>2,217,757</b>	
<b>Temporary Cash Investments (0.6%)</b>					
<b>Money Market Fund (0.6%)</b>					
2,3 Vanguard Market Liquidity Fund, 4.334% (Cost \$13,524)				135,246	13,524
<b>Total Investments (100.0%) (Cost \$1,936,471)</b>				<b>2,231,281</b>	
<b>Other Assets and Liabilities—Net (0.0%)</b>					<b>(15)</b>
<b>Net Assets (100%)</b>				<b>2,231,266</b>	
Cost is in \$000.					
* See Note A in Notes to Financial Statements.					
* Non-income-producing security.					
1 Includes partial security positions on loan to broker-dealers. The total value of securities on loan is \$6,100,000.					
2 Affiliated money market fund available only to Vanguard funds and certain trusts and accounts managed by Vanguard. Rate shown is the 7-day yield.					
3 Collateral of \$6,289,000 was received for securities on loan.					

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Derivative Financial Instruments Outstanding as of Period End

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Futures Contracts

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				(\$000)
	Expiration	Number of Long (Short) Contracts	Notional Amount	Value and Unrealized Appreciation (Depreciation)
<hr/> Long Futures Contracts				
E-mini Russell 2000 Index	March 2023	37	3,276	(17)
E-mini S&P 500 Index	March 2023	23	4,440	(77)
E-mini S&P Mid-Cap 400 Index	March 2023	15	3,664	(24)
				<hr/> (118)

## Statement of Assets and Liabilities

As of December 31, 2022

(\$000s, except shares, footnotes, and per-share amounts)	Amount
<b>Assets</b>	
Investments in Securities, at Value <sup>1</sup>	
Unaffiliated Issuers (Cost \$1,922,947)	2,217,757
Affiliated Issuers (Cost \$13,524)	13,524
Total Investments in Securities	2,231,281
Investment in Vanguard	85
Cash	365
Cash Collateral Pledged—Futures Contracts	670
Receivables for Investment Securities Sold	194
Receivables for Accrued Income	3,815
Receivables for Capital Shares Issued	2,580
<b>Total Assets</b>	<b>2,238,990</b>
<b>Liabilities</b>	
Payables for Investment Securities Purchased	316
Collateral for Securities on Loan	6,289
Payables for Capital Shares Redeemed	910
Payables to Vanguard	165
Variation Margin Payable—Futures Contracts	44
<b>Total Liabilities</b>	<b>7,724</b>
<b>Net Assets</b>	<b>2,231,266</b>

<sup>1</sup> Includes \$6,100,000 of securities on loan.

At December 31, 2022, net assets consisted of:

Paid-in Capital	1,864,745
Total Distributable Earnings (Loss)	366,521
<b>Net Assets</b>	<b>2,231,266</b>
<b>Net Assets</b>	
Applicable to 104,351,633 outstanding \$.001 par value shares of beneficial interest (unlimited authorization)	2,231,266
<b>Net Asset Value Per Share</b>	<b>\$21.38</b>

## Statement of Operations

	Year Ended December 31, 2022
	(\$000)
<b>Investment Income</b>	
<b>Income</b>	
Dividends <sup>1</sup>	35,824
Interest <sup>2</sup>	106
Securities Lending—Net	493
Total Income	36,423
<b>Expenses</b>	
The Vanguard Group—Note B	
Investment Advisory Services	215
Management and Administrative	3,474
Marketing and Distribution	138
Custodian Fees	37
Auditing Fees	29
Shareholders' Reports	82
Trustees' Fees and Expenses	1
Other Expenses	9
Total Expenses	3,985
Expenses Paid Indirectly	(2)
Net Expenses	3,983
<b>Net Investment Income</b>	<b>32,440</b>
<b>Realized Net Gain (Loss)</b>	
Investment Securities Sold <sup>2</sup>	42,675
Futures Contracts	(1,070)
<b>Realized Net Gain (Loss)</b>	<b>41,605</b>
<b>Change in Unrealized Appreciation (Depreciation)</b>	
Investment Securities <sup>2</sup>	(592,699)
Futures Contracts	(225)
<b>Change in Unrealized Appreciation (Depreciation)</b>	<b>(592,924)</b>
<b>Net Increase (Decrease) in Net Assets Resulting from Operations</b>	<b>(518,879)</b>

1 Dividends are net of foreign withholding taxes of \$14,000.

2 Interest income, realized net gain (loss), capital gain distributions received, and change in unrealized appreciation (depreciation) from an affiliated company of the portfolio were \$100,000, less than \$1,000, less than \$1,000, and less than \$1,000, respectively. Purchases and sales are for temporary cash investment purposes.

