Howard Hughes Medical Institute

Consolidated Financial Statements
for the years ended August 31, 2021 and 2020
and Report of Independent Auditors Thereon

Report of Independent Auditors

To the Trustees of the Howard Hughes Medical Institute:

We have audited the accompanying consolidated financial statements of Howard Hughes Medical Institute and its subsidiaries (the "Institute"), which comprise the consolidated statements of financial position as of August 31, 2021 and 2020, and the related consolidated statements of activities and of cash flows for the years then ended.

Management's Responsibility for the Consolidated Financial Statements

Management is responsible for the preparation and fair presentation of the consolidated financial statements in accordance with accounting principles generally accepted in the United States of America; this includes the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of consolidated financial statements that are free from material misstatement, whether due to fraud or error.

Auditors' Responsibility

Our responsibility is to express an opinion on the consolidated financial statements based on our audits. We conducted our audits in accordance with auditing standards generally accepted in the United States of America. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the consolidated financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the consolidated financial statements. The procedures selected depend on our judgment, including the assessment of the risks of material misstatement of the consolidated financial statements, whether due to fraud or error. In making those risk assessments, we consider internal control relevant to the Institute's preparation and fair presentation of the consolidated financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Institute's internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Opinion

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of Howard Hughes Medical Institute and its subsidiaries as of August 31, 2021 and 2020, and the changes in their net assets and their cash flows for the years then ended in accordance with accounting principles generally accepted in the United States of America.

PricewaterhouseCoopers LLP

November 18, 2021

HOWARD HUGHES MEDICAL INSTITUTE

Consolidated Statements of Financial Position
August 31, 2021 and 2020

(In thousands)

Assets	2021	2020
Cash and cash equivalents	$ 687,981	$ 1,259,828
Escrowed bond proceeds	-	12,495
Due from brokers	144,401	118,631
Securities pledged as collateral	299,523	603,892
Securities lending collateral	59,905	44,395
Investment receivables	75,431	41,035
Investments and derivative assets	27,067,118	20,765,522
Deferred income taxes, net	-	3,527
Land, buildings, laboratory space, and equipment, net	765,037	763,209
Right-of-use assets, net	138,227	151,670
Other assets	105,484	76,253
Total assets	$ 29,343,107	$ 23,840,457

Liabilities	2021	2020
Accounts payable and accrued liabilities	$ 134,501	$ 149,790
Investment payables	52,431	41,596
Investments and derivative liabilities	405,123	378,479
Obligation to return securities lending collateral	59,905	44,395
Repurchase obligations	300,781	604,998
Grant commitments	59,667	82,363
Post-retirement/employment obligations, net	281,893	339,989
Capital financing		
Note payable	40,376	40,376
Financing lease obligations	357	5,891
Bonds payable	770,950	769,072
Operating lease liabilities	138,188	151,607
Total liabilities	2,244,172	2,608,556
Net assets	27,098,935	21,231,901
Total liabilities and net assets	$ 29,343,107	$ 23,840,457

The accompanying notes are an integral part of these consolidated financial statements.

HOWARD HUGHES MEDICAL INSTITUTE

Consolidated Statements of Activities
For the Years Ended August 31, 2021 and 2020

(In thousands)

Revenue	2021	2020
Net investment return	$ 6,659,678	$ 1,739,874
Intellectual property and other income	26,362	17,139
Total revenue	6,686,040	1,757,013
Expenses		
Program activities		
Medical research	660,227	653,348
Science education and other scientific programs	63,525	66,450
General and administrative	103,586	93,283
Deferred tax benefit, net	3,527	9,367
Total expenses	830,865	822,448
Increase in net assets from operating activities	5,855,175	934,565
Other changes		
Other components of net periodic benefit cost	27,425	173,616
Postretirement changes other than net periodic benefit cost	(15,566)	(15,566)
Total increase in net assets	5,867,034	1,092,615
Net assets, beginning of year	21,231,901	20,139,286
Net assets, end of year	$ 27,098,935	$ 21,231,901

The accompanying notes are an integral part of these consolidated financial statements.

HOWARD HUGHES MEDICAL INSTITUTE

Consolidated Statements of Cash Flows
For the Years Ended August 31, 2021 and 2020

(In thousands)	2021	2020
Change in net assets	$ 5,867,034	$ 1,092,615
Adjustments to reconcile change in net assets to net cash used for operating activities		
Depreciation and amortization	103,337	86,489
Amortization of operating lease right-of-use assets	44,918	45,400
Postretirement changes other than net periodic benefit cost	15,566	15,566
Loss on disposal of assets	3,820	4,458
Income earned from stock dividends	(5,766)	(14,324)
Deferred tax benefit	3,527	9,367
Net realized and change in unrealized gains on investments and derivative contracts	(6,583,796)	(1,705,009)
Change in receivables and other assets	(96,895)	50,442
Change in due from brokers	(25,770)	(32,274)
Change in securities pledged as collateral	304,369	(603,892)
Change in operating/investment payables and accrued liabilities	(29,686)	(75,727)
Change in grant commitments	(22,696)	(21,284)
Change in post-retirement/employment obligations	(73,662)	(176,628)
Net cash used for operating activities	(495,700)	(1,324,801)
Cash flows from investing activities		
Building and equipment purchases	(93,439)	(102,980)
Proceeds from sales, maturities of investments, securities sold short and derivative contracts	13,500,917	16,142,299
Purchases of investments, derivative contracts and purchases to cover securities sold short	(13,186,369)	(14,831,077)
Redemption of securities lending collateral investments	(15,510)	(3,577)
Net cash provided by investing activities	205,599	1,204,665
Cash flows from financing activities		
Proceeds from issuance of long-term debt	-	40,376
Payments to redeem long-term debt	-	(40,376)
Principal payments under financing lease obligations	(5,534)	(7,330)
Net (repayments)/proceeds from repurchase obligations	(304,217)	604,998
Proceeds from securities lending program	15,510	3,577
Net cash (used for)/provided by financing activities	(294,241)	601,245
Net (decrease)/increase in cash	(584,342)	481,109
Cash, cash equivalents and restricted cash, beginning of year	1,272,323	791,214
Cash, cash equivalents, and restricted cash, end of year	$ 687,981	$ 1,272,323

The accompanying notes are an integral part of these consolidated financial statements.

HOWARD HUGHES MEDICAL INSTITUTE

Consolidated Statements of Cash Flows
For the Years Ended August 31, 2021 and 2020

	2021	2020
Supplemental disclosure of non-cash investing and financing activities		
Accruals for equipment and construction costs included in *Accounts payable and accrued liabilities*	$ 2,608	$ 7,334
Operating lease assets and related liabilities	30,722	13,293
Total cash, cash equivalents, and restricted cash		
Cash and cash equivalents	$ 687,981	$ 1,259,828
Escrowed bond proceeds	-	12,495
Total cash, cash equivalents, and restricted cash	$ 687,981	$ 1,272,323

The accompanying notes are an integral part of these consolidated financial statements.

1. ORGANIZATION

Howard Hughes Medical Institute ("HHMI" or the "Institute") was established for the purpose of promoting knowledge within the basic sciences, principally medical research and education, and the effective application of this knowledge for the benefit of humanity. The Institute conducts basic biomedical research at its Janelia Research Campus ("Campus") located in Loudoun County, Virginia, and at universities, hospitals, and other not-for-profit research institutions ("host institutions") throughout the U.S. under the terms of collaboration agreements.

In addition to its basic research activities, the Institute funds grants to both institutions and individuals in support of a wide range of science and research-related initiatives, including precollege and undergraduate science education, pre- and post-doctoral research fellowships, and international research activities. Most of the Institute's grant awards to individuals are fellowships administered by the awardee's institution for the benefit of the awardee.

For many years, the Institute has created science education resources for use by classroom teachers and has distributed these broadly without charge. The Institute also supports a science film initiative, which develops, produces, and disseminates science programming through broadcast television and other media channels. Film footage produced through this initiative may also be used to expand and enhance the science education resources designed for classroom use.

The Institute's investments are its principal source of financial support. The Institute's long-range investment goal is to manage the investments in a prudent manner that will support the Institute's programs in perpetuity. Most of the Institute's spending is on programs that involve long-term commitments: the Institute's medical research program at host institutions and Janelia Research Campus, in which it makes multi-year employment, budget, and other spending commitments to its Investigators and other HHMI laboratory heads, and grant program in which the Institute makes multi-year grant commitments for science education and to support research by scientists in the early stages of their academic careers. These attributes of the Institute's mode of operation present the need to balance longer-term investment growth, stabilize investment returns, and maintain liquidity.

2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

The consolidated financial statements include the accounts of the Institute's wholly owned subsidiaries, which are used primarily in connection with investment activities. All intra-company transactions and accounts have been eliminated.

Basis of Presentation

The consolidated financial statements are prepared in accordance with accounting principles generally accepted in the United States of America ("GAAP"). These principles require management to make estimates and assumptions that affect the reported amounts of assets and liabilities at the date of the consolidated financial statements and the reported revenues and expenses during the reporting period. Actual results could differ from those estimates.

Cash and Cash Equivalents

Cash and cash equivalents are recorded at amortized cost, which approximates fair value and include both U.S. and non-U.S. currency and short-term interest-bearing marketable instruments with original maturities of 90 days or less from the initial purchase date. The purchases and sales of cash equivalents are not presented on the Consolidated Statements of Cash Flows. These balances are held at the Institute's custodians, prime brokers, clearing agents, and banking institutions for investment and working capital purposes.

The total cash and cash equivalents maintained at various institutions exceeds the amount guaranteed by federal agencies and, therefore, bears some risk. The Institute has not experienced any loss due to this risk. Interest earned on cash and cash equivalents is recognized in *Net investment return* within the Consolidated Statements of Activities.

<u>Foreign Currency Translation</u>
Securities and cash denominated in foreign currencies are translated into U.S. dollar equivalents using year-end spot foreign currency exchange rates. Investment payables and receivables are valued using either spot or interpolated forward rates as applicable based on the expected settlement date. Purchases and sales of financial instruments, and their related income and expenses, are translated at the rate of exchange on the respective date of such transactions. The Institute includes realized gains/(losses) and unrealized appreciation/(depreciation) on investments and derivative financial instruments resulting from foreign currency changes in *Net investment return* on the Consolidated Statements of Activities. The Institute does not isolate that portion of the results of operations resulting from changes in foreign exchanges rates on securities and derivative contracts from the fluctuations arising from changes in market price of securities and derivative contracts held. Such fluctuations are included in *Net investment return*. The Institute may be exposed to risks that the exchange rate of the U.S. dollar relative to other currencies may change in a manner that has an adverse effect on the reported value of that portion of the Institute's assets or liabilities that is denominated in currencies other than the U.S. dollar.

