

**Carnegie Mellon University
Uniform Guidance Reports
Year Ended June 30, 2022
(With Independent Auditors' Reports Thereon)**

Carnegie Mellon University

Index

June 30, 2022 and 2021

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Independent Auditors' Report

The Board of Trustees
Carnegie Mellon University:

Report on the Audit of the Consolidated Financial Statements

Opinion

We have audited the consolidated financial statements of Carnegie Mellon University (the University), which comprise the consolidated statements of financial position as of June 30, 2022 and 2021, and the related consolidated statements of activities and cash flows for the years then ended, and the related notes to the consolidated financial statements.

In our opinion, the accompanying consolidated financial statements present fairly, in all material respects, the financial position of the University as of June 30, 2022 and 2021, and the changes in its net assets and its cash flows for the years then ended in accordance with U.S. generally accepted accounting principles.

Basis for Opinion

We conducted our audits in accordance with auditing standards generally accepted in the United States of America (GAAS) and the standards applicable to financial audits contained in *Government Auditing Standards*, issued by the Comptroller General of the United States. Our responsibilities under those standards are further described in the Auditors' Responsibilities for the Audit of the Consolidated Financial Statements section of our report. We are required to be independent of the University and to meet our other ethical responsibilities, in accordance with the relevant ethical requirements relating to our audits. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Responsibilities of Management for the Consolidated Financial Statements

Management is responsible for the preparation and fair presentation of the consolidated financial statements in accordance with U.S. generally accepted accounting principles, and for 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.

In preparing the consolidated financial statements, management is required to evaluate whether there are conditions or events, considered in the aggregate, that raise substantial doubt about the University's ability to continue as a going concern for one year after the date that the consolidated financial statements are issued.

Auditors' Responsibilities for the Audit of the Consolidated Financial Statements

Our objectives are to obtain reasonable assurance about whether the consolidated financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditors' report that includes our opinion. Reasonable assurance is a high level of assurance but is not absolute assurance and therefore is not a guarantee that an audit conducted in accordance with GAAS and *Government Auditing Standards* will always detect a material misstatement when it exists. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control. Misstatements are



considered material if there is a substantial likelihood that, individually or in the aggregate, they would influence the judgment made by a reasonable user based on the consolidated financial statements.

In performing an audit in accordance with GAAS and *Government Auditing Standards*, we:

- Exercise professional judgment and maintain professional skepticism throughout the audit.
- Identify and assess the risks of material misstatement of the consolidated financial statements, whether due to fraud or error, and design and perform audit procedures responsive to those risks. Such procedures include examining, on a test basis, evidence regarding the amounts and disclosures in the consolidated financial statements.
- Obtain an understanding of internal control relevant to the audit 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 University's internal control. Accordingly, no such opinion is expressed.
- Evaluate the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluate the overall presentation of the consolidated financial statements.
- Conclude whether, in our judgment, there are conditions or events, considered in the aggregate, that raise substantial doubt about the University's ability to continue as a going concern for a reasonable period of time.

We are required to communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit, significant audit findings, and certain internal control related matters that we identified during the audit.

Other Reporting Required by *Government Auditing Standards*

In accordance with *Government Auditing Standards*, we have also issued our report dated October 13, 2022 on our consideration of the University's internal control over financial reporting and on our tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements and other matters. The purpose of that report is solely to describe the scope of our testing of internal control over financial reporting and compliance and the results of that testing, and not to provide an opinion on the effectiveness of the University's internal control over financial reporting or on compliance. That report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering the University's internal control over financial reporting and compliance.

KPMG LLP

Pittsburgh, Pennsylvania
October 13, 2022

Carnegie Mellon University

Consolidated Statements of Financial Position

June 30, 2022 and 2021

(dollars in thousands)

	2022	2021
Assets		
Cash and cash equivalents (Note 2)	\$ 765,478	\$ 700,526
Accrued interest and dividends	2,556	1,743
Accounts receivable, net (Note 4)	94,684	89,222
Pledges receivable, net (Note 5)	238,982	280,674
Student loans receivable, net (Note 4)	6,520	8,091
Investments (Notes 6 and 8)	4,004,423	3,880,775
Assets held in trust by others (Note 8)	11,044	12,450
Unexpended bond proceeds (Note 11)	32,306	25,789
Prepaid expenses and other assets (Note 2)	61,258	57,943
Right-of-use assets (Note 9)	67,593	72,575
Land, buildings and equipment, net (Note 10)	1,218,118	1,162,849
Total assets	\$ 6,502,962	\$ 6,292,637
Liabilities		
Accounts payable and other liabilities (Note 2)	\$ 227,917	\$ 243,368
Deferred revenue (Note 4)	172,066	175,076
Federal student loan funds (Note 2)	6,299	7,788
Present value of split interest agreement obligations (Note 2)	16,624	15,811
Lease obligations (Note 9)	68,247	72,851
Debt obligations (Note 11)	758,313	659,172
Total liabilities	\$ 1,249,466	\$ 1,174,066
Net assets		
Without donor restrictions (Note 12)	\$ 2,140,464	\$ 2,058,406
With donor restrictions (Note 12)	3,113,032	3,060,165
Total net assets	\$ 5,253,496	\$ 5,118,571
Total liabilities and net assets	\$ 6,502,962	\$ 6,292,637

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

Carnegie Mellon University

Consolidated Statement of Activities

Year Ended June 30, 2022

(dollars in thousands)

	<u>Without</u> <u>Donor Restrictions</u>	<u>With</u> <u>Donor Restrictions</u>	<u>Total</u>
Revenue and other support			
Tuition and other educational fees revenue, net of financial aid (Note 4)	\$ 663,879	\$ -	\$ 663,879
Sponsored projects revenue (Note 4)			
Software Engineering Institute	129,940	-	129,940
Advanced Robotics for Manufacturing Institute	16,140	-	16,140
Other grants and contracts	319,154	-	319,154
Investment income	60,399	12,714	73,113
Contributions revenue (Note 5)	26,962	252,620	279,582
Auxiliary services revenue	67,687	-	67,687
Other revenue sources (Note 2)	93,229		93,229
Net assets released from donor restrictions	96,611	(96,611)	-
Total revenue and other support	<u>\$ 1,474,001</u>	<u>\$ 168,723</u>	<u>\$ 1,642,724</u>
Expenses (Note 14)			
Salaries	\$ 755,436	\$ -	\$ 755,436
Benefits	162,791	-	162,791
Other operating expenses	333,494	-	333,494
Depreciation and amortization	81,967	-	81,967
Interest expense	13,517	-	13,517
Total expenses	<u>\$ 1,347,205</u>	<u>\$ -</u>	<u>\$ 1,347,205</u>
Increase in net assets before nonoperating activities	\$ 126,796	\$ 168,723	\$ 295,519
Nonoperating activities			
Net realized/unrealized losses on investments (Note 6)	\$ (69,522)	\$ (104,606)	\$ (174,128)
Other (Note 2)	10,489	(4,033)	6,456
Post-retirement plan changes other than net periodic benefit costs (Note 16)	7,078	-	7,078
Net assets released from restrictions for capital	7,217	(7,217)	-
Total nonoperating activities	<u>\$ (44,738)</u>	<u>\$ (115,856)</u>	<u>\$ (160,594)</u>
Increase in net assets	\$ 82,058	\$ 52,867	\$ 134,925
Net assets			
Beginning of year	2,058,406	3,060,165	5,118,571
End of year	<u>\$ 2,140,464</u>	<u>\$ 3,113,032</u>	<u>\$ 5,253,496</u>

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

Carnegie Mellon University

Consolidated Statements of Activities

Year Ended June 30, 2021

(dollars in thousands)

	<u>Without</u> <u>Donor Restrictions</u>	<u>With</u> <u>Donor Restrictions</u>	<u>Total</u>
Revenue and other support			
Tuition and other educational fees revenue, net of financial aid (Note 4)	\$ 568,712	\$ -	\$ 568,712
Sponsored projects revenue (Note 4)			
Software Engineering Institute	119,677		119,677
Advanced Robotics for Manufacturing Institute	19,018	-	19,018
Other grants and contracts	309,150	-	309,150
Investment income	55,402	8,859	64,261
Contributions revenue (Note 5)	21,638	462,767	484,405
Auxiliary services revenue	20,686	-	20,686
Other revenue sources	84,903	1,909	86,812
Net assets released from donor restrictions	83,679	(83,679)	-
Total revenue and other support	<u>\$ 1,282,865</u>	<u>\$ 389,856</u>	<u>\$ 1,672,721</u>
Expenses (Note 14)			
Salaries	\$ 713,528	\$ -	\$ 713,528
Benefits	163,415	-	163,415
Other operating expenses	261,373	-	261,373
Depreciation and amortization	80,165	-	80,165
Interest expense	12,127	-	12,127
Total expenses	<u>\$ 1,230,608</u>	<u>\$ -</u>	<u>\$ 1,230,608</u>
Increase in net assets before nonoperating activities	\$ 52,257	\$ 389,856	\$ 442,113
Nonoperating activities			
Net realized/unrealized gains on investments (Note 6)	\$ 350,472	\$ 717,940	\$ 1,068,412
Other (Note 2)	5,020	10,103	15,123
Post-retirement plan changes other than net periodic benefit costs (Note 16)	159	-	159
Net assets released from restrictions for capital	26,381	(26,381)	-
Total nonoperating activities	<u>\$ 382,032</u>	<u>\$ 701,662</u>	<u>\$ 1,083,694</u>
Increase in net assets	<u>\$ 434,289</u>	<u>\$ 1,091,518</u>	<u>\$ 1,525,807</u>
Net assets			
Beginning of year	1,624,117	1,968,647	3,592,764
End of year	<u>\$ 2,058,406</u>	<u>\$ 3,060,165</u>	<u>\$ 5,118,571</u>

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

Carnegie Mellon University

Notes to Consolidated Financial Statements

Year Ended June 30, 2022

(dollars in thousands)