## Statement of Changes in Net Assets

	Year Ended December 31,	
	2022 (\$000)	2021 (\$000)
<b>Increase (Decrease) in Net Assets</b>		
<b>Operations</b>		
Net Investment Income	32,440	26,207
Realized Net Gain (Loss)	41,605	249,942
Change in Unrealized Appreciation (Depreciation)	(592,924)	266,299
Net Increase (Decrease) in Net Assets Resulting from Operations	(518,879)	542,448
<b>Distributions</b>		
Total Distributions	(277,011)	(190,939)
<b>Capital Share Transactions</b>		
Issued	270,019	357,264
Issued in Lieu of Cash Distributions	277,011	190,939
Redeemed	(300,821)	(359,789)
Net Increase (Decrease) from Capital Share Transactions	246,209	188,414
Total Increase (Decrease)	(549,681)	539,923
<b>Net Assets</b>		
Beginning of Period	2,780,947	2,241,024
End of Period	2,231,266	2,780,947

## Financial Highlights

For a Share Outstanding Throughout Each Period	Year Ended December 31,				
	2022	2021	2020	2019	2018
<b>Net Asset Value, Beginning of Period</b>	<b>\$29.48</b>	<b>\$25.77</b>	<b>\$24.03</b>	<b>\$20.23</b>	<b>\$23.72</b>
<b>Investment Operations</b>					
Net Investment Income <sup>1</sup>	.319	.284	.325 <sup>2</sup>	.334	.343
Net Realized and Unrealized Gain (Loss) on Investments	(5.464)	5.642	3.047	5.621	(2.386)
Total from Investment Operations	(5.145)	5.926	3.372	5.955	(2.043)
<b>Distributions</b>					
Dividends from Net Investment Income	(.282)	(.318)	(.344)	(.350)	(.286)
Distributions from Realized Capital Gains	(2.673)	(1.898)	(1.288)	(1.805)	(1.161)
Total Distributions	(2.955)	(2.216)	(1.632)	(2.155)	(1.447)
<b>Net Asset Value, End of Period</b>	<b>\$21.38</b>	<b>\$29.48</b>	<b>\$25.77</b>	<b>\$24.03</b>	<b>\$20.23</b>
<b>Total Return</b>	<b>-18.82%</b>	<b>24.36%</b>	<b>18.07%</b>	<b>30.87%</b>	<b>-9.33%</b>
<b>Ratios/Supplemental Data</b>					
Net Assets, End of Period (Millions)	\$2,231	\$2,781	\$2,241	\$2,155	\$1,621
Ratio of Total Expenses to Average Net Assets	0.17% <sup>3</sup>	0.17%	0.17%	0.17%	0.17%
Ratio of Net Investment Income to Average Net Assets	1.39%	1.03%	1.50% <sup>2</sup>	1.49%	1.49%
Portfolio Turnover Rate	16%	20%	28%	21%	21%

1 Calculated based on average shares outstanding.

2 Net investment income per share and the ratio of net investment income to average net assets include \$0.036 and 0.17%, respectively, resulting from a special dividend from NortonLifeLock Inc. in February 2020.

3 The ratio of expenses to average net assets for the period net of reduction from custody fee offset arrangements was 0.17%.

## Notes to Financial Statements

The Mid-Cap Index Portfolio, a portfolio of Vanguard Variable Insurance Funds, is registered under the Investment Company Act of 1940 as an open-end investment company. The portfolio's shares are only available for purchase by separate accounts of insurance companies as investments for variable annuity plans, variable life insurance contracts, or other variable benefit insurance contracts.

Significant market disruptions, such as those caused by pandemics (e.g., COVID-19 pandemic), natural or environmental disasters, war (e.g., Russia's invasion of Ukraine), acts of terrorism, or other events, can adversely affect local and global markets and normal market operations. Any such disruptions could have an adverse impact on the value of the portfolio's investments and portfolio performance.

A. The following significant accounting policies conform to generally accepted accounting principles for U.S. investment companies. The portfolio consistently follows such policies in preparing its financial statements.

1. **Security Valuation:** Securities are valued as of the close of trading on the New York Stock Exchange (generally 4 p.m., Eastern time) on the valuation date. Equity securities are valued at the latest quoted sales prices or official closing prices taken from the primary market in which each security trades; such securities not traded on the valuation date are valued at the mean of the latest quoted bid and asked prices. Securities for which market quotations are not readily available, or whose values have been affected by events occurring before the portfolio's pricing time but after the close of the securities' primary markets, are valued by methods deemed by the valuation designee to represent fair value and subject to oversight by the board of trustees. Investments in Vanguard Market Liquidity Fund are valued at that fund's net asset value.