<u>Escrowed Bond Proceeds</u>
The Institute issued approximately $51.8 million of capital appreciation bonds in June 2019 to finance the construction costs of an apartment building at the Janelia Research Campus in Loudoun County, Virginia. Funds received from the initial issuance and any income from investments of these funds are maintained in a separate segregated trust account established by the Trustee. These funds are restricted and used to finance, refinance, or reimburse the Institute for costs of the construction project, including any costs of issuing the bonds. The Institute invests the funds on deposit in securities issued and explicitly guaranteed as to principal and interest by the U.S. or any agency or instrumentality thereof and repurchase agreements in respect of U.S. Government Securities. During fiscal year 2021, the Institute used the remaining proceeds received from the original bond issuance, including income earned from investments in fixed income securities, to continue construction of the apartment building, which was completed on March 31, 2021.

<u>Restricted Funds</u>
The Institute generally does not accept donations or other contributions, but has made several exceptions, including accepting a very limited number of grants from other not-for-profit organizations to support specific research activities at the Janelia Research Campus, and accepting funding from a few other not-for-profit organizations that are collaborating with the Institute on grant programs. These grants entail restrictions on how the funds may be used. As a result, there are restrictions on net assets, which the Institute considers immaterial to its financial statements.

Intellectual Property

The Institute receives licensing fees and royalty income in connection with the commercialization of intellectual property created by its scientists. Licensing fees and royalty income are recorded as revenue in the Consolidated Statements of Activities as performance obligations are satisfied under the terms of the contracts.

In addition, the Institute may indirectly have equity interests in startup companies formed to commercialize inventions created by its Investigators. Such equity interests are held in the host institution's name for the benefit of HHMI until the host institution disposes of that interest. As a result, recognition of value related to such equity interests is recorded only upon notification to HHMI by the host institution that its equity interest has been sold, and the Institute's share of the proceeds has been determined. No value for such equity interests is carried on the Consolidated Statements of Financial Position.

The Institute may in the future directly hold equity or other interests in some startup companies formed to commercialize inventions created by its group leaders or other researchers at the Janelia Research Campus. In this event, the equity or other interests would be managed by the Institute's Investment Department and appropriately recorded in the consolidated financial statements.

Investments

Investments are presented at fair value in accordance with GAAP. When available, investments are valued based on quoted market prices. In cases where market quotations are not available, management relies on appraisals, assumptions, and other methods to estimate fair value. For certain alternative investments, management uses Net Asset Value ("NAV") as the practical expedient to determine fair value. The Institute's investment valuation policies are discussed in detail in Note 4.

Net realized and the change in unrealized gains and losses are calculated using the average cost of investments and are recognized in *Net investment return in* the Consolidated Statements of Activities. Investment income, including interest, is accrued as earned. Dividend income is recorded on the ex-dividend date.

Derivatives, such as futures, options, swap contracts, and foreign currency forward contracts are recorded at fair value with the resulting gain or loss recognized in the *Net investment return* financial statement line item.

Land, Buildings, Laboratory Space, and Equipment

Costs of constructing and renovating laboratory space occupied by Investigators or other HHMI laboratory heads, and improvements in excess of the Institute's capitalization threshold, are currently capitalized and amortized over the lesser of 5 years or the remaining appointment term of the Investigator or other HHMI laboratory head for whom renovations are being made. Buildings, building improvements, and equipment having a useful life of more than one year and a unit cost that exceeds the Institute's capitalization threshold are capitalized. Interest paid on construction debt is capitalized as a component of the building cost. Repair and maintenance costs are expensed as incurred.

Depreciation is computed using the straight-line method over the estimated useful lives as follows:

Classification	Estimated Useful Life (years)
Equipment and furniture	5
Leasehold improvements	5-10
Land improvements	20
Buildings	35

Upon the sale or retirement of land, buildings, laboratory space, or equipment, the related cost and accumulated depreciation are removed from the Consolidated Statements of Financial Position and the resulting gains or losses are reflected in the Consolidated Statements of Activities.

Operating Leases

The Institute appoints and employs selected faculty members ("Investigators") at host institutions and employs other personnel to conduct or facilitate the conduct of research at the site. The Institute determines the amount of laboratory and office space needed for its research, and under a collaboration agreement, makes direct payments to host institutions for the occupancy of space and certain host-provided services.

The Institute has determined that under GAAP, its occupancy arrangement with host institutions must be treated as operating leases. Consistent with this determination, at commencement of an Investigator's term, the Institute measures and recognizes a right-of-use ("ROU") asset, representing the Institute's right to use the underlying asset (laboratory and office space), and a lease liability, representing the Institute's obligation to make occupancy payments under the terms of the collaboration agreement with the Investigator's host institution. For purposes of recognizing ROU assets and lease liabilities associated with the Institute's occupancy arrangements, the Institute elected the practical expedient to not recognize a ROU asset or lease liability for short-term occupancy arrangements, which are those with a term of twelve months or less.

The term of the collaboration agreement with the host institution is not defined as a fixed number of years; rather, at each host site the term extends for as long as the Institute continues to support an Investigator at that host site. In accordance with GAAP, the Institute determined that the lease term should correspond to the term of the Investigator, which is currently seven years plus a two-year phase-out period, if the Investigator's term is not renewed, with the phase-out occurring immediately subsequent to the expiring term. The Institute may renew Investigator appointments for additional terms with no limitation on the number of renewals. The Institute determined it is not reasonably certain it will renew the terms of any specific existing Investigators upon expiration of their current term, and therefore, renewal and termination options are not considered in determining a lease term.

The Institute has elected as a practical expedient not to separate non-lease components (e.g., utilities, janitorial service and maintenance) from lease components and, applied this approach consistently to all host institutions. The Institute considers lease payments to include future cash payments from the Institute to the host institution directly associated with the occupancy of laboratory and office space during the remaining terms of the Investigators, inclusive of anticipated consumer price index adjustments.

The rates implicit within the Institute's occupancy arrangement are generally not determinable, and therefore, the Institute's collateralized borrowing rate is used to determine the present value of occupancy (lease) payments. The collateralized borrowing rate is subsequently reassessed if there is a modification to the occupancy-related provisions of the collaboration agreement.

Grant Commitments

The Institute awards domestic and international grants for periods generally ranging from one to five years. The Institute in its discretion may defer an award, if requested by the awardee. Deferred awards continue to be unconditional commitments for which there are no additional contingencies and are included in the grant commitment liability as of August 31, 2021. For multi-year awards, grant commitments are recorded as expenses in the Consolidated Statements of Activities in the year the grant commitment is made, and the present value of the grant commitment liability is reflected in the Consolidated Statements of Financial Position. The discount rate used to arrive at the present value of future payments is based on the rates for U.S. Treasury Notes with maturities in the years in which the payments will be made.

Insurance

The Institute generally self-insures for property and casualty risks. Third party insurance is purchased from time to time in response to specific needs.

Income Taxes

The Institute is a public charity and qualifies as a tax-exempt organization under Section 501(c)(3) of the Internal Revenue Code and equivalent state provisions, except with regard to unrelated business income which is taxable at corporate income tax rates. The Institute has estimated a provision for income taxes related to expected future unrelated business taxable income and net operating loss carryforwards expected to be utilized in future years.

Income taxes are reported under the asset and liability method, which requires the recognition of deferred tax assets and liabilities for the expected future tax consequences of events that have been included in the financial statements. Under this method, the Institute determines deferred tax assets and liabilities based on the differences between the financial statement and tax bases of assets and liabilities by using enacted tax rates in effect for the year in which the differences are expected to reverse. The effect of a change in tax rates on deferred tax assets and liabilities is recognized in income in the period that includes the enactment date.

Deferred tax assets are recognized to the extent that these assets are more likely than not to be realized. In making such a determination, the Institute considers all available positive and negative evidence, including future reversals of existing taxable temporary differences, projected future taxable income, tax-planning strategies, and results of recent operations. The Institute records a valuation allowance against deferred tax assets to the extent that the Institute estimates that they are 50 percent or less likely to be realized. The Institute assesses the valuation allowance annually and any changes to the valuation allowance are recorded as a component of the provision for income taxes in the year recognized.

In accordance with the guidance on accounting for uncertainty in income taxes, management regularly evaluates its tax positions and does not believe the Institute has any uncertain tax positions that result in a material impact on the Institute's consolidated financial position or change in total net assets. The

Institute is subject to routine audits by taxing jurisdictions. The Institute believes it is no longer subject to income tax examinations for fiscal years prior to August 31, 2017.

Recent Accounting Pronouncements

Standard adopted in the current year:

In August 2018, the FASB issued ASU 2018-14, Compensation—Retirement Benefits—Defined Benefit Plans—General (Topic 820): *Disclosure Framework—Changes to the Disclosure Requirements for Defined Benefit Plans*. The amendments in this ASU modify certain disclosure requirements for employers that sponsor defined benefit pension or other postretirement plans by removing disclosures that no longer are considered cost beneficial, clarifying the specific requirements of disclosures and adding disclosure requirements identified as relevant. The amendments in this ASU are effective for fiscal years ending after December 15, 2020 and should be applied on a retrospective basis to all periods presented. The Institute adopted ASU 2018-14 in fiscal year 2021 with retrospective application to fiscal year 2020.

Standard effective in future years:

In March 2020, the FASB issued ASU 2020-04, Reference Rate Reform (Topic 848), *Facilitation of the Effects of Reference Rate Reform on Financial Reporting*, an update that provides optional expedients and exceptions for applying GAAP to contracts, hedging relationships, and other transactions affected by reference rate reform if certain criteria are met. The amendments in this update apply only to contracts, hedging relationships, and other transactions that reference LIBOR or another reference rate expected to be discontinued because of reference rate reform. This accounting standards update is intended to ease the process of migrating away from LIBOR to new reference rates. The standard was effective upon issuance and generally can be applied through December 31, 2022. The Institute is evaluating the impact of the new standard to its consolidated financial statements and disclosures.