	<u>2022</u>	<u>2021</u>
Cash flows from operating activities		
Increase in net assets	\$ 134,925	\$ 1,525,807
Adjustments to reconcile increase in net assets to net cash provided by operating activities:		
Realized and unrealized losses (gains) on investments, net	127,511	(1,115,886)
Depreciation and amortization	81,967	80,165
Amortization of right-of-use assets	20,775	20,119
Amortization of bond premium and bond issuance costs, net	(6,517)	(5,179)
Gifts in kind	-	(3,186)
Asset dispositions	1,300	1,829
Contributions for land, buildings and equipment and endowment	(178,139)	(249,701)
Provision for bad debt and other allowances	(964)	(1,758)
Assets held in trust by others	(187)	(206)
(Increase)/decrease in assets:		
Accrued interest and dividends	(813)	(1,279)
Accounts receivable, net	(6,236)	(18,999)
Pledges receivable, net	43,429	(146,990)
Other assets	(5,083)	(10,155)
Increase/(decrease) in liabilities:		
Accounts payable and other liabilities	(24,035)	12,149
Operating Lease obligations	(19,466)	(17,274)
Deferred revenue	(3,010)	22,061
Present value of split interest agreements payable	814	(59)
Net cash provided by operating activities	<u>\$ 166,271</u>	<u>\$ 91,458</u>
Cash flows from investing activities		
Proceeds from sale and maturity of investments	1,459,525	1,792,603
Purchases of investments	(1,709,090)	(1,973,323)
Purchases of land, buildings and equipment	(129,644)	(108,412)
Federal loan programs	(1,490)	(3,233)
Disbursements of loans to students	(15)	(20)
Repayments of loans from students	1,586	2,459
Net cash used for investing activities	<u>\$ (379,128)</u>	<u>\$ (289,926)</u>
Cash flows from financing activities		
Proceeds from issuance of debt, including bond premium	190,564	10,000
Repayments of debt obligations	(84,215)	(11,384)
Payment of debt issuance costs	(692)	-
Contributions for land, building, and equipment and endowment	178,669	250,716
Net cash provided by financing activities	<u>284,326</u>	<u>249,332</u>
Net increase in cash and cash equivalents, and restricted cash	<u>71,469</u>	<u>50,864</u>
Cash, cash equivalents, and restricted cash at beginning of year	<u>726,315</u>	<u>675,451</u>
Cash, cash equivalents, and restricted cash at end of year	<u>\$ 797,784</u>	<u>\$ 726,315</u>
Cash and cash equivalents	<u>\$ 765,478</u>	<u>\$ 700,526</u>
Unexpended bond proceeds (Note 11)	<u>32,306</u>	<u>25,789</u>
Total cash, cash equivalents, and restricted cash	<u>\$ 797,784</u>	<u>\$ 726,315</u>
Noncash transactions:		
Non-cash gifts in kind	896	3,186
Increase in accounts payable and accrued liabilities for land, buildings and equipment	8,521	9,667
Non-cash stock contributions	2,172	536
Lease obligations arising from obtaining right-of-use assets	14,863	12,240

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

Carnegie Mellon University

Notes to Consolidated Financial Statements

Year Ended June 30, 2022

(dollars in thousands)

1. Carnegie Mellon

Carnegie Mellon University ("Carnegie Mellon" or "the university") is a private, not-for-profit educational and research institution. Carnegie Mellon currently enrolls approximately 15,800 students and granted approximately 5,100 bachelor's, master's and doctoral degrees in the last academic year. Approximately 78% of undergraduate students are from the United States of America. International students comprise approximately 22% of undergraduate, 63% of master's, and 54% of Ph.D. students.

2. Summary of Significant Accounting Policies

Basis of Accounting and Reporting

The accompanying consolidated financial statements have been prepared on the accrual basis of accounting in accordance with U.S. generally accepted accounting principles ("GAAP") and include the accounts of Carnegie Mellon as well as the Software Engineering Institute ("SEI"), and other majority-owned entities. The consolidated entities are Advanced Robotics for Manufacturing Institute ("ARM Institute"), Benjamin Garver Lamme Scholarship Fund, Jack G. Buncher Charitable Fund for Carnegie Mellon, iCarnegie, Inc., and Carnegie Innovations, LLC. All significant inter-entity transactions and balances have been eliminated in consolidation. Carnegie Mellon is a joint sponsor with the University of Pittsburgh in MPC Corporation ("MPC"), a beneficiary of The Dietrich Foundation, and an owner as a tenant in common of the Bellefield Boiler Plant. The activities of MPC, The Dietrich Foundation, and the Bellefield Boiler Plant are not consolidated in Carnegie Mellon's consolidated financial statements (see Note 17).

The SEI is a federally funded research and development center (FFRDC) sponsored by the U.S. Department of Defense ("DoD") and operated by the university. The most recent contract provided a five-year initial term ended in June 2020 plus a five-year renewal option, which was exercised in July 2020. In January 2017, the DoD awarded the ARM Institute, a nonprofit venture led by Carnegie Mellon, a seven year contract to launch an advanced robotics manufacturing institute in Pittsburgh.

Carnegie Mellon's net assets and revenues, expenses, gains and losses are classified based on the existence or absence of donor imposed restrictions. Accordingly, net assets and changes therein are classified and reported as follows:

Without Donor Restrictions

Net assets that are not subject to donor imposed stipulations.

With Donor Restrictions

Net assets subject to specific donor imposed or legal stipulations that can be fulfilled by actions of Carnegie Mellon pursuant to those stipulations or that expire by the passage of time. Also included in this category are net assets subject to donor imposed stipulations requiring the assets be maintained in perpetuity. Generally, the donors of these assets permit Carnegie Mellon to use all or part of the income earned on the related investments for general or specific purposes.

Carnegie Mellon University

Notes to Consolidated Financial Statements

Year Ended June 30, 2022

(dollars in thousands)

Other restricted items in this category include annuity and life income gifts where the ultimate purpose of the proceeds is donor restricted.

Revenues are reported as increases in net assets without donor restrictions unless use of the related assets is limited by donor imposed restrictions. Expenses are reported as decreases in net assets without donor restrictions. Gains and losses on investments and other assets or liabilities are reported as increases or decreases in net assets without donor restrictions unless their use is restricted by the donor or by law. Expiration or satisfaction of donor restrictions on net assets are reported as net assets released from donor restrictions.

Cash Equivalents

Cash equivalents include highly liquid investments with original maturities of three months or less when purchased. Cash equivalents are recorded at cost, which approximates fair value. These balances are held at the university's custodians, prime brokers, clearing agents, and banking institutions for investment and working capital purposes. Cash equivalents held within investments are held for long term purposes and not considered cash equivalents for purposes of the statements of cash flow.

Investments

All investments held by Carnegie Mellon are reported at fair value. The fair value of marketable debt and equity securities is based on published current market prices in active securities markets. The fair value of certain investments structured as investment companies is based on the net asset value of such investments and generally is estimated by external investment managers.

As a practical expedient, the university is permitted to estimate fair value of an investment in an investment company, at the measurement date, using the reported net asset value (NAV) without further adjustment unless the university expects to sell the investment at a value other than NAV or if the NAV is not calculated in accordance with fair value principles. Investments measured under the net asset value practical expedient primarily consist of the university's ownership in alternative investments (principally limited partnership interests in private equity, real estate, natural resources, and hedge funds) and certain investments in commingled funds.

Carnegie Mellon reviews and evaluates the valuation methods and assumptions used by investment managers in determining fair value NAV. Those estimated fair values may differ significantly from values that would result had a ready market for these securities existed. Note 8 - Fair Value provides additional information about inputs used to determine fair value for investments. Investments received as a gift are reflected as contributions at their fair value at the date of the gift.

Gains and losses, dividends, and interest income from investments are reported in the consolidated statements of activities. Internal and external investment management fees and expenses are netted against investment returns.

Investment securities, in general, are exposed to various risks, such as interest rate, credit and overall market volatility. Due to the level of risk associated with certain

Carnegie Mellon University

Notes to Consolidated Financial Statements

Year Ended June 30, 2022

(dollars in thousands)

investment securities, changes could materially affect the amounts reported in the consolidated statements of financial position.

Endowment

Investment policy for endowment assets is the responsibility of the Investment Committee of the Board of Trustees. Substantially all endowment assets are managed by outside investment managers and overseen by the university's Investment Office.

Endowment net assets without donor restrictions include Carnegie Mellon funds, gifts without restrictions from donors, and any accumulated income, gains, and appreciation thereon, which is intended to remain in the endowment for the long-term support of Carnegie Mellon activities, but may be expended under trustee authorization. Also included is interest and dividend income on donor restricted endowment assets where distribution of such income is not subject to a donor restriction.

Endowment net assets with donor restrictions include gifts and any accumulated income, gains, and appreciation thereon which donor restrictions require to be retained in perpetuity to provide a permanent source of support for the university. Also included are accumulated income, gains, and appreciation on endowment assets where distribution/spending of such returns is restricted by the donor. The Trustees of Carnegie Mellon must annually authorize release of endowment gains according to Pennsylvania law. This classification also includes term endowments and endowment gifts whereby the donor permits distributions of the principal amount of the gift and accumulated appreciation.

All endowment funds participate in a Carnegie Mellon investment pool. The investment pool provides income to its respective participants. Such income is used for the specific purpose prescribed by the donor or, if the purpose was not prescribed by the donor, the income is deemed to be without donor restrictions and used for general purposes. New endowment funds or additions to existing funds are assigned shares in the investment pool based upon the per share market value at the end of the previous month. Income distributions from the investment pool are based upon the number of shares held by each participant and the approved spending rate (see Note 7). Income distributions from the investment pool are based upon the "total return concept". Component amounts of total return not distributed currently are reinvested in the investment pool and are available for distribution from the endowment assets in future years.

Assets Held in Trust by Others

Assets held in trust by others include the value of Carnegie Mellon's beneficial interest in perpetual trusts and irrevocable trusts held by outside trustees. The present value of the perpetual trusts' estimated future cash receipts, which are measured by the fair value of the assets contributed to the trust, are recognized as assets and contribution revenues at the dates the trusts are established. The assets are adjusted periodically for changes in market values.