2. **Futures Contracts:** The portfolio uses index futures contracts to a limited extent, with the objectives of maintaining full exposure to the stock market, maintaining liquidity, and minimizing transaction costs. The portfolio may purchase futures contracts to immediately invest incoming cash in the market, or sell futures in response to cash outflows, thereby simulating a fully invested position in the underlying index while maintaining a cash balance for liquidity. The primary risks associated with the use of futures contracts are imperfect correlation between changes in market values of stocks held by the portfolio and the prices of futures contracts, and the possibility of an illiquid market. Counterparty risk involving futures is mitigated because a regulated clearinghouse is the counterparty instead of the clearing broker. To further mitigate counterparty risk, the portfolio trades futures contracts on an exchange, monitors the financial strength of its clearing brokers and clearinghouse, and has entered into clearing agreements with its clearing brokers. The clearinghouse imposes initial margin requirements to secure the portfolio's performance and requires daily settlement of variation margin representing changes in the market value of each contract. Any securities pledged as initial margin for open contracts are noted in the Schedule of Investments.

Futures contracts are valued at their quoted daily settlement prices. The notional amounts of the contracts are not recorded in the Statement of Assets and Liabilities. Fluctuations in the value of the contracts are recorded in the Statement of Assets and Liabilities as an asset (liability) and in the Statement of Operations as unrealized appreciation (depreciation) until the contracts are closed, when they are recorded as realized gains (losses) on futures contracts.

During the year ended December 31, 2022, the portfolio's average investments in long and short futures contracts represented less than 1% and 0% of net assets, respectively, based on the average of the notional amounts at each quarter-end during the period.

3. **Federal Income Taxes:** The portfolio intends to continue to qualify as a regulated investment company and distribute virtually all of its taxable income. The portfolio's tax returns are open to examination by the relevant tax authorities until expiration of the applicable statute of limitations, which is generally three years after the filing of the tax return. Management has analyzed the portfolio's tax positions taken for all open federal and state income tax years, and has concluded that no provision for income tax is required in the portfolio's financial statements.

4. **Distributions:** Distributions to shareholders are recorded on the ex-dividend date. Distributions are determined on a tax basis at the fiscal year-end and may differ from net investment income and realized capital gains for financial reporting purposes.

5. **Securities Lending:** To earn additional income, the portfolio lends its securities to qualified institutional borrowers. Security loans are subject to termination by the portfolio at any time, and are required to be secured at all times by collateral in an amount at least equal to the market value of securities loaned. Daily market fluctuations could cause the value of loaned securities to be more or less than the value of the collateral received. When this occurs, the collateral is adjusted and settled before the opening of the market on the next business day. The portfolio further mitigates its counterparty risk by entering into securities lending transactions only with a diverse group of

prequalified counterparties, monitoring their financial strength, and entering into master securities lending agreements with its counterparties. The master securities lending agreements provide that, in the event of a counterparty's default (including bankruptcy), the portfolio may terminate any loans with that borrower, determine the net amount owed, and sell or retain the collateral up to the net amount owed to the portfolio; however, such actions may be subject to legal proceedings. While collateral mitigates counterparty risk, in the event of a default, the portfolio may experience delays and costs in recovering the securities loaned. The portfolio invests cash collateral received in Vanguard Market Liquidity Fund, and records a liability in the Statement of Assets and Liabilities for the return of the collateral, during the period the securities are on loan. Collateral investments in Vanguard Market Liquidity Fund are subject to market appreciation or depreciation. Securities lending income represents fees charged to borrowers plus income earned on invested cash collateral, less expenses associated with the loan. During the term of the loan, the portfolio is entitled to all distributions made on or in respect of the loaned securities.

6. Credit Facilities and Interfund Lending Program: The portfolio and certain other funds managed by The Vanguard Group ("Vanguard") participate in a \$4.4 billion committed credit facility provided by a syndicate of lenders pursuant to a credit agreement and an uncommitted credit facility provided by Vanguard. Both facilities may be renewed annually. Each fund is individually liable for its borrowings, if any, under the credit facilities. Borrowings may be utilized for temporary or emergency purposes and are subject to the portfolio's regulatory and contractual borrowing restrictions. With respect to the committed credit facility, the participating funds are charged administrative fees and an annual commitment fee of 0.10% of the undrawn committed amount of the facility, which are allocated to the funds based on a method approved by the portfolio's board of trustees and included in Management and Administrative expenses on the portfolio's Statement of Operations. Any borrowings under either facility bear interest at an agreed-upon spread plus the higher of the federal funds effective rate, the overnight bank funding rate, or the Daily Simple Secured Overnight Financing Rate inclusive of an additional agreed-upon spread. However, borrowings under the uncommitted credit facility may bear interest based upon an alternate rate agreed to by the portfolio and Vanguard.