3. LIQUIDITY AND AVAILABILITY OF RESOURCES

The Institute's financial assets available within one year of the date of the Consolidated Statements of Financial Position for general expenditures, construction costs, liabilities, and other obligations as they come due are as follows:

(In thousands)

	August 31, 2021	August 31, 2020
Total assets	$ 29,343,107	$ 23,840,457
Less:		
Investments not available for redemption within one year	(14,100,721)	(10,372,333)
Right-of-use assets	(138,227)	(151,670)
Deferred income taxes	-	(3,527)
Prepaid expenses and other assets	(104,503)	(71,315)
Land, buildings, laboratory space, and equipment, net	(765,037)	(763,209)
Total financial assets at fiscal-year end	14,234,619	12,478,403
Other liquidity sources - lines of credit	-	400,000
Financial assets available to meet cash needs for general expenditures within one year	$ 14,234,619	$ 12,878,403

As part of the Institute's liquidity management, it has a policy to manage the endowment in a manner that will fund the programs and supporting functions in perpetuity and balance long-term growth with the need for stability of investment returns and liquidity. The Institute's investment approach for the endowment is governed by a risk-based asset framework that seeks to assure the sum of the parts is consistent with the Institute's long-term spending goals and tolerance for risk. The endowment's asset allocation framework consists of four Asset Groups: High Risk/Return Assets, Global Equity, Diversifying Assets, and Bonds, each with its own defined risk and return terms. The Institute's long-term investment goal for the endowment is to maximize investment returns without materially exceeding the risk inherent in its strategic benchmark, which consists of a portfolio invested 65% in the broad stock market and 35% in the bond market. As of August 31, 2021 and 2020, respectively, the Institute had approximately $14.2 billion and $12.9 billion of financial assets available within one year to meet cash needs for general expenditures, construction costs, liabilities, and obligations as they come due. No financial assets are subject to restrictions that make them unavailable for general expenditure within one year of the date of the Consolidated Statement of Financial Position.

4. INVESTMENTS

The Institute elected to apply the fair value option of ASC 825, "Financial Instruments," to its portfolio of investments. As such, Investments, as shown on the Consolidated Statements of Financial Position, are presented at fair value in accordance with GAAP. The investment categories, valuation methodology, fair value hierarchy, and related commitments for fiscal years August 31, 2021 and 2020 are discussed below.

Investment Categories and Valuation Policy

Investments are categorized by asset class and valued as described below:

Equity investments primarily consist of direct ownership of public and private companies in the form of common stock. Investments in listed securities on exchanges are typically valued based on last quoted market prices on the last trading date of the principal market on or before August 31. Investments in private companies are valued based on the best available information in the circumstance and may require significant management judgment. The majority of the Institute's equity investments are publicly traded.

Fixed income securities primarily consist of actively traded debt instruments including U.S. Treasury Notes/Bonds/Bills, and private placement debt. Fixed income securities, excluding U.S. Treasury Bills, are valued by independent pricing sources, broker dealers or pricing models that factor in, where applicable, recently executed transactions, interest rates, bond or credit default spreads and volatility. The U.S. Treasury Bills are recorded at amortized cost, which approximates fair value. External investment managers primarily value certain private placement debt that is directly linked with equity ownership in alternative investments. These values are adjusted, if applicable, by management as described under *Valuation Methodology*. The U.S. Treasury issues the majority of the Institute's fixed income investments.

Preferred securities primarily consist of direct ownership of public and private companies in the form of preferred stock. Investments in publicly traded companies are valued based on readily available market quotations obtained from independent pricing sources. Investments in private companies with an available OTC market are valued using quotes from broker dealers or pricing models that factor in, where applicable, recently executed transactions, interest rates, bond or credit default spreads and volatility. Investments in private companies with no OTC market are valued based on the best available information in the circumstance and may require significant management judgment.

Convertible securities primarily consist of direct ownership of public and private companies in the form of preferred stock or bonds that contain a conversion covenant, usually into common stock. Investments in publicly traded companies are valued based on readily available market quotations obtained from independent pricing sources. Investments in private companies with an available OTC market are valued using quotes from broker dealers or pricing models that factor in, where applicable, recently executed transactions, interest rates, bond or credit default spreads and volatility. Investments in private companies with no OTC market are valued based on the best available information in the circumstance and may require significant management judgment.

Alternative investments represent interests in funds, limited partnerships, and other pooled vehicles. The Institute classifies these investments in the following sub-categories:

- *Private equity investments* include venture capital, growth, buyout, and energy-related investments usually structured as limited partnerships or other similar pass-through vehicles. In general, these investments are held to the term of the investment and have limited liquidity. Distributions from these investments are primarily received through liquidation of the underlying assets.
- *Hedged equity investments* include long/short equity strategies, which are managed with moderate net exposure and event-driven strategies with the objective of achieving long-term equity-like returns with lower volatility. In most cases, these funds are redeemable at periodic intervals.
- *Distressed and credit sensitive investments* include long credit, long/short credit, and distressed credit strategies. In general, these investments are held to the term of the investment and have limited liquidity. Distributions from these investments are primarily received through liquidation of the underlying assets.
- *Equity commingled investments* include equity funds that invest in primarily long public securities traded on major stock exchanges. In most cases, these funds are redeemable at periodic intervals.
- *Real asset investments* include private market investments secured by hard assets such as real estate, power plants, commodity reserves and other assets. These investments are usually structured as limited partnerships or other similar pass-through vehicles. In general, these investments are held to the term of the investment and have limited liquidity. Distributions from these investments are primarily received through liquidation of the underlying assets.
- *Market neutral investments* include long/short equity strategies which are managed with a close to zero net exposure and multi-strategy relative value investment approach with the objective to generate positive returns above the risk-free rate that have little or no correlation with public equities. In most cases, these funds are redeemable at periodic intervals.

The Institute has an active co-investment program. Investments held through this program are classified in one of the above alternative categories if they are structured as limited partnerships or other similar pass-through vehicles. If the Institute owns the co-investment directly, the investment is categorized as a private company investment in equity, fixed income, preferred securities, or convertible securities, as applicable.

The fair value of alternative investments is primarily based on the NAV reported or calculated by the respective external investment managers and is adjusted, if applicable, as described under *Valuation Methodology*. Private company co-investments and funds that do not report NAV are valued based on the best available information in the circumstance and may require significant management judgment.

Derivatives are used by the Institute to manage its exposure to certain risks relating to ongoing business and investment operations. Derivatives include futures contracts, OTC foreign currency forward contracts, options, contracts for difference, participatory contracts, and various swap contracts. The fair value of derivative investments is determined based on the type of derivative. Listed futures and options, and foreign currency forward contracts are valued by independent pricing sources. Contracts for difference and participatory notes are equity market access products and are typically valued based on changes in price of the underlying equity, adjusted for any financing costs. Swaps and other OTC derivatives are valued by the calculation agent of the contract, which is usually the counterparty to the contract, or by independent pricing sources where available, based on the terms of the contract and other observable inputs.

Short positions are used by the Institute in anticipation of a decline in the market value of an investment. In a physical short sale, the Institute is required to pay the lender any dividends or interest, which accrues during the period of the loan. The Institute is then obligated to return the security borrowed by purchasing it at market price at the time of replacement. The price of the security at replacement may differ from the price at which the security was sold. The Institute will incur a loss if the price of the security increases between the date of the short sale and the date of the cover of the short sale. This loss may be unlimited. The Institute will realize a gain if the security declines in price between those dates. The amount of any gain will be decreased, and the amount of any loss increased, by the amount of any premium, dividends or interest the Institute may be required to pay in connection with a short sale.

Valuation Methodology

Valuation techniques applied to the Institute's investments can include a combination of both observable and unobservable inputs. The Institute's investments in equities, fixed income securities, preferred securities and convertible securities are valued based on quoted market prices in active markets on a trade-date basis or by independent pricing sources, whenever available. Where such inputs do not exist, fair value measurements are based on the best available information such as broker quotes, models or other valuation methodologies that require varying degrees of judgment.

NAV is used as a practical expedient in determining fair value for investments which (a) do not have a readily determinable fair value and (b) are an investment company as defined under ASC 946, *Financial Services – Investment Companies*, or have attributes of an investment company.

The Institute's external investment managers, administrators, and general partners in accordance with their policies as described in their respective financial statements and offering memoranda report the NAV. For certain investments, the most recent NAV reported is adjusted for cash flows and significant known valuation changes, if any, of its related portfolio through August 31, 2021 and 2020 respectively. Management reviews the valuation policies and financial reporting of managers and performs due diligence, as applicable, to obtain an understanding of the valuation processes used by the third party for suitability and appropriateness for use in the Institute's financial statements. Management believes the Institute's allocated share of the carrying amount of these alternative investments is a reasonable estimate of fair value. The majority of the Institute's alternative investments qualify for use of NAV as a practical expedient in accordance with ASC 820 – *Fair Values Measurements and Disclosures*.

For the remaining alternative investments, the Institute considers various factors to estimate fair value including the timing of the transaction, market factors, comparable transactions, company performance and company projections. The selection of an appropriate valuation technique may be affected by the availability and general reliability of relevant inputs. These fair value estimates are subject to the review and approval of the Institute's Valuation Committee.

The Institute's Valuation Committee is comprised of the Chief Investment Officer, the Managing Director - Head of Investment Operations, the Director, Investment Operations, and the Director, Investment Fund Services. The Institute's overall valuation methodology and its application is subject to review and oversight by the Valuation Committee, who meet quarterly to review and assess the valuation techniques applied and to consider new methodologies or recommend changes as appropriate. Once selected for an investment, valuation techniques are consistently applied. The Valuation Committee has sole authority to make overrides to the current valuation methodology or technique for a specific investment. A change in a valuation technique or its application will be made only if the change results in a measurement that management believes is more representative of fair value in the circumstance. The Institute did not change its valuation methodology for fiscal years ending August 31, 2021 and 2020. Although the Valuation Committee believes its valuation methods are appropriate and consistent, these methods may produce a fair value estimate that may not be indicative of the ultimate net realizable value, or reflective of future fair values and such differences could be material.

<u>Fair Value Hierarchy</u>
The fair value hierarchy, as required by ASC 820, prioritizes the use of market-based information over entity-specific information and establishes a three-level hierarchy for fair value measurement based on the transparency of information, such as the pricing source used in the valuation of an asset or liability as of the measurement date. It consists of observable and unobservable inputs at three levels. Observable inputs are based on market data obtained from sources independent of the reporting entity; unobservable inputs are based on the best information available in the circumstances.

- Level 1 inputs consist of quoted prices in active markets for identical assets or liabilities.

- Level 2 inputs are from sources other than quoted prices that are observable for an asset or liability, either directly or indirectly. Level 2 inputs include quoted prices for similar assets or liabilities in active markets, interest rates and yield curves observable at commonly quoted intervals, volatilities, prepayment speeds, loss severities, credit risks, default rates, and market corroborated inputs that are derived principally from or corroborated by observable market data by correlation or other means.

- Level 3 inputs are unobservable inputs for the asset or liability. They are used to measure fair value when observable inputs are not available, including situations in which there is little, if any, market activity for the asset or liability at the measurement date.

The asset or liability's fair value measurement level within the fair value hierarchy is based on the lowest level of any input that is significant to the fair value measurement.