Various donors have established irrevocable trusts whereby Carnegie Mellon holds a remainder interest in the trust or is entitled to distributions over the life of the trusts. The present value of the portion of the trusts estimated to be distributable to Carnegie

Carnegie Mellon University

Notes to Consolidated Financial Statements

Year Ended June 30, 2022

(dollars in thousands)

Mellon over the life of the trusts or upon the termination of the trusts are recorded as assets and contribution revenues at the dates the trusts are established. The assets are adjusted periodically for changes in market value.

Unexpended Bond Proceeds

Unexpended bond proceeds in the amount of \$32.3 million as of June 30, 2022 represent cash proceeds from the issuance of Series 2022 C bonds in February 2022, while \$25.8 million as of June 30, 2021 represent cash proceeds from the issuance of Series 2020A bonds in February 2020. The unexpended bond proceeds are held by a trustee under the respective bond indenture for capital expenditures. See Note 11 for more information.

Prepaid Expenses and Other Assets

Prepaid expenses represent items such as prepaid insurance, prepaid rentals and other contractual payments made in advance of their use or consumption. Amounts are expensed and amortized over the periods to which the charges relate. Other assets include deferred compensation plan assets, swap assets and other costs incurred that will result in benefits to future periods.

Right-of-use Assets and Lease Obligations

Operating lease right-of-use ("ROU") assets and operating lease obligations are recognized based on the present value of the future minimum lease payments over the lease term at commencement date. As the university's leases generally do not provide an implicit rate, the university's incremental borrowing rate at commencement date is used to determine the present value of future payments. The operating lease ROU asset also includes any lease payments made and excludes lease incentives and any initial direct costs incurred. The university's operating lease ROU assets and operating lease obligations are calculated including options to extend the lease when it is reasonably certain that the university will exercise that option. Lease expense for minimum lease payments is recognized on a straight-line basis over the lease term.

Land, Buildings and Equipment

Land, buildings and equipment are recorded at cost at the date of acquisition or, if acquired by gift, at the fair value as of the date of the gift. Additions to plant assets are capitalized while scheduled maintenance and minor renovations are expensed to operations. Buildings and equipment are reflected net of accumulated depreciation which is calculated on a straight-line basis over the estimated useful lives. Carnegie Mellon capitalizes interest during periods of construction. Carnegie Mellon reviews its land, buildings, equipment and other long-lived assets for impairment whenever events or circumstances indicate that the carrying amount may not be recoverable.

Donated works of art, historical treasures and similar assets have been recognized at their estimated fair value based upon appraisals or similar valuations at the date of acquisition or donation. If purchased, the assets are recognized at cost. The assets are depreciated over 99 years.

Accounts Payable and Other Liabilities

Accounts payable and other liabilities include accounts payable, accrued payroll and benefits, swap liabilities, and other accrued expenses.

Carnegie Mellon University

Notes to Consolidated Financial Statements

Year Ended June 30, 2022

(dollars in thousands)

Federal Student Loan Funds

This liability represents Perkins loan funds provided to students by the federal government through Carnegie Mellon. Carnegie Mellon is required to collect the loans on behalf of the federal government. The federal government did not renew the Perkins loan program after September 30, 2017, and did not allow disbursements to be made after June 30, 2018. The university has elected to retain the outstanding loans in lieu of assigning the loans to the federal government. The liability will be repaid over the years that loan repayments are received from student borrowers. During the years ended June 30, 2022 and 2021, \$1.5 million and \$3.0 million was repaid to the federal government, respectively. The amounts due from the students are reported in the consolidated statements of financial position as a component of student loans receivable, net.

Present Value of Split Interest Agreement Obligations

Carnegie Mellon's split interest agreements with donors consist primarily of gift annuities, unitrusts, lead trusts, charitable remainder annuity trusts and life income agreements. Assets held under these agreements are included in investments. Generally, contribution revenues are recognized at the dates the agreements are established, after recording liabilities for the present value of the estimated future payments to be made to the beneficiaries. The liabilities are adjusted during the term of the trusts for changes in the value of the assets, accretion of the discount and other changes in the estimates of future benefits. The discount rates utilized for split interest agreements range from 0.4% to 6.0%. Distributions from the trusts are recorded in accordance with the donor's stipulations as contributions and the carrying value of the assets are adjusted for changes in the fair value of the trust assets.

Operating Activities

Carnegie Mellon's measure of operations without donor restrictions includes revenue from tuition, sponsored projects, investment return distributed according to Carnegie Mellon's spending policy, contributions without donor restrictions, contributions for programs, revenues from auxiliary services and other sources, and net assets released from donor restrictions. Operating expenses are reported by natural classification.

Carnegie Mellon University

Notes to Consolidated Financial Statements

Year Ended June 30, 2022

(dollars in thousands)

Revenue Recognition from Contracts with Customers

Revenue is recognized when control of the promised goods or services is transferred to customers in an amount that reflects the consideration the university expects to be entitled to receive in exchange for those goods and services.

Contributions Revenue

Contributions include gifts, grants and unconditional promises to give that are recognized as revenue, at fair value, in the period such commitments are received. Conditional promises to give may be subject to both a barrier to entitlement and a right of return of unused funds. Such contributions are recognized as revenue when the barrier is satisfied. Unconditional promises to give to be received in future years are discounted, as of the date of the gift, at a rate commensurate with the pledge payment schedule. A discount rate commensurate with fair value is used. An allowance is estimated for uncollectible contributions based upon historical patterns and any known uncollectible accounts or accounts in arrears.

Capital Contributions

Donors' contributions to fund construction projects are classified as net assets with donor restrictions and are released from donor restriction through nonoperating activities when the facility is placed in service. \$7.2 million and \$26.4 million of capital contributions were released from donor restrictions during fiscal years 2022 and 2021, respectively.

Nonoperating Activities

Items presented in the consolidated statements of activities as "Nonoperating activities" include unrealized gains and losses and interest expense related to interest rate swap agreements, losses from adjustments of pledges receivable with donor restrictions, and certain other gains and losses.

Income Taxes

Carnegie Mellon is a nonprofit organization as described in Section 501(c)(3) of the Internal Revenue Code (the "Code") and is generally exempt from income taxes on related income pursuant to Section 501(a) of the Code.

The university accounts for uncertainties in income taxes in accordance with authoritative guidance, which prescribes a recognition threshold of more-likely-than-not to be sustained upon examination by the appropriate taxing authority. Measurement of the tax uncertainty occurs if the recognition threshold has been met. Management determined there were no tax uncertainties that met the recognition threshold at June 30, 2022 and 2021.

The university's federal Exempt Organization Business Income Tax Returns remain subject to examination by the Internal Revenue Service for the years subsequent to June 30, 2017.

The university's policy is to recognize interest related to unrecognized tax benefits in interest expense and penalties in operating expenses.

Carnegie Mellon University

Notes to Consolidated Financial Statements

Year Ended June 30, 2022

(dollars in thousands)

Use of Estimates

The preparation of consolidated financial statements in conformity with GAAP requires management to make estimates and assumptions that affect the reported consolidated financial statements and related accompanying footnote disclosures. Actual results could differ from those estimates and these differences could be material.

Adoption of New Accounting Pronouncements

In September 2020 the Financial Accounting Standards Board (FASB) issued Accounting Standards Update (ASU) 2020-07, Not-for-Profit Entities (Topic 958): Presentation and Disclosures by Not-for-Profit Entities for Contributed Nonfinancial Assets (ASU 2020-07). ASU 2020-07 addresses current guidance on the presentation of contributed nonfinancial assets within the Consolidated Statements of Activities. The standard is effective for fiscal years beginning after June 15, 2021, with early adoption permitted and should be applied on a retrospective basis to each period presented. The university adopted this standard on July 1, 2021, the result of which did not have a material impact on its consolidated financial statements.

3. Financial Assets and Liquidity Resources

The university continuously monitors liquidity needed to meet its operating activities while prudently investing its available capital. Possible sources of liquidity include cash and cash equivalents, short-term investments, marketable debt and equity securities, a \$50.0 million line of credit and a \$70.0 million commercial paper program (see Note 11). The university also anticipates converting certain receivables to cash within the next twelve months. As of June 30, 2022 and 2021, financial assets available within one year for general expenditure are as follows (*dollars in thousands*):

	<u>2022</u>	<u>2021</u>
Cash and cash equivalents	\$ 765,478	\$ 700,526
Accounts receivable, net	94,684	89,222
Pledges receivable restricted for operations	12,385	10,815
Short-term working capital investments	329,989	110,935
Subsequent year's approved endowment distributions	129,906	111,192
Subsequent year's approved long-term working capital distributions	14,548	11,221
Total financial assets available within one year	<u>\$ 1,346,990</u>	<u>\$ 1,033,911</u>

For purposes of analyzing resources available for general expenditures over a 12-month period, the university considers all expenditures related to its ongoing activities of teaching and research, as well as the conduct of services undertaken to support those activities, to be general expenditures. This includes short-term working capital investments available for construction and plant activity. Long-term working capital investments are included within the university's long-term investments pool. While the university does not intend to spend from these long-term working capital investments other than the amounts appropriated for general expenditure as indicated above, the

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long-term working capital investments could be made available if necessary. However, the long-term investments pool contains investments with lock-up provisions that reduce the total investments that could be made available (see Notes 6 and 8).

4. Revenue from Contracts with Customers and Accounts Receivable

Tuition Revenue: Tuition revenue is recognized within the fiscal year in which educational services are provided. Revenue related to student services crossing fiscal years is recognized on a pro-rata basis based upon the number of instruction days in each period. Tuition, at published prices, from undergraduate students was \$416.8 million and \$399.3 million for the years ended June 30, 2022 and 2021, respectively. Tuition, at published prices, from graduate students was \$396.8 million and \$315.3 million for the years ended June 30, 2022 and 2021, respectively. Other education related revenue was \$40.5 million and \$31.5 million for the years ended June 30, 2022 and 2021, respectively. The transaction price for tuition revenue may be reduced directly by discounts or scholarships from the amount of the standard rates charged. These discounts are considered financial aid and were \$190.2 million and \$177.4 million for the years ended June 30, 2022 and 2021, respectively. Upon withdrawal, a student may be eligible to receive a refund, or a partial refund, the amount of which is dependent on the timing of the withdrawal during the academic term. The amount of refunds paid is not a significant portion of the university's tuition revenue.