In accordance with an exemptive order (the "Order") from the SEC, the portfolio may participate in a joint lending and borrowing program that allows registered open-end Vanguard funds to borrow money from and lend money to each other for temporary or emergency purposes (the "Interfund Lending Program"), subject to compliance with the terms and conditions of the Order, and to the extent permitted by the portfolio's investment objective and investment policies. Interfund loans and borrowings normally extend overnight but can have a maximum duration of seven days. Loans may be called on one business day's notice. The interest rate to be charged is governed by the conditions of the Order and internal procedures adopted by the board of trustees. The board of trustees is responsible for overseeing the Interfund Lending Program.

For the year ended December 31, 2022, the portfolio did not utilize the credit facilities or the Interfund Lending Program.

7. Other: Dividend income is recorded on the ex-dividend date. Non-cash dividends included in income, if any, are recorded at the fair value of the securities received. Interest income includes income distributions received from Vanguard Market Liquidity Fund and is accrued daily. Security transactions are accounted for on the date securities are bought or sold. Costs used to determine realized gains (losses) on the sale of investment securities are those of the specific securities sold.

B. In accordance with the terms of a Funds' Service Agreement (the "FSA") between Vanguard and the portfolio, Vanguard furnishes to the portfolio investment advisory, corporate management, administrative, marketing, and distribution services at Vanguard's cost of operations (as defined by the FSA). These costs of operations are allocated to the portfolio based on methods and guidelines approved by the board of trustees and are generally settled twice a month.

Upon the request of Vanguard, the portfolio may invest up to 0.40% of its net assets as capital in Vanguard. At December 31, 2022, the portfolio had contributed to Vanguard capital in the amount of \$85,000, representing less than 0.01% of the portfolio's net assets and 0.03% of Vanguard's capital received pursuant to the FSA. The portfolio's trustees and officers are also directors and employees, respectively, of Vanguard.

C. The portfolio's custodian bank has agreed to reduce its fees when the portfolio maintains cash on deposit in the non-interest-bearing custody account. For the year ended December 31, 2022, custodian fee offset arrangements reduced the portfolio's expenses by \$2,000 (an annual rate of less than 0.01% of average net assets).



D. Various inputs may be used to determine the value of the portfolio's investments and derivatives. These inputs are summarized in three broad levels for financial statement purposes. The inputs or methodologies used to value securities are not necessarily an indication of the risk associated with investing in those securities.

**Level 1**—Quoted prices in active markets for identical securities.

**Level 2**—Other significant observable inputs (including quoted prices for similar securities, interest rates, prepayment speeds, credit risk, etc.).

**Level 3**—Significant unobservable inputs (including the portfolio's own assumptions used to determine the fair value of investments). Any investments and derivatives valued with significant unobservable inputs are noted on the Schedule of Investments.

At December 31, 2022, 100% of the market value of the portfolio's investments and derivatives was determined based on Level 1 inputs.

E. Permanent differences between book-basis and tax-basis components of net assets are reclassified among capital accounts in the financial statements to reflect their tax character. These reclassifications have no effect on net assets or net asset value per share. As of period end, permanent differences primarily attributable to the accounting for applicable passive foreign investment companies were reclassified between the individual components of total distributable earnings (loss).

Temporary differences between book-basis and tax-basis components of total distributable earnings (loss) arise when certain items of income, gain, or loss are recognized in different periods for financial statement and tax purposes; these differences will reverse at some time in the future. The differences are primarily related to the deferral of losses from wash sales; the recognition of unrealized gains or losses from certain derivative contracts; and the recognition of unrealized gains from passive foreign investment companies. As of period end, the tax-basis components of total distributable earnings (loss) are detailed in the table as follows:

	Amount (\$000)
Undistributed Ordinary Income	31,196
Undistributed Long-Term Gains	41,107
Capital Loss Carryforwards	—
Qualified Late-Year Losses	—
Net Unrealized Gains (Losses)	294,218

The tax character of distributions paid was as follows:

	Year Ended December 31,	
	2022 Amount (\$000)	2021 Amount (\$000)
Ordinary Income*	55,522	46,656
Long-Term Capital Gains	221,489	144,283
Total	277,011	190,939

\* Includes short-term capital gains, if any.