The following tables present the financial instruments carried at fair value as of August 31, 2021 and 2020 according to the valuation hierarchy defined above:

August 31, 2021
(In thousands)

	Quoted Market Prices (Level 1)	Other Observable Inputs (Level 2)	Unobservable Inputs (Level 3)	Total Fair Value
Assets				
Cash equivalents[1]	$ -	$ 519,854	$ -	$ 519,854
Repurchase agreements	-	299,523	-	299,523
Investments:				
Equity	2,734,761	-	65,308	2,800,069
Fixed income securities	-	2,819,119	16,431	2,835,550
Preferred securities	14,131	8,890	20,768	43,789
Convertible securities	-	7,630	-	7,630
Alternative investments	-	-	244,668	244,668
Derivatives	10,476	7,938	-	18,414
Sub-total of investments	2,759,368	2,843,577	347,175	5,950,120
Alternative investments measured under the NAV-practical expedient				21,116,998
Total investments	2,759,368	2,843,577	347,175	27,067,118
Total	2,759,368	3,662,954	347,175	27,886,495
Deferred compensation plan assets	62,751	-	8,644	71,395
Total assets at fair value	$ 2,822,119	$ 3,662,954	$ 355,819	$ 27,957,890
Liabilities				
Investments and derivatives:				
Equity short positions	$ 169,243	$ -	$ -	$ 169,243
Preferred short positions	-	-	-	-
Fixed income short positions	11,831	-	-	11,831
Derivatives	28,473	195,576	-	224,049
Repurchase obligations	-	300,781	-	300,781
Total liabilities at fair value	$ 209,547	$ 496,357	$ -	$ 705,904

[1]Cash equivalents are comprised of U.S. Treasury Bills and repurchase agreements with original maturities of 90 days or less.

August 31, 2020
(In thousands)

	Quoted Market Prices (Level 1)	Other Observable Inputs (Level 2)	Unobservable Inputs (Level 3)	Total Fair Value
Assets				
Cash equivalents	$ -	$ 956,562	$ -	$ 956,562
Repurchase agreements	-	603,892	-	603,892
Investments:				
Equity	2,281,817	-	73,878	2,355,695
Fixed income securities	-	1,518,747	16,059	1,534,806
Preferred securities	20,745	4,782	17,832	43,359
Convertible securities	-	1,245	-	1,245
Alternative investments	-	-	197,612	197,612
Derivatives	484	35,132	-	35,616
Sub-total of investments	2,303,046	1,559,906	305,381	4,168,333
Alternative investments measured under the NAV-practical expedient				16,597,189
Total investments	2,303,046	1,559,906	305,381	20,765,522
Total	2,303,046	3,120,360	305,381	22,325,976
Deferred compensation plan assets	51,684	-	7,946	59,630
Total assets at fair value	$ 2,354,730	$ 3,120,360	$ 313,327	$ 22,385,606
Liabilities				
Investments and derivatives:				
Equity short positions	$ 119,667	$ -	$ -	$ 119,667
Preferred short positions	1,232	-	-	1,232
Fixed income short positions	-	-	-	-
Derivatives	9,122	248,458	-	257,580
Repurchase obligations	-	604,998	-	604,998
Total liabilities at fair value	$ 130,021	$ 853,456	$ -	$ 983,477

[1]Cash equivalents are comprised of U.S. Treasury Bills and repurchase agreements with original maturities of 90 days or less.

The following table presents the purchases and transfers for instruments classified within Level 3 of the fair value hierarchy as defined above for the years ended August 31, 2021 and 2020:

(In thousands)

Fair value measurements using significant unobservable inputs	For the year ended August 31, 2021			For the year ended August 31, 2020		
	Purchases	Transfers in	Transfers out	Purchases	Transfers in	Transfers out
Deferred compensation funds	$ 453	$ -	$ -	$ 756	$ -	$ -
Investments:						
Equity	5,090	-	-	3,737	-	-
Preferred securities	-	-	-	328	-	-
Alternative investments	5,274	-	-	950	-	-
Total investments	10,364	-	-	5,015	-	-
Totals	$ 10,817	$ -	$ -	$ 5,771	$ -	$ -

The table above excludes those investments valued using NAV as the practical expedient as outlined in ASU 2015-07, *Fair Value Measurement (Topic 820): Disclosures for Investments in Certain Entities that Calculate NAV per Share (or its Equivalent)*.

Management continuously reviews and evaluates financial reporting investment levels and modifies them as necessary. For the fiscal years ended August 31, 2021 and 2020, there were no transfers in or out of the Level 3 classification.

Level 3 Valuation Techniques and Unobservable Inputs

The following table summarizes the unobservable inputs and assumptions used for items categorized in Level 3 of the fair value hierarchy as of August 31, 2021 and 2020, respectively. For each investment category and respective valuation technique, the range of the inputs is dependent on the nature and characteristics of the investment. The range of inputs listed below represent values as of the measurement date; however, these inputs may change over time which may have a material effect on the valuation of these types of investments in the future.

August 31, 2021
(In thousands)

Asset Class	Fair Value 2021	Unobservable Inputs	Range of Inputs
Deferred compensation funds	$ 8,644		
		Risk-adjusted discount rate	3.0% - 4.45%
Equity	65,308		
		Multiple of called capital	1.3x
		Multiple of invested capital	1.9x
		Discounted earnings multiple	10.1x - 19.9x
		Multiple of money invested	2.59x
		Gross multiple of invested capital	1x
		Discounted cash flows	13.0% - 15.0%
		EBITDA multiple	8.7x
		Appraised value	Third party
Fixed income securities	16,431		
		Interest rate	0.0% - 12.2%
Preferred securities	20,768		
		Multiple of called capital	0.8x
		Multiple of money invested	2.59x
		Market multiple valuation	4.0x - 9.0x
		Appraised value	Third party
Alternatives	244,668		
		Weighted average cost of capital	15.5%
		Exit value multiple	16.0x
		Control premium	20.0%
		Revenue multiples	4.5x - 5.3x
		Cost basis multiple	4.02x
		EBITDA multiples	9.0x - 16.0x
		Market multiple valuation	4.0x - 9.0x
		Discounted cash flows	10% - 15%
		Multiple on invested capital	1.0x - 1.5x
		Appraised value	Third party
Total	$ 355,819		

August 31, 2020
(In thousands)

Asset Class	Fair Value 2020	Unobservable Inputs	Range of Inputs
Deferred compensation funds	$ 7,946		
		Discount rate	3.00% - 4.25%
Equity	73,878		
		EBITDA multiple	6.9x - 14.9x
		Earning multiples discount	10% - 15%
		Discount rate	0% - 12%
Fixed income	16,059		
		Interest rate	0% - 10%
		EBITDA multiple	11.6x
Preferred securities	17,832		
		EBITDA multiple	6.0x - 17.5x
		Discount rate	10% - 12%
Alternatives	197,612		
		EBITDA multiple	8.7x - 15.0x
		Independent appraisal	n/a
		Discount rate	10% - 15%
Total	$ 313,327		

Alternative Investments at NAV

The following tables summarize investments for which the Institute uses NAV as the practical expedient and the respective unfunded commitments and redemption terms as of August 31, 2021 and 2020, respectively:

August 31, 2021
(In thousands)

	Fair Value	Unfunded Commitment	Redemption Terms & Restrictions
Private equity	$ 7,161,042	$ 2,576,253	Not redeemable and held for the life of the investment.
	797	-	Investments with revolving lockup provisions are redeemable with advance notice of 90 days prior to the next lockup expiration date.
Hedged equity	2,454,399	-	Lockup provisions may include one-time or revolving terms ranging from 1-3 years. Investments with expired one-time lockup or no lockup provisions are redeemable on a periodic basis with advance notice of 30-180 days. Investments with revolving lockup provisions are redeemable with advance notice of 60-90 days prior to the next lockup expiration date. Special investments, a.k.a side pockets, are redeemable
	318,873	-	Not redeemable and held for the life of the investment.
Distressed & credit sensitive	1,835,659	1,575,270	Not redeemable and held for the life of the investment.
	653,682	-	Lockup provisions may include a one-time term of up to 1 year. Investments with expired one-time lockup or no lockup provisions are redeemable on a periodic basis with advance notice of 30-90 days.
Equity commingled	5,354,358	-	Lockup provisions may include one-time or revolving terms ranging from 1-3 years. Investments with expired one-time lockup or no lockup provisions are redeemable on a periodic basis with advance notice of 30-180 days. Investments with revolving lockup provisions are redeemable with advance notice of 30-90 days
	287,309	115,000	Not redeemable and held for the life of the investment.
Real assets	896,519	514,702	Not redeemable and held for the life of the investment.
	127,021	-	Investments with expired one-time lockup or no lockup provisions are redeemable on a periodic basis with advance notice of 30 days.
Market neutral	2,027,339	-	Investments with expired one-time lockup or no lockup provisions are redeemable on a periodic basis with advance notice of 5-100 days.
Total alternative investments	$ 21,116,998	$ 4,781,225	

August 31, 2020
(In thousands)

	Fair Value as of August 31, 2020	Unfunded Commitment	Redemption Terms & Restrictions
Private equity	$ 4,293,790	$ 2,274,533	Not redeemable and held for the life of the investment.
	473,608	166,241	Investments with revolving lockup provisions are redeemable with advance notice of 90 days prior to the next lockup expiration date.
Hedged equity	2,161,293	-	Lockup provisions may include one-time or revolving terms ranging from 1-3 years. Investments with expired one-time lockup or no lockup provisions are redeemable on a periodic basis with advance notice of 30-180 days. Investments with revolving lockup provisions are redeemable with advance notice of 60-90 days prior to the next lockup expiration date. Special investments (side pockets) are redeemable upon liquidation of the designated investment.
	146,101	60,000	Not redeemable and held for the life of the investment.
Distressed & credit sensitive	1,701,579	1,357,520	Not redeemable and held for the life of the investment.
	504,612	64,750	Lockup provisions may include a one-time term of up to 1 year. Investments with expired one-time lockup or no lockup provisions are redeemable on a periodic basis with advance notice of 30-90 days.
Equity commingled	4,362,456	150,000	Lockup provisions may include one-time or revolving terms ranging from 1-3 years. Investments with expired one-time lockup or no lockup provisions are redeemable on a periodic basis with advance notice of 30-180 days. Investments with revolving lockup provisions are redeemable with advance notice of 30-90 days prior to the next lockup expiration date.
Real assets	797,683	476,348	Not redeemable and held for the life of the investment.
	78,392	-	Investments with expired one-time lockup or no lockup provisions are redeemable on a periodic basis with advance notice of 30 days.
Market neutral	2,077,656	-	Investments with expired one-time lockup or no lockup provisions are redeemable on a periodic basis with advance notice of 5-100 days.
Fixed Income Securities	19	2,972	Not redeemable and held for the life of the investment.
Total alternative investments	$ 16,597,189	$ 4,552,364	

As noted above, the Institute has made contractual commitments to fund various investments. The Institute has unfunded commitments totaling approximately $4.8 billion and $4.6 billion to fund investments in non-public entities as of August 31, 2021 and 2020, respectively. Not included in the tables above are unfunded commitments of approximately $0.1 billion and $0.1 billion as of August 31, 2021 and 2020, respectively, related to investments valued using a method other than NAV. The Institute expects these commitments to be called over the next 1 to 7 years.