Students are billed prior to the start of each academic term based upon the agreements they signed and payment is due prior to the start of the term. Student receivables are not collateralized; however, credit risk is minimized as a result of the diverse nature of the university's student base. The university establishes an allowance for doubtful accounts based on historical trends and other information.

Sponsored Projects Revenue: The university receives sponsored program funding from various governmental and corporate sources. The funding may represent a reciprocal transaction in exchange for an equivalent benefit in return, or it may be a nonreciprocal transaction in which the resources provided are for the benefit of the university, the funding organization's mission, or the public at large.

Revenues from exchange transactions are recognized as performance obligations are satisfied, which in most cases is as related costs are incurred. Revenue from non-exchange transactions (contributions) may be subject to conditions, in the form of both a barrier to entitlement and a refund of amounts paid (or a release from obligation to make future payments). Revenues from conditional non-exchange transactions are recognized when the barrier is satisfied. In addition, the university has elected the simultaneous release option for conditional contributions that are also subject to purpose restrictions. Under this option, net assets without donor restrictions will include the donor-restricted contributions for which the purpose restrictions are met in the same reporting period as the revenue is recognized.

Amounts recognized as sponsored projects revenue are based upon a signed contract for direct costs along with indirect cost recovery. Indirect sponsored projects revenue is

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recorded at rates established in advance by Carnegie Mellon through negotiations with the United States government and other sponsors based upon direct costs incurred. The actual federal indirect cost rate is audited by the Defense Contracts Audit Agency (DCAA) and a final fixed rate agreement is signed by the United States government and Carnegie Mellon. The variance between the negotiated fixed and the final audited indirect cost rate results in a carryforward (over or under recovery) that is included in the calculation of negotiated fixed rates in future years.

Sponsored projects revenue is invoiced per the terms of the contractual agreement. Amounts received from sponsors under agreements that require the exchange of assets, rights or other privileges between Carnegie Mellon and the sponsor are recorded as deferred revenue until the contract terms are fulfilled.

Auxiliary Services Revenue: Carnegie Mellon's auxiliaries exist primarily to furnish goods and services to students, faculty and staff. Managed as essentially self-supporting activities, Carnegie Mellon's auxiliaries consist principally of housing and dining services, parking, retail and other external services. Revenue is recognized as the services are provided based upon published prices and rates.

Other revenue sources: Other revenue is comprised of funding received for Carnegie Mellon's international locations, royalty income, licensing revenue, affiliate/membership revenue and other miscellaneous revenues. Other revenue is recognized as services are rendered or over the term of the contract and invoiced based on contractual terms.

The university has elected the practical expedient in ASC 606-10-50-14 to not disclose the information about remaining performance obligations that have original expected durations of one year or less. Federal and other sponsored grants and contracts may include fiscal funding clauses or be subject to annual appropriation. These sponsored research agreements typically span less than five years. The university estimates that its conditional awards outstanding as of June 30, 2022 approximate historical annual sponsored program activity.

Accounts receivable at June 30, 2022 and 2021, consist of the following (*dollars in thousands*):

	<u>2022</u>	<u>2021</u>
Sponsored project accounts receivable		
Software Engineering Institute	\$ 158	\$ 134
Other grants and contracts	57,772	57,571
Total sponsored projects accounts receivable	<u>\$ 57,930</u>	<u>\$ 57,705</u>
Student accounts	4,708	6,264
Other	34,363	27,607
Total student accounts and other	<u>\$ 39,071</u>	<u>\$ 33,871</u>
Allowance for doubtful accounts	(2,317)	(2,354)
Net accounts receivable	<u>\$ 94,684</u>	<u>\$ 89,222</u>

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Other accounts receivable relates primarily to Carnegie Mellon's international programs, affiliate and membership agreements, license agreements and other miscellaneous revenue sources.

Deferred revenue at June 30, 2022 and 2021 consists of the following (dollars in thousands):

	<u>2022</u>	<u>2021</u>
Sponsored projects deferred revenue		
Software Engineering Institute	\$ 7,498	\$ 11,270
ARM Institute	-	1,823
Other contracts and conditional grants	56,052	56,944
Total sponsored projects deferred revenue	<u>\$ 63,550</u>	<u>\$ 70,037</u>
Student accounts	23,689	19,241
Other	84,827	85,798
Total deferred revenue	<u>\$ 172,066</u>	<u>\$ 175,076</u>

Student Loans Receivable

Net student loans receivable of approximately \$6.5 million and \$8.1 million, as of June 30, 2022 and 2021, respectively, primarily represent student loans made under the Perkins federal loan program. These loans are reported net of an allowance for doubtful accounts of approximately \$0.5 million as of June 30, 2022 and 2021.

5. Contributions Revenue and Pledges Receivable

Conditional promises to give, which depend on the satisfaction of identified barriers such as matching gifts from other donors, are recognized as contributions revenue when the conditions are substantially met. Carnegie Mellon had approximately \$13.8 million and \$24.7 million as of June 30, 2022 and 2021 of conditional pledged contributions outstanding primarily related to capital projects. In addition, the university had approximately \$23.0 million and \$26.0 million related to conditional contributions as of June 30, 2022 and 2021, respectively, recorded as deferred revenue in the consolidated statements of financial position. These amounts were not recognized as contributions revenue during the respective fiscal year as the barriers had not been met.

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Pledges receivable as of June 30, 2022 and 2021 are due as follows (*dollars in thousands*):

	<u>2022</u>	<u>2021</u>
In one year or less	\$ 56,342	\$ 47,020
Between one year and five years	150,789	171,487
More than five years	<u>65,523</u>	<u>98,288</u>
Pledges receivable, gross	\$ 272,654	\$ 316,795
Unamortized discount	(23,715)	(24,426)
Allowance for unfulfilled pledges	<u>(9,957)</u>	<u>(11,695)</u>
Pledges receivable, net of discount and allowance	<u>\$ 238,982</u>	<u>\$ 280,674</u>

6. Investments

Investments by major class at June 30, 2022 and 2021 are as follows (*dollars in thousands*):

	<u>2022</u>	<u>2021</u>
Cash equivalents	\$ 62,800	\$ 77,787
Short-term fixed income securities	297,927	77,705
Fixed income securities	470,060	466,662
Equity securities	941,440	1,124,508
Alternative investment partnerships	<u>2,232,196</u>	<u>2,134,113</u>
	<u>\$ 4,004,423</u>	<u>\$ 3,880,775</u>

Investments are held for the following purposes (*dollars in thousands*):

	<u>2022</u>	<u>2021</u>
Endowment	\$ 3,016,724	\$ 3,088,868
Reserves for working capital and plant - short-term	329,989	110,935
Reserves for working capital and plant - long-term	536,297	551,385
Other	<u>121,413</u>	<u>129,587</u>
Total investments	<u>\$ 4,004,423</u>	<u>\$ 3,880,775</u>

Fixed income securities are United States Treasury and Agency obligations, investment grade corporate debt, short-term commercial paper, and asset backed securities. Equity securities at June 30, 2022 included 51.7% domestic equities and 48.3% international and emerging market equities. Equity securities at June 30, 2021 included approximately 52.3% domestic equities and 47.7% international and emerging market

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equities. Alternative investment partnerships are largely investments in buyout, venture capital, real estate, natural resources and hedge funds.

The allocation to each major class in the previous table represents the actual allocation of the short-term and long-term reserves, and other miscellaneous investments on a combined basis. Actual allocations on a combined basis should not be interpreted as an investment allocation policy for a particular investment pool.

Operating investment income as reported in the consolidated statements of activities includes dividends and interest earned on funds without donor restrictions as well as accumulated gains without donor restrictions utilized for current operations in the amounts of \$46.7 million and \$46.2 million for the years ended June 30, 2022 and 2021, respectively. The accumulated gains are reclassified from net realized gains to investment income.

Certain of Carnegie Mellon's outside investment managers are authorized to and do purchase and sell derivative instruments in order to create, increase, decrease, or hedge exposures to market position, including to manage risk due to interest rate and foreign currency fluctuations.

Carnegie Mellon's long-term investments comprise U.S. domestic and international portfolios. Carnegie Mellon does not hedge international portfolios with respect to foreign currencies. Investment managers of these international portfolios have the discretion to, and certain do, manage foreign currencies through foreign exchange contracts to protect the portfolios from potential foreign currency losses and to benefit from potential gains. Carnegie Mellon's investment managers understand that they are assuming active management risks to the extent that they assume foreign currency exposures that differ from the foreign currency exposures in their relevant market benchmarks.

Gains or losses from derivative instruments are reported as realized and unrealized gains or losses in the consolidated statements of activities. The fair value of all derivative instruments is included in the fair value of the investments.

Under the terms of certain limited partnership agreements, Carnegie Mellon is obligated to periodically advance additional funding for venture capital, buyout, real estate and natural resources fund investments. At June 30, 2022 and 2021, Carnegie Mellon had unfunded commitments of approximately \$701.1 million and \$599.1 million, respectively, for which capital calls had not been exercised. Such commitments generally have fixed expiration dates or other termination clauses. Carnegie Mellon maintains sufficient liquidity in its investment portfolio to cover such calls.