As of December 31, 2022, gross unrealized appreciation and depreciation for investments and derivatives based on cost for U.S. federal income tax purposes were as follows:

	Amount (\$000)
Tax Cost	1,937,063
Gross Unrealized Appreciation	543,787
Gross Unrealized Depreciation	(249,569)
Net Unrealized Appreciation (Depreciation)	294,218

F. During the year ended December 31, 2022, the portfolio purchased \$378,981,000 of investment securities and sold \$384,476,000 of investment securities, other than temporary cash investments.

The portfolio purchased securities from and sold securities to other Vanguard funds or accounts managed by Vanguard or its affiliates, in accordance with procedures adopted by the board of trustees in compliance with Rule 17a-7 of the Investment Company Act of 1940. For the year ended December 31, 2022, such purchases were \$23,975,000 and sales were \$124,740,000, resulting in

net realized loss of \$60,162,000; these amounts, other than temporary cash investments, are included in the purchases and sales of investment securities noted above.

G. Capital shares issued and redeemed were:

	Year Ended December 31,	
	2022 Shares (000)	2021 Shares (000)
Issued	11,614	12,978
Issued in Lieu of Cash Distributions	11,188	7,500
Redeemed	(12,791)	(13,103)
Net Increase (Decrease) in Shares Outstanding	10,011	7,375

At December 31, 2022, one shareholder, (an insurance company separate account whose holdings in the portfolio represent the indirect investment of Vanguard Variable Annuity contract holders) was the record or beneficial owner of 35% of the portfolio's net assets. If this shareholder were to redeem its investment in the portfolio, the redemption might result in an increase in the portfolio's expense ratio, cause the portfolio to incur higher transaction costs, or lead to the realization of taxable capital gains.

H. Management has determined that no events or transactions occurred subsequent to December 31, 2022, that would require recognition or disclosure in these financial statements.

# Report of Independent Registered Public Accounting Firm

To the Board of Trustees of Vanguard Variable Insurance Funds and Shareholders of Mid-Cap Index Portfolio

## Opinion on the Financial Statements

We have audited the accompanying statement of assets and liabilities, including the schedule of investments, of Mid-Cap Index Portfolio (one of the portfolios constituting Vanguard Variable Insurance Funds, referred to hereafter as the "Portfolio") as of December 31, 2022, the related statement of operations for the year ended December 31, 2022, the statement of changes in net assets for each of the two years in the period ended December 31, 2022, including the related notes, and the financial highlights for each of the five years in the period ended December 31, 2022 (collectively referred to as the "financial statements"). In our opinion, the financial statements present fairly, in all material respects, the financial position of the Portfolio as of December 31, 2022, the results of its operations for the year then ended, the changes in its net assets for each of the two years in the period ended December 31, 2022 and the financial highlights for each of the five years in the period ended December 31, 2022 in conformity with accounting principles generally accepted in the United States of America.

## Basis for Opinion

These financial statements are the responsibility of the Portfolio's management. Our responsibility is to express an opinion on the Portfolio's financial statements based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) (PCAOB) and are required to be independent with respect to the Portfolio in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits of these financial statements in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether due to error or fraud.

Our audits included performing procedures to assess the risks of material misstatement of the financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the financial statements. Our procedures included confirmation of securities owned as of December 31, 2022 by correspondence with the custodian, transfer agent and brokers; when replies were not received from brokers, we performed other auditing procedures. We believe that our audits provide a reasonable basis for our opinion.

/s/PricewaterhouseCoopers LLP  
Philadelphia, Pennsylvania  
February 15, 2023

We have served as the auditor of one or more investment companies in The Vanguard Group of Funds since 1975.

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**Tax information (unaudited)**

For corporate shareholders, 91.7%, or if subsequently determined to be different, the maximum percentage allowable by law, of ordinary income (dividend income plus short-term gains, if any) for the fiscal year qualified for the dividends-received deduction.

The portfolio hereby designates \$26,000, or if subsequently determined to be different, the maximum amount allowable by law, of interest earned from obligations of the U.S. government which is generally exempt from state income tax.

The portfolio distributed \$221,489,000 as capital gain dividends (20% rate gain distributions) to shareholders during the fiscal year.