Obligations under Security Lending Agreements
The Institute may lend its securities to approved borrowers to earn additional income. A lending agent in accordance with a securities lending agreement administers the Institute's securities lending activities. Security loans generally do not have stated maturity dates, and the Institute may recall a security at any time. The Institute receives collateral in the form of cash, government debt securities, corporate debt securities, equity securities, and other types of securities as agreed to in the securities lending agreement. Collateral for loans of domestic securities and foreign securities that are denominated and payable in dollars are collateralized at a minimum of 102% and other foreign securities are collateralized at a minimum of 105% of the value of the securities on loan. Collateral is maintained over the life of the loan in an amount not less than the value of loaned securities; any additional collateral required due to changes in security values is delivered to the Institute the next business day. Cash collateral is invested in accordance with investment guidelines defined by the securities lending agreement. Additionally, the lending agent indemnifies the Institute against losses resulting from borrower default and against losses resulting from the investment of cash collateral in repurchase transactions resulting from counterparty default. Although risk is mitigated by the collateral and indemnification, the Institute could experience a delay in recovering its securities and a possible loss of income or value if the borrower fails to return the securities, collateral investments decline in value, and the lending agent fails to perform. Securities lending revenue consists of earnings on invested collateral and borrowing fees, net of any rebates to the borrower, compensation to the lending agent, and other administrative costs. In accordance with GAAP, cash collateral and investments made with cash collateral are reflected in the accompanying financial statements, but collateral received in the form of securities is not. The value of cash collateral was $59.9 million and $44.4 million as of August 31, 2021 and 2020, respectively. The market value of loaned securities was $204.7 million and $262.9 million as of August 31, 2021 and 2020, respectively, and are included in the Consolidated Statements of Financial Position in *Investments and derivative assets*. The market value of cash and non-cash collateral was $220.5 million and $279.1 million as of August 31, 2021 and 2020, respectively. Income from securities lending activities totaled approximately $0.5 million and $0.8 million for August 31, 2021 and 2020, respectively, and is included in *Net investment return*.

5. DERIVATIVES

The Institute invests in derivative financial instruments to control market risks, manage its portfolio exposure, reduce investment implementation costs, and enhance returns. Derivatives are recorded at fair value with the resulting gain or loss recognized in the Consolidated Statements of Activities. The Institute seeks to transact with counterparties that are operating under master netting agreements for derivative trades. These agreements may allow the Institute to offset amounts owed by the counterparty with amounts payable to the same counterparty. These agreements may permit net settlement of multiple transactions with that counterparty. As a result of investing in derivative financial instruments, the Institute is exposed to potential credit-related losses in the event of nonperformance by counterparties. The Institute limits its exposure by evaluating the creditworthiness of potential counterparties before investing.

Swap, OTC option, forward contracts and other OTC derivative contracts expose the Institute to credit risk arising from the potential inability of counterparties to perform under the terms of the contracts. The notional amounts of these contracts do not represent the Institute's risk of loss due to counterparty nonperformance. The Institute's exposure to credit risk associated with counterparty nonperformance for these contracts is limited to the fair value of such contracts and any related collateral placed with the counterparty, after enforcing any master netting agreements with counterparties that allow the Institute to offset amounts owed by the counterparty with amounts payable to the same counterparty. As of August 31, 2021, the aggregate fair value of all derivative contracts by counterparty after applying netting arrangements and before including the effects of collateral that are in a net asset position is insignificant, thus the Institute's credit exposure to each counterparty is considered immaterial.

Derivatives contracts are subject to various risks similar to non-derivative instruments. For non-exchange traded derivatives under standard derivatives agreements, the Institute may be required to post collateral for initial margin and also variation margin in the event of a net liability position exceeding certain amounts with the counterparty. Additionally, the counterparty may, upon providing notice and allowing for any applicable cure period, terminate derivatives contracts if the Institute fails to maintain sufficient asset coverage for its contracts or its net assets decline by stated percentages. The Institute posted collateral as of August 31, 2021 and 2020 of approximately $144.4 million and $118.6 million, respectively, in the normal course of business and these amounts are included in *Due from Brokers* on the Consolidated Statements of Financial Position. The Institute received no collateral related to derivatives contracts as of August 31, 2021 and 2020.

The following tables present the derivatives held as of August 31, 2021 and 2020, respectively, by their primary underlying risk exposure. These derivatives are not designated as hedging instruments under ASC 815, *Derivatives and Hedging*.

(In thousands)

Primary Risk Exposure	As of August 31, 2021: Gross derivative assets	As of August 31, 2021: Gross derivative liabilities	For the year ended August 31, 2021: Net realized gains/(losses)	For the year ended August 31, 2021: Net unrealized gains/(losses)
Equity Instruments				
Equity futures	$ 10,476	$ 28,473	$ (169,408)	$ (8,875)
Equity swaps	346	42	(9,057)	(878)
Contracts for difference	2,712	1,674	(15,354)	1,633
Total equity instruments	13,534	30,189	(193,819)	(8,120)
Fixed income instruments				
Fixed income futures	-	-	(1,093)	(484)
Option on interest rate swap	278	-	-	(526)
Interest rate swaps	-	182,273	-	55,291
Total fixed income instruments	278	182,273	(1,093)	54,281
Currency instruments				
Currency exchange contracts	4,602	11,587	27,486	(30,636)
Total currency instruments	4,602	11,587	27,486	(30,636)
Total	$ 18,414	$ 224,049	$ (167,426)	$ 15,525

The above derivative assets and liabilities are included in *Investments and derivative assets* and *Investments and derivative liabilities*, respectively, on the Consolidated Statements of Financial Position. Net realized gains/(losses) and Net unrealized gains/(losses) are included in *Net investment return* on the Consolidated Statements of Activities.

(In thousands)

	As of August 31, 2020		For the year ended August 31, 2020	
Primary Risk Exposure	Gross derivative assets	Gross derivative liabilities	Net realized gains/(losses)	Net unrealized gains/(losses)
Equity Instruments				
Equity futures	$ -	$ 9,122	$ 18,137	$ (9,122)
Equity swaps	1,527	344	(7,303)	1,474
Contracts for difference	669	1,264	(15,418)	(1,381)
Total equity instruments	2,196	10,730	(4,584)	(9,029)
Fixed income instruments				
Fixed income futures	484	-	1,996	484
Interest rate swaps	-	237,565	-	(41,447)
Total fixed income instruments	484	237,565	1,996	(40,963)
Currency instruments				
Currency exchange contracts	32,936	9,285	(18,665)	28,052
Total currency instruments	32,936	9,285	(18,665)	28,052
Total	$ 35,616	$ 257,580	$ (21,253)	$ (21,940)

The above derivative assets and liabilities are included in *Investments and derivative assets* and *Investments and derivative liabilities*, respectively, on the Consolidated Statements of Financial Position. Net realized gains/(losses) and Net unrealized gains/(losses) are included in *Net investment return* on the Consolidated Statements of Activities.

The following tables reflect the Institute's net exposure to various counterparties subject to master netting agreements, where applicable, as of August 31, 2021 and 2020, respectively:

As of August 31, 2021
(In thousands)

	Gross Assets	Gross Liabilities	Net	Collateral Posted (Received)	Net Exposure
Counterparty A	$ 2,790	$ 35,337	$ (32,547)	$ -	$ (32,547)
Counterparty B	2	-	2	-	2
Counterparty C	-	-	-	-	-
Counterparty D	-	-	-	-	-
Counterparty E	1,255	524	731	10,080	10,811
Counterparty F	3,429	85,077	(81,648)	26,390	(55,258)
Counterparty G	4	263	(259)	-	(259)
Counterparty H	-	53,446	(53,446)	47,905	(5,541)
Counterparty I	346	42	304	2,526	2,830
Counterparty J	-	20,497	(20,497)	-	(20,497)
Counterparty K	112	390	(278)	-	(278)
Counterparty L	10,476	28,473	(17,997)	57,500	39,503
Total	$ 18,414	$ 224,049	$ (205,635)	$ 144,401	$ (61,234)

The above derivative assets and liabilities are included in *Investments and derivative assets* and *Investments and derivative liabilities*, respectively, on the Consolidated Statements of Financial Position. Securities and cash collateral are included in *Due from Brokers* on the Consolidated Statements of Financial Position.

As of August 31, 2020
(In thousands)

	Gross Assets	Gross Liabilities	Net	Collateral Posted (Received)	Net Exposure
Counterparty A	$ -	$ 43,273	$ (43,273)	$ 3,058	$ (40,215)
Counterparty B	2	4	(2)	-	(2)
Counterparty C	-	-	-	-	-
Counterparty D	-	-	-	-	-
Counterparty E	433	794	(361)	14,130	13,769
Counterparty F	25,252	99,283	(74,031)	6,600	(67,431)
Counterparty G	4,110	3,233	877	-	877
Counterparty H	-	67,826	(67,826)	67,558	(268)
Counterparty I	1,527	344	1,183	3,470	4,653
Counterparty J	-	31,357	(31,357)	-	(31,357)
Counterparty K	3,808	2,345	1,463	-	1,463
Counterparty L	484	9,121	(8,637)	23,815	15,178
Total	$ 35,616	$ 257,580	$ (221,964)	$ 118,631	$ (103,333)

The above derivative assets and liabilities are included in *Investments and derivative assets* and *Investments and derivative liabilities*, respectively, on the Consolidated Statements of Financial Position. Securities and cash collateral are included in *Due from Brokers* on the Consolidated Statements of Financial Position.

Derivative notional amounts and values as of August 31, 2021 and 2020 are indicative of the Institute's exposure to derivatives for the years then ended.

Foreign Exchange Forward Contracts
Foreign exchange forward contracts are over-the-counter contractual agreements primarily used to sell or buy certain amounts of foreign currencies to hedge foreign currency risk or for speculating for investment returns in the foreign currency market. The notional value of open forward contract purchases and sales totaled approximately $449.5 million and $218.7 million, respectively, as of August 31, 2021, and $677.9 million and $569.5 million, respectively, as of August 31, 2020.

Futures
Futures contracts are commitments to purchase or sell a financial instrument at a stated time and price in the future. They are generally used to increase or decrease exposure to a specific market or investment product. These contracts are settled daily to reflect the changes in their market values.