Alternative investments, measured at NAV are less liquid than Carnegie Mellon's other investments. The following tables summarize these investments by strategy type at June 30, 2022 and 2021 (*dollars in thousands*):

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	Number of Funds	2022 Fair Value	Number of Funds	2021 Fair Value
Commingled funds	6	\$ 278,840	6	\$ 357,814
Hedge funds	13	239,194	15	283,017
Natural resources	21	140,369	20	125,983
Private equity (buyout) funds	65	297,554	61	274,223
Real estate	24	148,704	20	129,206
Venture capital	203	1,385,667	181	1,302,283
Other	12	20,708	12	19,401
Total	344	\$ 2,511,036	315	\$ 2,491,927

Commingled funds and hedge fund investments held by the university may be subject to restrictions related to the initial investment that limit the university's ability to redeem capital from such investments during a specified period of time subsequent to the university's investment of capital in such funds, typically known as a lock-up period. Capital available for redemption after the lock-up period has expired may also be subject to limits which restrict the available redemption period to semi-monthly, monthly, quarterly, semi-annually, annually or triennially and require 2 – 180 days prior written notice, potentially limiting the university's ability to respond quickly to changes in market conditions. All commingled funds have passed the initial lock-up period as of June 30, 2022.

Natural resources, private equity, real estate, venture capital and other alternative investments cannot be redeemed upon request. Instead, the nature of these investments is that distributions are received through the liquidation of the underlying assets of the fund. It is estimated that the underlying assets of these funds would be liquidated over approximately four to eight years.

7. Endowments

The following tables outline the endowment net asset composition by type of fund as of June 30, 2022 and 2021 (dollars in thousands):

	2022		Total
	Without Donor Restrictions	With Donor Restrictions	
Donor-restricted endowment funds	\$ -	\$ 2,525,149	\$ 2,525,149
Board-designated funds	507,759	-	507,759
Total funds	\$ 507,759	\$ 2,525,149	\$ 3,032,908

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	2021		
	Without Donor Restrictions	With Donor Restrictions	Total
Donor-restricted endowment funds \$	-	\$ 2,524,564	\$ 2,524,564
Board-designated funds	567,500	-	567,500
Total funds	\$ 567,500	\$ 2,524,564	\$ 3,092,064

The following tables provide a summary of the changes in value of the endowment net assets excluding endowment pledges for the years ended June 30, 2022 and 2021 (dollars in thousands):

	2022		
	Without Donor Restrictions	With Donor Restrictions	Total
Endowment net assets, beginning of year	\$ 567,500	\$ 2,524,564	\$ 3,092,064
Gifts and other additions	\$ 20	\$ 156,635	\$ 156,655
Investment income			
Interest and dividends	\$ 7,565	\$ 11,111	\$ 18,676
Net realized gains on sale of securities	28,374	126,223	154,597
Net unrealized losses	(50,160)	(226,496)	(276,656)
Total investment income	\$ (14,221)	\$ (89,162)	\$ (103,383)
Income distributed			
Cash and accrued interest and dividends	\$ (7,565)	\$ (11,111)	\$ (18,676)
Accumulated realized investment gains	(37,975)	(55,777)	(93,752)
Total income distributed	\$ (45,540)	\$ (66,888)	\$ (112,428)
Endowment net assets, end of year	\$ 507,759	\$ 2,525,149	\$ 3,032,908 ⁽¹⁾

⁽¹⁾Includes \$16.2 million of endowment gifts and other transfers pending investment and other accruals.

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	2021		
	Without Donor Restrictions	With Donor Restrictions	Total
Endowment net assets, beginning of year	\$ 424,161	\$ 1,644,699	\$ 2,068,860
Gifts and other additions	\$ 13	\$ 217,250	\$ 217,263
Investment income			
Interest and dividends	\$ 5,836	\$ 7,532	\$ 13,368
Net realized gains on sale of securities	30,714	119,094	149,808
Net unrealized gains	150,630	592,579	743,209
Total investment income	\$ 187,180	\$ 719,205	\$ 906,385
Income distributed			
Cash and accrued interest and dividends	\$ (5,836)	\$ (7,532)	\$ (13,368)
Accumulated realized investment gains	(38,018)	(49,058)	(87,076)
Total income distributed	\$ (43,854)	\$ (56,590)	\$ (100,444)
Endowment net assets, end of year	\$ 567,500	\$ 2,524,564	\$ 3,092,064 ⁽¹⁾

⁽¹⁾Includes \$3.2 million of endowment gifts and other transfers pending investment and other accruals.

Unless the donor specifies that only a certain amount of the endowment may be spent, Pennsylvania Act 141 ("Act 141") allows organizations to choose a total return spending policy strategy, whereby the Board of Trustees may annually elect to spend between 2.0% and 7.0% of the fair market value of the endowment. On July 23, 2020, Pennsylvania 2020 Act 71 ("Act 71") was signed into law. Act 71 modifies Act 141 in that it permits the university's Board of Trustees to spend up to 10% during calendar years 2020, 2021 and 2022, or for the corporation's fiscal years that end during those calendar years. Carnegie Mellon maintains a total return spending policy. Endowment income distributions can consist of dividend and interest income and a withdrawal of accumulated capital gains, when necessary. The main objective of the total return spending policy is to separate spending policy from investment policy. This approach permits asset allocation decisions to be made independently of the need for current income. Carnegie Mellon targets a diversified asset allocation to achieve its long-term objectives with prudent risk constraints. The endowment spending rate is determined annually pursuant to a smoothing formula whereby an approved spending rate percentage is applied to the trailing 36 month average of endowment market values at December 31. For fiscal years 2022 and 2021, the approved spending rate was set at 5.0%. As a result of the spending rate formula, the effective spending rate (defined as the endowment draw totals for the fiscal years 2022 and 2021 divided by the June 30 endowment market values for the those fiscal years) was 3.7% for June 30, 2022 and 3.2% for June 30, 2021.

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8. Fair Value

ASC Topic 820, *Fair Value Measurement*, establishes a hierarchy to prioritize valuation inputs based on the extent to which the inputs are observable in the marketplace. Observable inputs reflect market data obtained from sources independent of the reporting entity and unobservable inputs reflect the entity's own assumptions about how market participants would value an asset or liability based on the best information available.

The following is a description of the university's valuation methodologies for assets and liabilities measured at fair value:

Level 1

Based upon quoted or published prices in active markets that the university has the ability to access for identical assets and liabilities. Market price data is generally obtained from exchange or dealer markets. The university does not adjust the quoted price for such assets and liabilities, which include active listed equities, mutual funds, government supported obligations and cash equivalents.

Level 2

Based on quoted or published prices for similar instruments in active markets, quoted prices for identical or similar instruments in markets that are not active or assets subject to transfer restrictions. Inputs are obtained from various sources including market participants, dealers and brokers.

Level 3

Based on valuation techniques that use significant inputs that are unobservable as they trade infrequently or not at all.

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The following tables present the financial instruments carried at fair value as of June 30, 2022 and 2021 by caption in the consolidated statements of financial position by the valuation hierarchy defined above (dollars in thousands).

	2022			Total
	Quoted Prices in Active Markets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)	
Investments				
Cash equivalents ^(a)	\$ 40,121	\$ 22,679	\$ -	\$ 62,800
Equity investments				
U.S. - equity funds and common stocks ^(a)	476,322	-	9,637	485,959
Mutual funds - international developed	29,709	-	-	29,709
Mutual funds - international emerging	146,932	-	-	146,932
Short-term fixed income	-	297,927	-	297,927
Fixed income funds & securities ^(a)	470,060	-	-	470,060
	\$ 1,163,144	\$ 320,606	\$ 9,637	\$ 1,493,387
Investments measured under the NAV practical expedient ^(b)				2,511,036
Total investments				\$ 4,004,423
Assets held in trust by others				
Beneficial interests held by third party	\$ -	\$ -	\$ 2,806	\$ 2,806
Perpetual trusts held by third party	-	-	8,238	8,238
Total assets held in trust by others	-	-	11,044	11,044
Unexpended bond proceeds	\$ 32,306	\$ -	\$ -	\$ 32,306
Prepaid expenses and other assets				
Deferred compensation plan assets	\$ 17,881	\$ 6,515	\$ 3,526	\$ 27,922
Interest rate swap receivable	-	-	-	-
Total prepaid expenses and other assets	\$ 17,881	\$ 6,515	\$ 3,526	\$ 27,922
Total assets at fair value	\$ 1,213,331	\$ 327,121	\$ 24,207	\$ 4,075,695
Liabilities				
Interest rate swaps payable	-	14,138	-	14,138
Total liabilities at fair value	\$ -	\$ 14,138	\$ -	\$ 14,138

(a) Presentation as a single class is appropriate based on the nature and risks of these investments.

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(b) In accordance with ASC Subtopic 820-10, certain investments that are measured at fair value using the net asset value per share (or its equivalent) practical expedient have not been classified in the fair value hierarchy. The fair value amounts presented in this table are intended to permit reconciliation of the fair value hierarchy to the amounts presented in the consolidated statements of financial position. This includes commingled funds of \$278.9 million, and hedge and private equity funds of \$2,232.1 million as of June 30, 2022.

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	2021			Total
	Quoted Prices in Active Markets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)	
Investments				
Cash equivalents ^(a)	\$ 55,120	\$ 22,667	\$ -	\$ 77,787
Equity securities				
U.S. - equity funds and common stocks ^(a)	525,436	3,962	58,785	588,183
Mutual funds - international developed	20,323	-	-	20,323
Mutual funds - international emerging	158,188	-	-	158,188
Short-term fixed income	-	77,705	-	77,705
Fixed income funds & securities ^(a)	466,662	-	-	466,662
	<u>\$1,225,729</u>	<u>\$ 104,334</u>	<u>\$ 58,785</u>	<u>\$ 1,388,848</u>
Investments measured under the NAV practical expedient ^(b)				2,491,927
Total investments				<u>\$ 3,880,775</u>
Assets held in trust by others				
Beneficial interests held by third party	\$ -	\$ -	\$ 2,619	\$ 2,619
Perpetual trusts held by third party	-	-	9,831	9,831
Total assets held in trust by others	-	-	12,450	12,450
Unexpended bond proceeds	\$ 25,789	\$ -	\$ -	\$ 25,789
Prepaid expenses and other assets				
Deferred compensation plan assets	\$ 19,144	\$ 8,047	\$ 3,187	\$ 30,378
Interest rate swap receivable	-	1,631	-	1,631
Total prepaid expenses and other assets	<u>\$ 19,144</u>	<u>\$ 9,678</u>	<u>\$ 3,187</u>	<u>\$ 32,009</u>
Total assets at fair value	<u>\$1,270,662</u>	<u>\$ 114,012</u>	<u>\$ 74,422</u>	<u>\$ 3,951,023</u>
Liabilities				
Interest rate swaps payable	-	29,659	-	29,659
Total liabilities at fair value	<u>\$ -</u>	<u>\$ 29,659</u>	<u>\$ -</u>	<u>\$ 29,659</u>

(a) Presentation as a single class is appropriate based on the nature and risks of these investments.