The CRSP US Mid Cap Index (the "Index") is a product of the Center for Research in Security Prices, LLC ("CRSP"), an affiliate of the University of Chicago ("University"), and has been licensed for use by Vanguard. CRSP® is a trademark of CRSP; and has been licensed by CRSP for use for certain purposes by Vanguard. The Vanguard Mid-Cap Index Portfolio is not sponsored, endorsed, sold or promoted by CRSP or University. Neither CRSP nor University makes any representation or warranty, express or implied, to the owners of the Vanguard Mid-Cap Index Portfolio or any member of the public regarding the advisability of investing in securities generally or in Vanguard Mid-Cap Index Portfolio particularly or the ability of the Index to track general market performance. The Index is determined, composed and calculated without regard to Vanguard or the Vanguard Mid-Cap Index Portfolio. Neither CRSP nor the University has any obligation to take the needs of Vanguard or the owners of Vanguard Mid-Cap Index Portfolio into consideration in determining, composing or calculating the Index. Neither CRSP nor the University is responsible for and has not participated in the determination of the prices and amount of Vanguard Mid-Cap Index Portfolio or the timing of the issuance or sale of Vanguard Mid-Cap Index Portfolio or in the determination or calculation of the equation by which Vanguard Mid-Cap Index Portfolio is to be converted into cash, surrendered or redeemed, as the case may be. Neither CRSP nor the University has any obligation or liability in connection with the administration, marketing or trading of Vanguard Mid-Cap Index Portfolio. There is no assurance that investment products based on the Index will accurately track index performance or provide positive investment returns. Neither CRSP nor the University is an investment advisor. Inclusion of a security within an index is not a recommendation by CRSP or the University to buy, sell, or hold such security, nor is it considered to be investment advice.

NEITHER CRSP NOR THE UNIVERSITY GUARANTEE THE ADEQUACY, ACCURACY, TIMELINESS AND/OR THE COMPLETENESS OF THE INDEX OR ANY DATA RELATED THERETO OR ANY COMMUNICATION, INCLUDING BUT NOT LIMITED TO, ORAL OR WRITTEN COMMUNICATION (INCLUDING ELECTRONIC COMMUNICATIONS) WITH RESPECT THERETO. NEITHER CRSP NOR THE UNIVERSITY SHALL BE SUBJECT TO ANY DAMAGES OR LIABILITY FOR ANY ERRORS, OMISSIONS, OR DELAYS THEREIN. NEITHER CRSP NOR THE UNIVERSITY MAKES ANY EXPRESS OR IMPLIED WARRANTIES, AND CRSP AND THE UNIVERSITY EXPRESSLY DISCLAIM ALL WARRANTIES, OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR USE OR AS TO RESULTS TO BE OBTAINED BY VANGUARD, OWNERS OF THE VANGUARD MID-CAP INDEX PORTFOLIO, OR ANY OTHER PERSON OR ENTITY FROM THE USE OF THE INDEX OR WITH RESPECT TO ANY DATA RELATED THERETO. WITHOUT LIMITING ANY OF THE FOREGOING, IN NO EVENT WHATSOEVER SHALL CRSP OR THE UNIVERSITY BE LIABLE FOR ANY INDIRECT, SPECIAL, INCIDENTAL, PUNITIVE, OR CONSEQUENTIAL DAMAGES INCLUDING BUT NOT LIMITED TO, LOSS OF PROFITS, TRADING LOSSES, LOST TIME OR GOODWILL, EVEN IF IT HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES, WHETHER IN CONTRACT, TORT, STRICT LIABILITY, OR OTHERWISE. THERE ARE NO THIRD-PARTY BENEFICIARIES OF ANY AGREEMENTS OR ARRANGEMENTS BETWEEN CRSP AND VANGUARD, OTHER THAN THE LICENSORS, IF ANY, OF CRSP.

# The People Who Govern Your Fund

The trustees of your mutual fund are there to see that the fund is operated and managed in your best interests since, as a shareholder, you are a part owner of the fund. Your fund's trustees also serve on the board of directors of The Vanguard Group, Inc., which is owned by the Vanguard funds and provides services to them.

A majority of Vanguard's board members are independent, meaning that they have no affiliation with Vanguard or the funds they oversee, apart from the sizable personal investments they have made as private individuals. The independent board members have distinguished backgrounds in business, academia, and public service. Each of the trustees and executive officers oversees 206 Vanguard funds.

Information for each trustee and executive officer of the fund appears below. That information, as well as the Vanguard fund count, is as of the date on the cover of this fund report. The mailing address of the trustees and officers is P.O. Box 876, Valley Forge, PA 19482. More information about the trustees is in the *Statement of Additional Information*, which can be obtained, without charge, by contacting Vanguard at 800-662-7447, or online at [vanguard.com](http://vanguard.com).