As of August 31, 2021 and 2020, the Institute had entered into various futures contracts with notional exposures as follows:

(In thousands)

	2021		2020	
	Buy	Sell	Buy	Sell
Fixed income	$ -	$ -	$ 232,215	$ (46,785)
Equity	-	(849,284)	-	(262,469)
Total	$ -	$ (849,284)	$ 232,215	$ (309,254)

Contracts for Difference
Contracts for difference are agreements between a buyer and a seller to exchange the difference between the opening value of a share, currency, commodity, index or other tradable financial instrument and its closing value at the end of the contract. Contracts for difference are used by the Institute for gaining financial exposure to an underlying security or index without the need to own the underlying shares. As of August 31, 2021 and 2020, the Institute had entered into various contracts for difference with notional exposures at fair values as follows:

(In thousands)

	2021		2020	
	Buy	Sell	Buy	Sell
Equity indexes	$ 77,204	$ (161,439)	$ 17,760	$ (98,174)

Equity Swaps
Equity swaps are exchanges of cash flows in which at least one of the sides is an equity instrument, index, or basket of equities. An equity instrument is a measure of the performance of an individual stock or a basket of stocks. The notional amount of the equity swaps was $7.7 million and $87.8 million as of August 31, 2021 and 2020, respectively.

Debt-related Interest Rate Swaps
An interest rate swap is a derivative in which one party exchanges a stream of interest payments with another party's stream of cash flows. The Institute uses interest rate swap agreements to

manage fixed or floating assets and liabilities. Under the terms of the current agreements, the Institute pays a fixed interest rate, determined at inception, and receives a variable rate on the underlying notional principal amount. Refer to Note 9 for information related to interest rates and interest expense on the bonds payable, note payable, and interest rate swaps.

The following tables present the debt-related interest rate swaps including the notional amounts, fair values as of August 31, 2021 and 2020, respectively, and unrealized gains and losses for the years then ended:

August 31, 2021
(In thousands)

		As of August 31, 2021		For the year ended August 31, 2021	
Debt-related interest-rate swaps:	Termination Date	Notional Amount	Gross Derivative (Assets)/Liabilities[1]	Unrealized Gains (Losses)[2]	Fixed Rate[3]
Janelia Research Campus Apartment B	June 1, 2043	$ 33,130	$ 6,827	$ 3,030	2.10%
Janelia Research Campus Apartment A	October 1, 2039	23,000	6,517	2,069	2.75%
Headquarters and conference center	November 1, 2036	76,500	26,565	6,982	3.48%
Headquarters and conference center expansion	March 1, 2038	83,500	28,908	7,633	3.30%
Janelia Research Campus	February 15, 2038	75,000	24,646	6,730	3.19%
	March 1, 2033	150,000	13,670	7,828	1.68%
	March 1, 2033	125,000	33,777	8,730	3.38%
	March 1, 2033	100,000	26,882	7,397	3.36%
	October 1, 2039	50,000	14,167	4,498	2.75%
Janelia Commercial Property	May 21, 2022	40,376	314	394	1.14%
Total			$ 182,273	$ 55,291	

[1]Gross derivative liabilities are included in *Investments and derivative liabilities* on the Consolidated Statements of Financial Position. Gross derivative assets are included in *Investments and derivative assets* on the Consolidated Statement of Financial Position.
[2]Unrealized losses on derivatives are included in *Net investment return* on the Consolidated Statements of Activities.
[3]The variable interest rate is reset on a weekly basis except for the note payable which is reset monthly.

August 31, 2020
(In thousands)

		As of August 31, 2020		For the year ended August 31, 2020	
Debt-related interest-rate swaps:	Termination Date	Notional Amount	Gross Derivative (Assets)/Liabilities[1]	Unrealized Gains (Losses)[2]	Fixed Rate[3]
Janelia Research Campus Apartment B	June 1, 2043	$ 33,130	$ 9,859	$ (2,445)	2.10%
Janelia Research Campus Apartment A	October 1, 2039	23,000	8,586	(1,595)	2.75%
Headquarters and conference center	November 1, 2036	76,500	33,547	(5,079)	3.48%
Headquarters and conference center expansion	March 1, 2038	83,500	36,540	(5,472)	3.30%
Janelia Research Campus	February 15, 2038	75,000	31,376	(4,879)	3.19%
	March 1, 2033	150,000	21,498	(7,160)	1.68%
	March 1, 2033	125,000	42,507	(5,582)	3.38%
	March 1, 2033	100,000	34,279	(4,906)	3.36%
	October 1, 2039	50,000	18,665	(3,467)	2.75%
Janelia Commercial Property	May 21, 2022	40,376	708	(862)	1.14%
Total			$ 237,565	$ (41,447)	

[1]Gross derivative liabilities are included in *Investments and derivative liabilities* on the Consolidated Statements of Financial Position.
[2]Unrealized gains on derivatives are included in *Net investment return* on the Consolidated Statements of Activities.
[3]The variable interest rate is reset on a weekly basis except for the note payable which is reset monthly.

Obligations under Master Repurchase Agreements

The Institute has entered into repurchase obligations as part of its overall investment strategy to manage its operational needs, lend fixed income securities and/or provide for leverage in fixed income trading. These repurchase agreements and related collateral, which consists of U.S. Treasury notes and bonds with maturity dates that range up to four years, are reflected in the Consolidated Statements of Financial Position as *Repurchase obligations* and *Securities pledged as collateral*, respectively. The Institute had the obligation to repurchase $300.8 million of marketable securities for which the Institute had provided collateral of $299.5 million to its counterparties as of August 31, 2021.

6. INVESTMENT RECEIVABLES AND PAYABLES

Investment Receivables and Payables

The following table presents the Institute's investment receivables and payables as of August 31, 2021 and 2020, respectively:

(In thousands)

	2021		2020	
	Receivables	Payables	Receivables	Payables
Securities pending settlement	$ 65,094	$ 42,365	$ 32,238	$ 37,783
Interest and dividend	10,337	-	8,797	-
Management fees	-	9,639	-	3,401
Other	-	427	-	412
Total	$ 75,431	$ 52,431	$ 41,035	$ 41,596

7. LAND, BUILDINGS, LABORATORY SPACE, AND EQUIPMENT

The following table presents the cost and accumulated depreciation and amortization of the Institute's investment in land, buildings, laboratory space, and equipment as of August 31, 2021 and 2020, respectively:

(In thousands)

	2021	2020
Land	$ 92,139	$ 92,139
Buildings	860,021	766,823
Laboratory space and leasehold improvements	347,553	350,601
Equipment, furniture and fixtures	636,279	606,649
	1,935,992	1,816,212
Less: Accumulated depreciation and amortization	(1,229,850)	(1,174,642)
	706,142	641,570
Construction in progress	58,895	121,639
Total	$ 765,037	$ 763,209

Depreciation expense was approximately $85.7 million and $86.5 million for the fiscal years ended August 31, 2021 and 2020, respectively.

8. LEASES

In accordance with GAAP, the Institute treats its occupancy arrangements for laboratory and office space for its Investigators at host institutions as operating leases. These leases have remaining terms of less than one year to seven years. The period which is subject to an option to extend or terminate occupancy arrangement is not included in the lease term as it is not reasonably certain the Institute will renew the terms or terminate any specific existing Investigators upon expiration of their term.

Operating leases of the Institute as of August 31, 2021 and 2020, respectively, are as follows:

(In thousands)	2021	2020
ROU asset balance	$ 138,227	$ 151,670
Short-term liability balance	$ 43,110	$ 36,414
Long-term liability balance	95,078	115,193
Total liability balance	$ 138,188	$ 151,607
Operating lease cost included in *Medical Research* on the Consolidated Statements of Activities	$ 47,419	$ 49,477
Cash paid for amounts included in the measurement of operating lease liabilities:		
Operating cash flows used in operating leases	$ 47,396	$ 49,540
Right-of-use assets obtained in exchange for new operating lease liabilities	$ 30,722	$ 13,293

(In thousands)
Maturities of operating lease liabilities as of August 31, 2021

Fiscal Year	Payments
2022	$ 45,050
2023	35,763
2024	29,199
2025	23,325
2026	8,197
Thereafter	1,924
Total undiscounted lease liability	143,458
Imputed Interest	(5,270)
Total discounted lease liability	$ 138,188

The impact of lease costs related to finance leases and short-term leases was not material for the fiscal year ended August 31, 2021.

	2021	2020
Weighted-average remaining lease term	3.82	4.87
Weighted-average discount rate	1.62	1.62

9. BOND AND NOTE PAYABLES

Tax-exempt bonds payable

On June 6, 2019, the Institute issued $51.8 million of tax-exempt capital appreciation bonds through the Economic Development Authority of Loudoun County, Virginia ("EDA") to finance the construction of a 101-unit apartment building at the Janelia Research Campus, which will be used by scientists and others engaged in research and administration at the Campus. The capital appreciation bonds represent bonds issued at a deep discount, pay no interest, but accrete or compound in value from the date of issuance to the date of maturity. The capital appreciation bonds are presented at their maturity value less the unaccreted appreciation. Unaccreted appreciation represents the difference between the maturity value of the debt and the face value and is accreted as interest expense over the life of the bonds. The maturity value of $141.8 million less the unaccreted appreciation of $86.0 million was $55.8 million as of August 31, 2021. The bonds carry a fixed rate of 3.38%, a yield to maturity of 3.38%, and a maturity date of July 1, 2049.

On May 15, 2013, the Institute issued $33.1 million of tax-exempt bonds through the Industrial Development Authority of Loudoun County, Virginia ("IDA") to finance the construction of an 86-unit apartment building at the Janelia Research Campus, to be used by scientists and others engaged in research and administration at the Campus. The bonds carry a variable interest rate determined on a weekly basis and mature on June 1, 2043. The net composite interest rate on the bonds and interest rate swap for the fiscal years ended August 31, 2021 and 2020 was 2.06% and 2.22%, respectively.

On October 2, 2009, the Institute issued $23.0 million of tax-exempt bonds through the IDA to finance the construction of a 60-unit apartment building at the Janelia Research Campus, to be used by scientists and others engaged in research and administration at the Campus. The bonds carry a variable interest rate determined on a weekly basis and mature on October 1, 2039. The net composite interest rate on the bonds and interest rate swap for the fiscal years ended August 31, 2021 and 2020 was 2.73% and 2.96%, respectively.

On May 15, 2008, the Institute issued $76.5 million of bonds through the Maryland Economic Development Corporation ("MEDCO") to refund $76.5 million of outstanding bonds issued on November 8, 1990, to finance the construction of the Institute's headquarters and conference center complex. The bonds carry a variable interest rate determined on a weekly basis and mature on May 15, 2043. The net composite interest rate on the bonds and interest rate swap for the fiscal years ended August 31, 2021 and 2020 was 3.45% and 3.68%, respectively.