(b) In accordance with ASC Subtopic 820-10, certain investments that are measured at fair value using the net asset value per share (or its equivalent) practical expedient have not been classified in the fair value hierarchy. The fair value amounts presented in this table are intended to permit reconciliation of the fair value hierarchy to the

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(dollars in thousands)

amounts presented in the consolidated statements of financial position. This includes commingled funds of \$357.8 million, and hedge and private equity funds of \$1,917.4 million as of June 30, 2021.

Deferred compensation plan assets are valued using market quotations or prices obtained from independent pricing services (Level 1), market quotations or prices obtained from independent pricing sources who may employ various pricing methods (Level 2), and at contract value (Level 3), which approximates fair value.

Beneficial remainder and lead trusts held by third parties are valued at the present value of the future distributions expected to be received upon termination of the trust or over the term of the trust agreement and approximate fair value. Perpetual trusts are valued based upon the university's percentage interest in the fair value of the underlying trust assets.

Interest rate swaps are valued using observable inputs, such as quotations received from the counterparty, dealers or brokers, whenever available and considered reliable. The valuation methods described above may produce fair value calculations that may not be indicative of net realizable value or reflective of future fair values.

The following table includes a roll forward of the consolidated statements of financial position amounts for financial instruments classified by the university within Level 3 of the fair value hierarchy (dollars in thousands):

	Deferred Compensation	Common Stock	Trusts Held by Others	Total
Fair value, June 30, 2020	\$ 3,074	\$ 6,932	\$ 10,605	\$ 20,611
Unrealized gains	91	51,344	1,845	53,280
Purchases	204	100	-	304
Transfers in	-	409	-	409
Transfers out	(182)	-	-	(182)
Fair value, June 30, 2021	<u>\$ 3,187</u>	<u>\$ 58,785</u>	<u>\$ 12,450</u>	<u>\$ 74,422</u>
Unrealized gains / (losses)	99	242	(1,406)	(1,065)
Purchases	153	610	-	763
Transfers in	87	-	-	87
Transfers out	-	(50,000)	-	(50,000)
Fair value, June 30, 2022	<u>\$ 3,526</u>	<u>\$ 9,637</u>	<u>\$ 11,044</u>	<u>\$ 24,207</u>

During the fiscal year ended June 30, 2021, the university recognized \$50.0 million in unrealized gains from the university's investment in Duolingo, Inc., a mobile global learning platform. The university holds this equity investment as a result of a technology license agreement. The unrealized gain reflects the fair value of the university's shares based upon historical data for private offerings of Duolingo's common stock. On July 28, 2021, Duolingo completed an initial public offering (IPO) at a price per share of \$102.

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As a result of the IPO, the investment in Duolingo is no longer within Level 3 of the fair value hierarchy and is considered a Level 1 instrument.

9. Lease Arrangements

The university has operating leases primarily for campus facilities, student housing, and office space. Variable lease payments based on an index or rate, such as the consumer price index, are initially measured using the index or rate in effect at lease commencement. The university has elected the short-term lease exception under Topic 842 for all leases and, as such, leases with an initial term of 12 months or less are not recorded on the consolidated statements of financial position. The university recognizes lease expense for short-term leases on a straight-line basis over the lease term.

The components of lease cost for the fiscal years ended June 30, 2022 and 2021, respectively, included operating lease costs of \$21.7 million and \$20.8 million and short-term lease costs of \$3.7 million and \$4.7 million. Cash payments for operating leases were \$21.3 million and \$19.5 million for the year ended June 30, 2022 and 2021, respectively.

The following table displays the undiscounted cash flows due to operating leases as of June 30, 2022 along with a reconciliation to the discounted amount recorded on the June 30, 2022 consolidated statements of financial position (*dollars in thousands*):

2023	\$	14,249
2024		12,040
2025		10,464
2026		7,071
2027		6,443
Thereafter		<u>21,783</u>
Total undiscounted cash flows (weighted average term 8.4 years)	\$	72,050
Impact of present value discount (weighted average discount rate 1.6%)		<u>(3,803)</u>
Amount reported on consolidated statements of financial position	\$	<u>68,247</u>

Carnegie Mellon University

Notes to Consolidated Financial Statements

Year Ended June 30, 2022

(dollars in thousands)

10. Land, Buildings and Equipment

Land, buildings and equipment at June 30, 2022 and 2021 consist of the following (dollars in thousands):

	<u>Useful Lives</u>	<u>2022</u>	<u>2021</u>
Buildings	35-50 years	\$ 1,654,513	\$ 1,594,163
Moveable equipment	5-20 years	293,560	280,077
Utilities and building-related assets	20 years	123,726	120,015
Land improvements	15 years	19,841	19,841
Software costs	2-10 years	54,698	54,847
Leasehold improvements	2-20 years	<u>37,203</u>	<u>35,075</u>
Subtotal		\$ 2,183,541	\$ 2,104,018
Accumulated depreciation		<u>(1,147,583)</u>	<u>(1,077,577)</u>
Subtotal		\$ 1,035,958	\$ 1,026,441
Land		56,256	55,767
Construction and equipment in progress		<u>125,904</u>	<u>80,641</u>
Land, buildings and equipment, net		<u>\$ 1,218,118</u>	<u>\$ 1,162,849</u>

Carnegie Mellon acquired \$13.3 million and \$16.7 million in equipment through grants for the years ended June 30, 2022 and 2021, respectively.

Carnegie Mellon University

Notes to Consolidated Financial Statements

Year Ended June 30, 2022

(dollars in thousands)

11. Debt Obligations

Debt obligations consist of the following as of June 30, 2022 and 2021 (dollars in thousands):

	<u>Maturity</u>	<u>Interest %</u>	<u>2022</u>	<u>2021</u>
Allegheny County Higher Education Building Authority Revenue Bonds				
Fixed Rate				
Series 2012 A	03/01/24	2.5-5.0%	\$ -	\$ 32,805
Premium, net of debt issuance costs			-	1,491
Series 2013	03/01/43	4.0-5.0%	42,250	42,250
Premium, net of debt issuance costs			2,089	2,430
Series 2017	08/01/29	5.0%	62,165	62,165
Premium, net of debt issuance costs			8,447	9,828
Series 2019 A	08/01/27	5.0%	49,600	49,600
Premium, net of debt issuance costs			6,309	7,531
Series 2020 A	02/01/30	5.0%	45,565	45,565
Premium, net of debt issuance costs			11,352	12,849
Series 2022 B	08/01/27	5.0%	27,240	-
Premium, net of debt issuance costs			5,139	-
Series 2022 C	02/01/32	5.0%	25,000	-
Premium, net of debt issuance costs			7,008	-
Variable Rate				
Series 2008 A	12/01/37	0.16%	120,820	120,820
Debt issuance costs			(257)	(274)
Series 2012 B	02/01/33	0.53%	-	50,000
Debt issuance costs			-	(87)
Series 2019 B	02/01/42	0.57%	60,140	60,140
Debt issuance costs			(119)	(126)
Series 2022 A	02/01/33	0.59%	50,230	-
Debt issuance costs			(210)	-
Taxable Series 2022	02/01/52	3.2%	75,000	-
Debt issuance costs			(230)	-
Collaborative Innovation Center Tax				
Increment Financing	11/01/22	8.5%	285	685
Collaborative Innovation Center Mortgage Obligation				
	03/01/25	6.78%	10,490	11,500
Taxable Senior Notes	02/01/47	3.6%	70,000	70,000
Taxable Senior Notes	02/01/50	3.2%	70,000	70,000
Taxable Commercial Paper	Rolling, up to 270 days	0.46%	10,000	10,000
Total debt obligations			<u>\$758,313</u>	<u>\$659,172</u>

Carnegie Mellon University

Notes to Consolidated Financial Statements

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(dollars in thousands)

The university borrows its tax-exempt debt through public conduit issuers. As of June 30, 2022, all of Carnegie Mellon's tax-exempt debt was issued by the Allegheny County Higher Education Building Authority (ACHEBA). The debt is a general unsecured obligation of the university. Although ACHEBA is the issuer, the university is responsible for the debt service of these bonds.

On September 30, 2014, Carnegie Mellon acquired the Collaborative Innovation Center (CIC) from the Regional Industrial Asset District (RIDC) when Carnegie Mellon and RIDC agreed to terminate the long-term ground lease for the land on which the CIC building was built. The CIC building was originally built and owned by RIDC on land owned and leased by Carnegie Mellon to RIDC pursuant to a long-term ground lease. Prior to the termination of the ground lease, the CIC was recorded as a capital lease by Carnegie Mellon.

As part of the agreement to terminate the ground lease, Carnegie Mellon assumed a \$16.8 million mortgage note. The mortgage note requires monthly principal and interest payments, bears interest at a fixed rate of 6.78% and matures on March 1, 2025. The mortgage note is secured by the CIC building (carrying value of \$22.6 million), the land where CIC is located, and rents derived from the operation of CIC.

Carnegie Mellon also assumed the sole responsibility to make semi-annual payments of any shortfall between the amount of real estate and parking taxes collected and pledged under a Tax Increment Financing (TIF) agreement, and the debt service and annual cost of the TIF. Carnegie Mellon is obligated to timely fund that shortfall until the TIF was satisfied in full on November 1, 2022. The balance of the outstanding TIF note was \$0.3 million and \$0.7 million at June 30, 2022 and 2021, respectively. The TIF note bears interest at a rate of 8.5% through maturity.