## Interested Trustee<sup>1</sup>

### Mortimer J. Buckley

Born in 1969. Trustee since January 2018. Principal occupation(s) during the past five years and other experience: chairman of the board (2019–present) of Vanguard and of each of the investment companies served by Vanguard; chief executive officer (2018–present) of Vanguard; chief executive officer, president, and trustee (2018–present) of each of the investment companies served by Vanguard; president and director (2017–present) of Vanguard; and president (2018–present) of Vanguard Marketing Corporation. Chief investment officer (2013–2017), managing director (2002–2017), head of the Retail Investor Group (2006–2012), and chief information officer (2001–2006) of Vanguard. Member of the board of governors of the Investment Company Institute and the board of governors of FINRA. Trustee and vice chair of The Shipley School.

## Independent Trustees

### Tara Bunch

Born in 1962. Trustee since November 2021. Principal occupation(s) during the past five years and other experience: head of global operations at Airbnb (2020–present). Vice president of AppleCare (2012–2020). Member of the board of directors of Out & Equal (2002–2006), the advisory board of the University of California, Berkeley School of Engineering (2020–present), and the advisory board of Santa Clara University's Leavey School of Business (2018–present).

### Emerson U. Fullwood

Born in 1948. Trustee since January 2008. Principal occupation(s) during the past five years and other experience: executive chief staff and marketing officer for North America and corporate vice president (retired 2008) of Xerox Corporation (document management products and services). Former president of the Worldwide Channels Group, Latin America, and Worldwide Customer Service and executive chief staff officer of Developing Markets of Xerox. Executive in residence and 2009–2010 Distinguished Minett Professor at the Rochester Institute of Technology. Member of the board of directors of the University of Rochester Medical Center, the Monroe Community College Foundation, the United Way of Rochester, North Carolina A&T University, Roberts Wesleyan College, and the Rochester Philharmonic Orchestra. Trustee of the University of Rochester.

### F. Joseph Loughrey

Born in 1949. Trustee since October 2009. Principal occupation(s) during the past five years and other experience: president and chief operating officer (retired 2009) and vice chairman of the board (2008–2009) of Cummins Inc. (industrial machinery). Chairman of the board of Hillenbrand, Inc. (specialized consumer services). Director of the V Foundation. Member of the advisory council for the College of Arts and Letters at the University of Notre Dame. Chairman of the board of Saint Anselm College.

### Mark Loughridge

Born in 1953. Trustee since March 2012. Principal occupation(s) during the past five years and other experience: senior vice president and chief financial officer (retired 2013) of IBM (information technology services). Fiduciary member of IBM's Retirement Plan Committee (2004–2013), senior vice president and general manager (2002–2004) of IBM Global Financing, vice president and controller (1998–2002) of

IBM, and a variety of other prior management roles at IBM. Member of the Council on Chicago Booth.

### Scott C. Malpass

Born in 1962. Trustee since March 2012. Principal occupation(s) during the past five years and other experience: adjunct professor of finance at the University of Notre Dame (2020–present). Chief investment officer (retired 2020) and vice president (retired 2020) of the University of Notre Dame. Assistant professor (retired June 2020) of finance at the Mendoza College of Business, University of Notre Dame, and member of the Notre Dame 403(b) Investment Committee. Member of the board of Catholic Investment Services, Inc. (investment advisors), the board of superintendence of the Institute for the Works of Religion, and the board of directors of Paxos Trust Company (finance).

### Deanna Mulligan

Born in 1963. Trustee since January 2018. Principal occupation(s) during the past five years and other experience: chief executive officer of Purposeful (advisory firm for CEOs and C-level executives; 2021–present). Board chair (2020), chief executive officer (2011–2020), and president (2010–2019) of The Guardian Life Insurance Company of America. Chief operating officer (2010–2011) and executive vice president (2008–2010) of Individual Life and Disability of the Guardian Life Insurance Company of America. Member of the board of the Economic Club of New York. Trustee of the Partnership for New York City (business leadership), Chief Executives for Corporate Purpose, and the NewYork-Presbyterian Hospital.

### André F. Perold

Born in 1952. Trustee since December 2004. Principal occupation(s) during the past five years and other experience: George Gund Professor of Finance and Banking, Emeritus at the Harvard Business School (retired 2011). Chief investment officer and co-managing partner of HighVista Strategies (private investment firm). Member of the board (2018–present) of RIT Capital Partners (investment firm). Member of the investment committee of Partners Health Care System.