On February 21, 2008, the Institute issued $83.5 million in tax-exempt bonds through MEDCO to finance the expansion of the Institute's existing headquarters and conference facilities. The bonds carry a variable interest rate determined on a weekly basis and mature on February 15, 2043. The net composite interest rate on the bonds and interest rate swap for the fiscal years ended August 31, 2021 and 2020 was 3.28% and 3.52%, respectively.

On February 27, 2003, the Institute issued $500.0 million in tax-exempt bonds through the IDA to finance construction of the Janelia Research Campus. The bonds carry a variable interest rate determined on a weekly basis and mature on February 15, 2038. The net composite interest rate on the bonds and interest rate swap for the fiscal years ended August 31, 2021 and 2020 was 2.77% and 3.01%, respectively.

Prior to the maturity of each of the variable rate tax-exempt bond issues, the Institute is obligated upon seven-day notice from a holder to redeem any or all bonds unless the remarketing agent is able to place the bonds with another party or hold them in their own portfolio. To date, no remarketing agents have failed to fulfill their obligations under their respective remarketing agreements. The Institute maintains sufficient cash and marketable securities to pay any bondholder redemption in part or in full the $716.1 million outstanding as of August 31, 2021.

Note payable

In June 2003, the Institute entered into a renewable promissory note to finance the commercially used land and buildings at the Janelia Research Campus that could not be financed with tax-exempt debt. In May 2020, the Institute replaced the existing promissory note with a new loan agreement with a different financing institution. The Institute did not recognize a gain or loss on the replacement of the note in fiscal year 2020. In May 2021, the Institute renewed the current note, which has a principal balance of $40.4 million, carries monthly interest payments based on LIBOR plus 50 basis points, and matures May 20, 2022. The net composite interest rate on the note and interest rate swap for the fiscal years ended August 31, 2021 and 2020 was 2.01% and 1.58%, respectively.

Interest Rate Swaps

All variable rate debt has been synthetically fixed using variable-to-fixed interest rate swaps. Refer to Note 5 for information related to the debt-related interest rate swaps.

The following tables present bonds and note payables with their respective composite interest rates and interest expense for the fiscal years ended August 31, 2021 and 2020, respectively:

August 31, 2021 (In thousands)	As of August 31, 2021		For the year ended August 31, 2021	
	Calendar Year of Maturity	Outstanding Principal	Average Composite Interest Rate[2]	Composite Interest Expense[3]
Tax-exempt bond payables:				
Janelia Research Campus Apartment C[1,4]	2049	$ 55,806	3.38%	$ 779
Janelia Research Campus Apartment B	2043	33,130	2.06%	687
Janelia Research Campus Apartment A	2039	23,000	2.73%	630
Headquarters and conference center	2043	76,500	3.45%	2,651
Headquarters and conference center expansion	2043	83,500	3.28%	2,749
Janelia Research Campus	2038	500,000	2.77%	13,796
Total bonds payable		771,936		21,292
Amortization of bond issuance costs				38
Unamortized bond issuance costs		(986)		
Net bonds payable		770,950		21,330
Note payable:				
Janelia commercial property	2022	40,376	2.01%	814
Total note payable		40,376		814
Total		$ 811,326		$ 22,144

[1]The Institute issued $51.8 million of capital appreciation bonds in June 2019 at a fixed rate of 3.38%. The outstanding principal balance as of August 31, 2021 was $55.8 million due to the accretion in value from the date of issuance to August 31, 2021.

[2]Net composite rate on the bond and the interest rate swap.

[3]Interest expense includes interest expense on the bond and the related interest rate swap.

[4]Reflects interest expense after $1.1 million of capitalized interest related to the construction of an apartment building, which was completed on March 31, 2021. Life-to-date capitalized interest on the bond was approximately $2.7 million as of August 31, 2021.

August 31, 2020 (In thousands)	As of August 31, 2020		For the year ended August 31, 2020	
	Calendar Year of Maturity	Outstanding Principal	Average Composite Interest Rate[2]	Composite Interest Expense[3]
Tax-exempt bond payables:				
Janelia Research Campus Apartment C[1,4]	2049	$ 53,966	3.38%	$ 190
Janelia Research Campus Apartment B	2043	33,130	2.22%	736
Janelia Research Campus Apartment A	2039	23,000	2.96%	682
Headquarters and conference center	2043	76,500	3.68%	2,819
Headquarters and conference center expansion	2043	83,500	3.52%	2,941
Janelia Research Campus	2038	500,000	3.01%	14,928
Total bonds payable		770,096		22,296
Amortization of bond issuance costs				38
Unamortized bond issuance costs		(1,024)		
Net bonds payable		769,072		22,334
Note payable:				
Janelia commercial property	2021	40,376	1.58%	649
Total note payable		40,376		649
Total		$ 809,448		$ 22,983

[1]The Institute issued $51.8 million of capital appreciation bonds in June 2019 at a fixed rate of 3.38%. The outstanding principal balance as of August 31, 2020 was $54.0 million due to the accretion in value from the date of issuance to August 31, 2020.

[2]Net composite rate on the bond and the interest rate swap.

[3]Interest expense includes interest expense on the bond and the related interest rate swap.

[4]Reflects interest expense after $1.6 million of capitalized interest related to the construction of an apartment building. Life-to-date capitalized interest on the bond was approximately $1.6 million as of August 31, 2020.

The following table presents interest expense in total for the fiscal years ended August 31, 2021 and 2020, respectively:

(In thousands)

Interest expense	2021	2020
Bonds and note	$ 1,651	$ 7,731
Net interest rate swaps	20,455	15,214
Sub-total	22,106	22,945
Amortization of bond issue costs	38	38
Total for bonds and note	22,144	22,983
Financing leases	97	318
Total	$ 22,241	$ 23,301

The following table presents total interest paid in cash for the bonds and note payable, interest rate swaps, and financing leases for the fiscal years ended August 31, 2021 and 2020, respectively:

(In thousands)	2021	2020
Cash interest paid	$ 21,408	$ 23,250

The following table presents the future annual principal payments required for the bond and note payables as of August 31, 2021:

(In thousands) Fiscal Year	Principal payments
2022	$ 40,376
2023	-
2024	-
2025	-
2026	-
Thereafter	771,936
Total	$ 812,312

10. FUNCTIONAL EXPENSES

The financial statements report certain categories of expenses that are attributable to more than one program or supporting function and require allocation on a reasonable basis that is consistently applied. These expenses are allocated to the programs (Medical research and Science education and other scientific programs) or supporting activities (General and administrative) of the Institute and include employee benefits, post-retirement/employment, and certain shared services. The basis for allocation of these expenses are compensation and estimates of time and effort. The majority of the Institute's expenses, including depreciation and interest, directly relate to the program or supporting function to which they are charged, and therefore, not allocated. General and administrative expenses include those expenses that are not directly identifiable with any other specific function but provide for the overall support and direction of the Institute.

Expense	**Allocation basis**
Employee Benefits	Salaries and wages
Post-retirement/employment	Salaries and wages
Certain Shared Services	Pre-defined rate per attendee or other cost driver

The following table presents functional expenses for the fiscal year ended August 31, 2021:

(In thousands)	Program Services			Supporting Activities	
	Medical Research	Science Education and Other Scientific Programs	Programs Subtotal	General and Administrative	August 31, 2021 Total Expenses
Salaries and wages	$ 242,371	$ 13,032	$ 255,403	$ 36,971	$ 292,374
Benefits	48,128	4,593	52,721	7,741	60,462
Post-retirement/employment benefits	(24,372)	(1,306)	(25,678)	(3,583)	(29,261)
Grants	3,870	27,715	31,585	502	32,087
Supplies	79,222	556	79,778	877	80,655
Laboratory supplies	35,456	-	35,456	-	35,456
Professional services	33,089	8,062	41,151	17,670	58,821
Rent and occupancy	48,749	-	48,749	16	48,765
Property, equipment and maintenance	21,810	185	21,995	10,276	32,271
Facility maintenance and services	12,135	-	12,135	7,258	19,393
Utilities	4,495	-	4,495	927	5,422
Telecommunications	486	14	500	1,515	2,015
Travel and training	1,083	184	1,267	2,074	3,341
Television and film	-	5,799	5,799	-	5,799
Other	39,091	3,283	42,374	2,760	45,134
Depreciation	76,443	217	76,660	9,012	85,672
Interest	15,939	-	15,939	6,302	22,241
	637,995	62,334	700,329	100,318	800,647
Deferred tax benefit, net	-	-	-	3,527	3,527
Total functional expenses	$ 637,995	$ 62,334	$ 700,329	$ 103,845	$ 804,174
Other components of net periodic benefit cost	22,232	1,191	23,423	3,268	26,691
Total expenses	$ 660,227	$ 63,525	$ 723,752	$ 107,113	$ 830,865

The following table presents functional expenses for the fiscal year ended August 31, 2020:

(In thousands)	Program Services			Supporting Activities	
	Medical Research	Science Education and Other Scientific Programs	Programs Subtotal	General and Administrative	August 31, 2020 Total Expenses
Salaries and wages	$ 247,355	$ 12,491	$ 259,846	$ 34,442	$ 294,288
Benefits	56,870	4,818	61,688	8,360	70,048
Post-retirement/employment benefits	(142,184)	(7,119)	(149,303)	(19,243)	(168,546)
Grants	18,834	33,747	52,581	7	52,588
Supplies	67,593	609	68,202	467	68,669
Laboratory supplies	36,089	-	36,089	-	36,089
Professional services	28,632	5,651	34,283	13,050	47,333
Rent and occupancy	49,793	-	49,793	17	49,810
Property, equipment and maintenance	29,767	192	29,959	8,731	38,690
Facility maintenance and services	12,172	2	12,174	5,702	17,876
Utilities	4,192	-	4,192	1,034	5,226
Telecommunications	447	7	454	1,325	1,779
Travel and training	4,086	1,454	5,540	2,258	7,798
Television and film	-	5,648	5,648	-	5,648
Other	3,777	1,582	5,359	1,652	7,011
Depreciation	76,333	229	76,562	9,890	86,452
Interest	17,007	-	17,007	6,294	23,301
	510,763	59,311	570,074	73,986	644,060
Deferred tax benefit, net	-	-	-	9,367	9,367
Total functional expenses	$ 510,763	$ 59,311	$ 570,074	$ 83,353	$ 653,427
Other components of net periodic benefit cost	142,585	7,139	149,724	19,297	169,021
Total operating expenses	$ 653,348	$ 66,450	$ 719,798	$ 102,650	$ 822,448

11. COMMITMENTS AND CONTINGENCIES

Grant Commitments

The following table presents the timing of the Institute's grant payments and the associated discount as of August 31, 2021:

(In thousands) Fiscal Year	Grant Payments
2022	$ 34,623
2023	18,500
2024	5,761
2025	1,070
2026	350
Discount	(637)
Net Liability	$ 59,667

Contractual Commitments

Contractual commitments pertaining to the construction of an apartment building at the Janelia Research Campus totaled approximately $0.1 million and $27.0 million as of August 31, 2021 and 2020, respectively. Proceeds from the issuance of bonds and other revenues are expected to provide the necessary funding for these commitments.