In January 2022, Series 2022 A bonds were issued by ACHEBA in the amount of \$50.2 million, and Series 2022 B bonds were issued by ACHEBA in the amount of \$27.2 million, including an original issue premium of \$5.7 million. The Series 2022 A bonds bear interest at a rate indexed to the Secured Overnight Financing Rate (SOFR) and mature on February 1, 2033 with a Special Mandatory Tender Date of August 1, 2027. The Series 2022 B bonds bear interest at a fixed rate of 5% and mature on August 1, 2027. Proceeds from the issuance of the Series 2022 A bonds were used to refund the outstanding Series B of 2012 bonds. Proceeds from the issuance of the Series 2022 B bonds were used to refund the outstanding Series A of 2012 bonds.

In January 2022, Taxable Bonds, Series of 2022 were issued in the amount of \$75.0 million bearing interest at a fixed rate of 3.2%. The proceeds of the bonds will be used to finance a portion of the costs of constructing the Richard King Mellon Science Building, Robotics Innovation Center, and the CMU Cloud Lab.

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Notes to Consolidated Financial Statements

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(dollars in thousands)

In February 2022, Series 2022 C bonds were issued by ACHEBA in the amount of \$25.0 million bearing interest at a fixed rate of 5.0% and maturing on February 1, 2032. The bonds include an original issue premium of \$7.4 million. Proceeds of the bonds are being used to finance a portion of the costs to construct the Richard King Mellon Science Building.

The university maintains a taxable commercial paper program which allows the university to issue in aggregate up to \$70.0 million in commercial paper notes. Proceeds of the notes may be used to refund outstanding debt, finance capital projects, support operations and for any other lawful activity of the university. The notes are sold at a discount to par. The maturities of individual notes cannot exceed 270 days. The university issued \$10.0 million in notes during fiscal year 2022 that are outstanding at June 30, 2022.

The university has a \$50.0 million unsecured line of credit agreement that expires October 19, 2023. No advances were outstanding at June 30, 2022. Advances accrue at a rate based on SOFR.

Interest Expense

Cash paid for interest on debt obligations for the fiscal years ended June 30, 2022 and 2021 totaled \$17.8 million and \$18.3 million, respectively. The university utilizes interest rate swaps to synthetically adjust its exposure to variable rates. Including the swap expense, cash paid for interest for the fiscal years ended June 30, 2022 and 2021 was \$22.1 million and \$22.6 million, respectively. For the fiscal years ended June 30, 2022 and 2021, interest costs of \$0.5 million and \$0.8 million were capitalized related to construction in progress.

Aggregate Maturities

Aggregate maturities of bonds and other debt instruments, for each of the next five years ending June 30, are as follows (dollars in thousands):

2023	\$ 1,365
2024	1,156
2025	8,254
2026	-
2027	5,125
Thereafter	<u>692,885</u>
Total	<u>\$ 708,785</u>

Debt obligations are reflected in the table above based on stated final maturity dates. The outstanding Series 2008 A bonds are variable rate demand bonds that are subject to daily optional tender by the bondholders. In the event that a bondholder tenders these variable rate demand bonds, the purchase price will be repaid from the remarketing of the bonds to a new investor. However, in the event that none of the

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(dollars in thousands)

bonds could be remarketed, Carnegie Mellon has entered into a Standby Bond Purchase Agreement (SBPA) with a financial institution that will purchase the Series 2008 A Bonds at the amount of the bonds outstanding plus related interest. The bonds would then become bank bonds, payable to the liquidity provider per the terms of the agreement. This SBPA was renewed in January 2021 for a three-year term ending January 12, 2024.

12. Net Assets

Net assets consists of gifts and other unexpended revenues and gains and are available for the following purposes supporting the university's educational and research mission as of June 30, 2022 (dollars in thousands):

	2022		Total
	Without Donor Restrictions	With Donor Restrictions	
Board-designated endowment funds	\$ 507,759	\$ -	\$ 507,759
Reserves for working capital and plant- long-term	536,297	-	536,297
Donor-restricted endowment funds	-	1,304,343	1,304,343
Unexpended endowment gains	-	1,220,806	1,220,806
Capital and other designations	1,093,931	316,697	1,410,628
Pledges and assets held in trust by others		250,026	250,026
Split-interest agreements and other donor designations	-	9,420	9,420
Term endowments	-	9,321	9,321
Loan funds	2,477	2,419	4,896
Total Net assets	<u>\$ 2,140,464</u>	<u>\$ 3,113,032</u>	<u>\$5,253,496</u>

Net assets consists of gifts and other unexpended revenues and gains and are available for the following purposes supporting the university's educational and research mission as of June 30, 2021 (dollars in thousands):

Carnegie Mellon University

Notes to Consolidated Financial Statements

Year Ended June 30, 2022

(dollars in thousands)

	2021		Total
	Without Donor Restrictions	With Donor Restrictions	
Board-designated endowment funds	\$ 567,500	\$ -	\$ 567,500
Reserves for working capital and plant- long-term	551,385	-	551,385
Donor-restricted endowment funds	-	1,147,708	1,147,708
Unexpended endowment gains	-	1,376,856	1,376,856
Capital and other designations	937,048	217,692	1,154,740
Pledges and assets held in trust by others	-	293,124	293,124
Split-interest agreements and other donor designations	-	14,919	14,919
Term endowments	-	7,670	7,670
Loan funds	2,473	2,196	4,669
Total Net assets	<u>\$ 2,058,406</u>	<u>\$ 3,060,165</u>	<u>\$5,118,571</u>

13. Derivative Instruments and Hedging Activities

Carnegie Mellon has entered into the following interest rate swap agreements to adjust the exposure to variable interest rates on long-term debt (*dollars in thousands*):

Swap Agreement	Effective Date	Notional Amount	Rate paid by CMU	Interest Received	Term (in years)	Termination Date	Cancellation Option
Apr 2006	Dec 2006	\$ 100,000	3.4%	67% of 1M LIBOR	22	Dec 2028	Dec 2016
May 2007	Jun 2007	\$ 5,125	3.8%	67% of 1M LIBOR	20	Mar 2027	N/A
May 2007	Mar 2012	\$ 40,325	3.8%	67% of 1M LIBOR	20	Mar 2032	N/A
Feb 2012	Mar 2012	\$ 38,000	SIFMA	1.92%	12	Mar 2024	N/A

The following fair values of the swap agreements were recorded as accounts payable and other liabilities and other assets in the consolidated statements of financial position as of June 30, 2022 and 2021 (*dollars in thousands*):

Date of Swap Agreement	Derivatives Reported as (Liabilities)/Assets	
	2022	2021
Apr 2006	\$ (8,508)	\$ (19,003)
May 2007	(407)	(890)
May 2007	(4,972)	(9,766)
Feb 2012	(251)	1,631
Total	<u>\$ (14,138)</u>	<u>\$ (28,028)</u>

The fair value of these agreements is estimated to be an amount that Carnegie Mellon would receive (receivable) or pay (liability) to voluntarily terminate the agreement.

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(dollars in thousands)

Based upon the university's credit rating, the university is required to post collateral equal to the amount by which the liability value exceeds \$30.0 million for each of its counterparties. No collateral was required as of June 30, 2022 and June 30, 2021.

The following interest expense and fair value gains/losses were recorded as other sources under nonoperating activities in the consolidated statements of activities for the years ended June 30, 2022 and 2021 (dollars in thousands):

Date of Swap Agreement	Interest (Expense) Income		Fair Value (Loss) Gain		Total (Loss) Gain	
	2022	2021	2022	2021	2022	2021
Interest rate swaps:						
Apr 2006	(3,243)	(3,337)	10,495	6,257	7,252	2,920
May 2007	(184)	(189)	483	288	299	99
May 2007	(1,447)	(1,484)	4,794	2,881	3,347	1,397
Feb 2012	641	698	(1,882)	(751)	(1,241)	(53)
Total	<u>\$ (4,233)</u>	<u>\$ (4,312)</u>	<u>\$ 13,890</u>	<u>\$ 8,675</u>	<u>\$ 9,657</u>	<u>\$ 4,363</u>

Carnegie Mellon utilizes energy forward contracts, which are physically settled, to hedge against the future changes in the cost of electricity and natural gas. These contracts limit Carnegie Mellon's exposure to higher rates; however, they could also limit the benefit of decreases in rates. These contracts qualify for normal purchases and sales exemptions and are not required to be recognized on the statements of financial position at fair value because Carnegie Mellon takes physical delivery of the electricity and natural gas and the gains and losses are already recognized in the cost.

14. Expenses by Functional Category

Operating expenses by functional category for the year ended June 30, 2022 are as follows (dollars in thousands):

	Instruction & Dpt Research	Sponsored Research	SEI/ARM Activities	Admin & Instl Support	Academic Support	Student Services	Auxiliary	Total
Salaries	\$ 320,817	\$ 156,897	\$ 83,651	\$ 83,981	\$ 76,687	\$30,949	\$ 2,454	\$ 755,436
Benefits	67,818	19,682	20,251	24,340	21,810	8,233	657	162,791
Other Operating Expenses	71,795	68,771	34,610	49,746	52,320	16,439	39,813	333,494
Depreciation and Amortization	29,558	14,498	5,519	5,162	9,952	7,923	9,355	81,967
Interest	3,665	1,798	684	640	1,235	982	4,513	13,517
Total	<u>\$ 493,653</u>	<u>\$ 261,646</u>	<u>\$ 144,715</u>	<u>\$ 163,869</u>	<u>\$162,004</u>	<u>\$64,526</u>	<u>\$56,792</u>	<u>\$1,347,205</u>

Operating expenses by functional category for the year ended June 30, 2021 are as follows (dollars in thousands):

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(dollars in thousands)

	Instruction & Dpt Research	Sponsored Research	SEI/ARM Activities	Admin & Instl Support	Academic Support	Student Services	Auxiliary	Total
Salaries	\$ 302,049	\$ 154,532	\$ 81,105	\$ 76,052	\$ 69,176	\$28,334	\$ 2,280	\$ 713,528
Benefits	66,161	19,903	20,988	26,965	20,593	8,141	664	163,415
Other Operating Expenses	50,435	55,230	35,735	31,992	51,554	10,770	25,657	261,373
Depreciation and Amortization	28,443	14,462	5,694	5,137	10,302	8,187	7,940	80,165
Interest	3,534	1,797	707	638	1,280	1,017	3,154	12,127
Total	<u>\$ 450,622</u>	<u>\$ 245,924</u>	<u>\$ 144,229</u>	<u>\$ 140,784</u>	<u>\$152,905</u>	<u>\$56,449</u>	<u>\$39,695</u>	<u>\$1,230,608</u>

Natural expenses attributable to more than one functional expense category are allocated using a variety of cost allocations such as square footage, time, and effort.