### Sarah Bloom Raskin

Born in 1961. Trustee since January 2018. Principal occupation(s) during the past five years and other experience: deputy secretary (2014–2017) of the United States Department of the Treasury. Governor (2010–2014) of the Federal Reserve Board. Commissioner (2007–2010) of financial regulation for the State of Maryland. Colin W. Brown Distinguished Professor of the Practice of Law (2021–present), professor (2020–present), Distinguished Fellow of the Global Financial Markets Center (2020–present), and Rubenstein Fellow (2017–2020) at Duke University. Trustee (2017–present) of Amherst College and member of Amherst College Investment Committee (2019–present). Member of the Regenerative Crisis Response Committee (2020–present).

### David A. Thomas

Born in 1956. Trustee since July 2021. Principal occupation(s) during the past five years and other experience: president of Morehouse College (2018–present). Professor of business administration, emeritus at Harvard University (2017–2018). Dean (2011–2016) and professor of management (2016–2017) at the Georgetown University McDonough School of Business. Director of DTE Energy Company (2013–present). Trustee of Common Fund (2019–present).

<sup>1</sup> Mr. Buckley is considered an "interested person," as defined in the Investment Company Act of 1940, because he is an officer of the Vanguard funds.

**Peter F. Volanakis**

Born in 1955. Trustee since July 2009. Principal occupation(s) during the past five years and other experience: president and chief operating officer (retired 2010) of Corning Incorporated (communications equipment) and director of Corning Incorporated (2000–2010) and Dow Corning (2001–2010). Director (2012) of SPX Corporation (multi-industry manufacturing). Overseer of the Amos Tuck School of Business Administration, Dartmouth College (2001–2013). Member of the BMW Group Mobility Council.

**Executive Officers**

**Jacqueline Angell**

Born in 1974. Principal occupation(s) during the past five years and other experience: principal of Vanguard. Chief compliance officer (November 2022–present) of Vanguard and of each of the investment companies served by Vanguard. Chief compliance officer (2018–2022) and deputy chief compliance officer (2017–2019) of State Street Corporation.

**Christine M. Buchanan**

Born in 1970. Principal occupation(s) during the past five years and other experience: principal of Vanguard. Chief financial officer (2021–present) and treasurer (2017–2022) of each of the investment companies served by Vanguard. Partner (2005–2017) at KPMG (audit, tax, and advisory services).

**John Galloway**

Born in 1973. Principal occupation(s) during the past five years and other experience: principal of Vanguard. Investment stewardship officer (September 2020–present) of each of the investment companies served by Vanguard. Head of Investor Advocacy (February 2020–present) and head of Marketing Strategy and Planning (2017–2020) at Vanguard. Special assistant to the President of the United States (2015).

**Ashley Grim**

Born in 1984. Principal occupation(s) during the past five years and other experience: treasurer (February 2022–present) of each of the investment companies served by Vanguard. Fund transfer agent controller (2019–2022) and director of Audit Services

(2017–2019) at Vanguard. Senior manager (2015–2017) at PriceWaterhouseCoopers (audit and assurance, consulting, and tax services).

**Peter Mahoney**

Born in 1974. Principal occupation(s) during the past five years and other experience: principal of Vanguard. Controller (2015–present) of each of the investment companies served by Vanguard. Head of International Fund Services (2008–2014) at Vanguard.

**Anne E. Robinson**

Born in 1970. Principal occupation(s) during the past five years and other experience: general counsel (2016–present) of Vanguard. Secretary (2016–present) of Vanguard and of each of the investment companies served by Vanguard. Managing director (2016–present) of Vanguard. Managing director and general counsel of Global Cards and Consumer Services (2014–2016) at Citigroup. Counsel (2003–2014) at American Express. Nonexecutive director of the board of National Grid (energy).

**Michael Rollings**

Born in 1963. Principal occupation(s) during the past five years and other experience: finance director (2017–present) and treasurer (2017) of each of the investment companies served by Vanguard. Managing director (2016–present) of Vanguard. Chief financial officer (2016–present) of Vanguard. Director (2016–present) of Vanguard Marketing Corporation. Executive vice president and chief financial officer (2006–2016) of MassMutual Financial Group.

**Vanguard Senior Management Team**

**Matthew Benchener**  
**Joseph Brennan**  
**Mortimer J. Buckley**  
**Gregory Davis**  
**John James**  
**Chris D. McIsaac**

**Thomas M. Rampulla**  
**Karin A. Risi**  
**Anne E. Robinson**  
**Michael Rollings**  
**Nitin Tandon**  
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