Lines of Credit

In the spring of 2020, the Institute executed a total of $400 million of new lines of credit, available to pay for operating expenses and other financial needs of the Institute. The lines of credit were all 364-day facilities issued by four different lenders. All lines of credit remained undrawn as of August 31, 2021 and 2020. The Institute did not renew the lines of credit beyond the original expirations that occurred in fiscal year 2021.

12. EMPLOYEE BENEFITS

Defined Contribution Retirement Plan

The Institute has a defined contribution plan under section 403(b) of the Internal Revenue Code. The Institute's plan contributions on behalf of its employees were $22.0 million and $23.0 million for the years ended August 31, 2021 and 2020, respectively.

Deferred Compensation Plan

The Institute has an unfunded deferred compensation plan in accordance with Section 457(b) of the Internal Revenue Code. The fair value of the assets and related liability to employees as of August 31, 2021 and 2020 was approximately $71.0 million and $60.0 million, respectively, and is reflected in the Consolidated Statements of Financial Position within *Other assets* and *Accounts payable and accrued liabilities*.

13. POSTRETIREMENT AND POSTEMPLOYMENT BENEFITS

The Institute maintains defined postretirement and postemployment benefit plans that provide eligible retirees with medical, prescription drug, vision, dental, life insurance, and disability programs. The total net obligation for these benefits reflected in the Consolidated Statements of Financial Position was $281.9 million and $340.0 million as of August 31, 2021 and 2020, respectively.

Effective January 1, 2017, there were changes made to the postretirement benefit plan terms related to eligibility and retiree contribution requirements impacting both current and future retirees. The change in plan terms triggered a negative plan amendment and re-measurement as of September 30, 2016. The estimated prior service credit for the postretirement plan that will be amortized into expense over 6.5 years was approximately $102 million. The amortization period represents the remaining years of service to the full eligibility date and was approximately $15.6 million and $15.6 million for the years ended August 31, 2021 and 2020, respectively.

The following table presents the postretirement plan's unfunded status and the amount of the projected postretirement benefit plan costs for the years ended August 31, 2021 and 2020:

(In thousands)		
Accrued Benefit Liability:	2021	2020
Benefit obligation at beginning of fiscal year	$ 341,465	$ 499,650
Service cost	10,879	21,246
Interest cost	8,772	15,367
Employee contributions	1,828	1,670
Plan amendments	-	-
Benefits paid from the trust	(6,962)	(2,752)
Direct benefit payments	(13)	(4,741)
Net actuarial (gain) loss	(36,229)	(188,975)
Benefit obligation at end of fiscal year	$ 319,740	$ 341,465
Change in fair value of plan assets:		
Fair value of plan assets, beginning of year	$ 1,763	$ 1,007
Actual return on plan assets	(4)	8
Employer contributions to plan	43,596	3,500
Employer direct benefit payments	(1,815)	3,071
Employee contributions	1,828	1,670
Benefits paid from the trust	(6,962)	(2,752)
Direct benefit payments	(13)	(4,741)
Fair value of plan assets, end of year	$ 38,393	$ 1,763
Reconciliation of funded status:		
Funded status	$ (281,347)	$ (339,702)
Current liabilities	-	(6,424)
Noncurrent liabilities	(281,347)	(333,278)
Net amount recognized in the Consolidated Statements of Financial Position	$ (281,347)	$ (339,702)

Changes in plan assets and benefit obligations recognized in net assets:		
New prior service cost	$ -	$ -
Net (gain) loss arising during the year	(36,216)	(188,963)
Amortization recognition of prior service credit	15,566	15,566
Amortization recognition of net gain (loss)	36,216	188,963
Total recognized in net assets	$ 15,566	$ 15,566
Components of net periodic benefit cost:		
Service cost	$ 10,879	$ 21,246
Interest cost	8,772	15,367
Expected return on plan assets	(9)	(20)
Amortization of prior service cost	(15,566)	(15,566)
Immediate recognition of net actuarial (gain) loss	(36,216)	(188,963)
Net periodic benefit cost	$ (32,140)	$ (167,936)
Amounts recorded in net assets not yet amortized as components of net periodic benefit cost:		
Prior service cost	$ (25,111)	$ (40,677)
Amount recognized as an increase in net assets	$ (25,111)	$ (40,677)

The following tables present the assumptions used in determining the benefit obligations and net periodic benefit cost as of August 31, 2021 and 2020, respectively.

	2021	2020
Weighted-average assumptions to determine benefit obligations:		
Discount rate	2.65%	2.60%
Health care cost trend rate		
Immediate trend rate	5.65%	5.74%
Ultimate trend rate	4.00%	4.50%
Year of ultimate trend rate	2047	2039
Assumptions to determine net periodic benefit cost:		
Discount rate	2.60%	3.10%
Health care cost trend rate		
Immediate trend rate	5.74%	5.93%
Ultimate trend rate	4.50%	4.50%
Year of ultimate trend rate	2039	2039
Expected return on assets	0.50%	0.50%

The net amount of projected benefit obligations and plan assets was $281.3 million and $339.7 million as of August 31, 2021 and 2020, respectively.

(In thousands)

Information for postretirement plan with a projected benefit obligation in excess of plan assets	2021	2020
Projected benefit obligation	$ 319,740	$ 341,465
Fair value of plan assets	38,393	1,763

Health coverage is provided to employees who qualify for the Institute's long-term disability benefit until the age of 65. This postemployment benefit cost was $0.4 million and ($1.4) million for the years ended August 31, 2021 and 2020, respectively.

The postretirement benefits that are expected to be paid in each of the next five fiscal years, which reflects expected future service, and in the aggregate for the five fiscal years thereafter, are as follows:

(In thousands)

Fiscal Year	Expected Benefit Payments
2022	$ 8,429
2023	9,178
2024	9,967
2025	10,793
2026	11,638
2027 - 2031	70,209

Effective April 25, 2019, HHMI established a voluntary employee beneficiary association ("VEBA"), the Howard Hughes Medical Institute Retiree Welfare Benefit Plan Trust ("Trust"). The Trust is exclusively used to hold certain Institute contributions to be used for the payment of health benefits of certain of its retired employees and their spouses and dependents who are eligible for coverage. The Trust will be invested in a manner to meet the short-term liquidity demands relating to these obligations. The investment objectives are to preserve the principal of the Trust while obtaining a total rate of return commensurate with the level of assumed risk and liquidity requirements. Investments are limited to U.S. fixed income securities or funds of the same. The Institute's long-term strategic asset allocation guidelines given the Trust's long-term objectives and short-term constraints are summarized in the following table:

Asset Category	Policy Target	Target Range
Money Market / Liquidity Funds	10%	0% - 20%
Domestic Fixed Income Funds	90%	0% - 100%

The Institute's contribution on behalf of its retirees was $43.6 million and $3.5 million for the years ended August 31, 2021 and 2020, respectively. The Institute began paying some retiree plan benefits from the Trust starting in fiscal year 2020 and most benefits in fiscal year 2021.

The following tables summarize the fair value of the Trust as of August 31, 2021 and 2020, respectively:

August 31, 2021
(In thousands)

Asset Category	Percentage of Contribution	Quoted Market Prices (Level 1)	Total Fair Value
Money Market / Liquidity Funds	0%	$ -	$ -
Domestic Fixed Income Funds	0%	-	-
Cash and cash equivalents	100%	38,393	38,393
Total		$ 38,393	$ 38,393

August 31, 2020
(In thousands)

Asset Category	Percentage of Contribution	Quoted Market Prices (Level 1)	Total Fair Value
Money Market / Liquidity Funds	0%	$ -	$ -
Domestic Fixed Income Funds	0%	-	-
Cash and cash equivalents	100%	1,763	1,763
Total		$ 1,763	$ 1,763

14. INCOME TAXES

The provision for income taxes consists of the following for the years ended August 31, 2021 and 2020, respectively:

(In thousands)

	2021	2020
Deferred federal	$ (3,527)	$ (7,504)
Deferred state	-	(1,863)
Benefit from income taxes	$ (3,527)	$ (9,367)

Deferred income taxes, net consists of the following as of August 31, 2021 and 2020, respectively:

(In thousands)

	2021	2020
Total net operating loss carryforward	$ 111,075	$ 114,293
Less: Valuation allowance	(111,075)	(110,766)
Deferred income taxes	$ -	$ 3,527

Under the provisions of the Tax Cuts and Jobs Act, net operating loss carryforwards generated prior to the 2018 tax year may be applied toward future taxable unrelated business income generated from any unrelated business activity and will continue to expire over a period of twenty years. As of August 31, 2021, the Institute had estimated federal and state net operating loss carryforwards generated prior to the 2018 tax year of approximately $573 million, which will expire at various dates from 2027 through 2038. These net loss carryforwards result in a deferred tax asset of $97 million. Management determined that it is more likely than not that the benefits of the net operating loss carryforwards will not be realized in the future, and accordingly the Institute has provided a full valuation allowance of $97 million related to these net operating loss carryforwards.

Net operating loss carryforwards generated in the 2018 tax year and future tax years may only be applied toward future taxable unrelated business income generated from the same business activity, are limited to 80% of the taxable unrelated business income generated in a single tax year, and no longer expire. As of August 31, 2021, the Institute had federal and state net operating loss carryforwards generated during and after the 2018 tax year totaling $92 million related to two unrelated business activities resulting in a deferred tax asset of $14 million. Management determined that it is more likely than not that the benefits of these net operating loss carryforwards will not be realized in the future, and accordingly the Institute has provided a full valuation allowance of $14 million related to these net operating loss carryforwards.

Net tax refunds due or received on income totaled approximately $0.2 million and $0.1 million for the years ended August 31, 2021 and 2020, respectively. Taxes paid on income totaled approximately $0.2 million and $0.2 million for the years ended August 31, 2021 and 2020, respectively.

15. MEDICAL RESEARCH ORGANIZATION

The Institute is classified as a medical research organization for federal income tax purposes under Section 170(b)(1)(A)(iii) of the Internal Revenue Code of 1986, as amended (the "Code"). The Institute is not a private foundation under Chapter 42 of the Code.

16. SUBSEQUENT EVENTS

Management has performed an evaluation of subsequent events through November 18, 2021, which is the date that the financial statements were issued, noting no events which materially affect the consolidated financial statements as of August 31, 2021.