Total fundraising expense of \$28.7 million and \$27.6 million (\$25.6 million and \$24.7 million in administration and institutional support) is included above for the years ended June 30, 2022 and 2021, respectively.

15. Commitments and Contingencies

Carnegie Mellon is a defendant in a number of legal actions seeking damages and other relief. While the final outcome of each action cannot be determined at this time, management records a reserve in operating activities for those cases in which the loss is both probable and estimable. For the other legal actions that are not reserved, legal counsel and management are of the opinion that the liability, if any, will not have a material effect on Carnegie Mellon's consolidated financial statements.

Carnegie Mellon receives significant financial assistance from the federal government, including the sponsorship of federal research projects. Research grants and contracts normally provide for the recovery of direct and indirect costs. Entitlement to the recovery of the applicable direct and related indirect costs is generally conditional upon compliance with the terms and conditions of the grant agreements and applicable federal regulations, including the expenditure of the resources for eligible purposes. Substantially all grants and Carnegie Mellon's indirect cost rate are subject to financial and compliance reviews and audits by the grantors. In management's opinion, the likelihood of an adverse material outcome upon its financial position from those reviews and audits is remote.

Alternative investment partnership commitments totaled \$701.1 million at June 30, 2022. These funds may be drawn down at the request of the general partners over the course of the next several years. Carnegie Mellon expects to finance these commitments through available cash and expected proceeds from the sales of securities.

At June 30, 2022 and 2021 Carnegie Mellon had contractual obligations of approximately \$119.8 million and \$82.5 million, respectively, in connection with major construction projects.

Carnegie Mellon University

Notes to Consolidated Financial Statements

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(dollars in thousands)

16. Retirement Plans and Other Post-Employment Benefits

Carnegie Mellon sponsors two defined contribution retirement plans for eligible faculty and staff, healthcare plans for retirees, and participates in a multi-employer pension fund for union staff. Retirement plan expense for the years ended June 30, 2022 and 2021 totaled \$41.6 million and \$41.9 million, respectively. Carnegie Mellon contributed \$0.9 million to the Central Pension Fund of the International Union of Operating Engineers, a multi-employer plan in fiscal years 2022 and 2021, respectively. See below for a discussion of the assets held in trust to fund post-retirement healthcare and other post-employment benefits.

Carnegie Mellon provides certain health care benefits for eligible retired employees. The liability for post-retirement benefit obligations is recorded in the consolidated statements of financial position in accounts payable and other liabilities.

Net periodic benefit costs recognized in the consolidated statements of activities totaled \$1.8 million and \$1.7 million for the years ended June 30, 2022 and 2021, respectively. Other gains/(losses) in benefit obligations recognized in non-operating activities totaled (\$7.1 million) and (\$0.2 million) for the years ended June 30, 2022 and 2021, respectively. Cumulative net actuarial gains of \$17.9 million and \$10.8 million have been recognized as of June 30, 2022 and 2021, respectively.

During fiscal year 2022, amortization of \$1.1 million actuarial gain is expected to be recognized as components of net periodic benefit cost. The discount rate used in determining the net periodic benefit cost was 3.1% for the years ended June 30, 2022 and 2021, respectively.

The reconciliation of the accumulated benefit obligation and funded status at June 30 2022 is as follows (dollars in thousands):

	<u>2022</u>	<u>2021</u>
Benefit obligation, beginning of year	\$ 25,879	\$ 24,734
Service cost	1,531	1,486
Interest cost	843	807
Assumption changes and actuarial gain/loss	(7,663)	(747)
Benefit payments	<u>(439)</u>	<u>(401)</u>
Benefit obligation, end of year	<u>\$ 20,151</u>	<u>\$ 25,879</u>
Fair value of plans' assets	<u>-</u>	<u>-</u>
Funded status	<u>\$ 20,151</u>	<u>\$ 25,879</u>

The assumed discount rate used for calculating the benefit obligation for the fiscal years ended June 30, 2022 and 2021 was 4.9% and 3.1%, respectively. An annual rate of

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(dollars in thousands)

increase in the per capita cost of covered health care benefits for the fiscal years ended June 30, 2022 and 2021 of 7.0% and 6.25%, respectively, was assumed. For the fiscal years ended June 30, 2022 and 2021, the rate was assumed to decrease gradually to 5.25% by 2026 and remain at 5.0% thereafter.

Expected benefits to be paid in future fiscal years are as follows (dollars in thousands):

June 30	Retiree Contributions	Employer Payments	Total Expected Benefit Payments
2022	\$ 678	\$ 397	\$ 1,075
2023	1,013	565	1,578
2024	1,333	736	2,069
2025	1,633	884	2,517
2026	1,900	996	2,896
2027-2031	12,760	5,928	18,688

In conjunction with an agreement made with the federal government, Carnegie Mellon has established a separate trust, which is available to general creditors only in the event of insolvency. Assets in the trust to fund post-retirement health care and other post-employment benefits are \$22.7 million as of June 30, 2022 and 2021. These assets are reflected as investments in the accompanying consolidated statements of financial position.

17. Related Party Transactions

Sponsored projects revenue for fiscal years 2022 and 2021 includes \$3.7 million and \$3.0 million respectively, received from MPC, a nonprofit related entity of Carnegie Mellon and the University of Pittsburgh. The revenue primarily represents federal funding from various contracts received by MPC, for which MPC has subcontracted to Carnegie Mellon for support of a supercomputer and related activities.

Carnegie Mellon is an owner as a tenant in common of the Bellefield Boiler Plant ("Bellefield") for the purpose of sharing of the steam produced by the plant. Bellefield operates such that all of the operating costs of the plant are passed to the owners in the form of steam prices. Carnegie Mellon is obligated for a percent of liabilities based upon use of steam produced by Bellefield. As of June 30, 2022 and 2021, Carnegie Mellon's percentage obligation was 15.2%. Included in other assets is \$0.6 million and \$1.0 million of advances resulting primarily from operating surpluses at June 30, 2022 and 2021, respectively. Included in occupancy and related expenses is \$3.9 million and \$4.0 million for steam costs paid to Bellefield for the years ended June 30, 2022 and 2021, respectively.

Carnegie Mellon is one of fifteen designated institutions of higher learning and other charitable organizations named as beneficiaries of The Dietrich Foundation (the "Foundation") created by William S. Dietrich II pursuant to an Amended and Restated Declaration of Trust dated August 23, 2011. The Foundation came into existence as a Pennsylvania charitable trust on October 6, 2011 and was granted exemption from Federal income tax under section 501(c)(3) of the Internal Revenue Code, specifically

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(dollars in thousands)

as a Type I charitable supporting organization under section 509(a)(3). The Foundation's primary mission is to provide ongoing and increasing financial support to a number of educational institutions, largely in the greater Pittsburgh area, including Carnegie Mellon. The Foundation is governed by a Board of nine Trustees of which two are appointed by Carnegie Mellon.

The Foundation is expected to make annual distributions that will be allocated among the pre-specified supported organizations. As of June 30, 2022, Carnegie Mellon's distribution share remained at 53.5%.

The distributions to Carnegie Mellon have been recorded as contribution revenue with donor restrictions as received and held in endowment net assets with donor restrictions designated as Dietrich Foundation Endowment Funds. The endowed funds will be managed in accordance with Carnegie Mellon's generally applicable investment and disbursement policies in effect for its other permanently restricted endowments. Distributions made from the endowed funds will be used for the purposes authorized by the Foundation's Trustees. Distributions of \$22.8 million and \$17.3 million were received in fiscal years 2022 and 2021, respectively.

18. Guarantees

In the ordinary course of business, Carnegie Mellon engages in transactions with third parties involving the provision of goods and/or services. The contracts for these transactions may require Carnegie Mellon to indemnify the third party or others under certain circumstances. The terms of indemnity vary from contract to contract. The amount of the liability associated with such indemnification obligations, if any, is not expected to be material.

Carnegie Mellon has contractually agreed to indemnify its trustees and officers, and in some cases its employees and agents, against certain liabilities incurred as a result of their service on behalf of or at the request of Carnegie Mellon and also advances, on behalf of those indemnified, the costs incurred by them in defending certain claims. Carnegie Mellon carries insurance that limits its exposure for this indemnification obligation. The amount of the liability associated with any known pending or threatened claims covered by this indemnification obligation, if any, is not expected to be material.

Carnegie Mellon has contractually agreed to indemnify specified parties in connection with bond offerings in which it has been involved. The indemnification obligation covers losses, claims, damages, liabilities and other expenses incurred by the underwriters as a result of any untrue statements or material omissions made by Carnegie Mellon in connection with the bond offerings. The amount of the liability associated with any known pending or threatened claims covered by this indemnification obligation, if any, is not expected to be material.

19. COVID-19 Pandemic

In March 2020, the World Health Organization declared the novel coronavirus ("COVID-19") a pandemic. During fiscal 2021, the university operated under a modified campus posture, utilizing a hybrid education model, de-densified residence and dining facilities, and on-campus core campus based activities. Beginning July 1, 2021, the university is operating under a transitional campus posture, with instruction predominately in person,

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increased residence and dining facility density, and the transition of other campus-based activities to on campus with flexible arrangements. The university provided emergency financial aid to students under the Coronavirus Aid, Relief, and Economic Security Act (CARES Act) totaling \$9.9 million and \$2.9 million during the years ended June 30, 2022 and 2021, respectively. The university recognized revenue from federal and other governmental funding related to the COVID-19 pandemic totaling \$12.2 million and \$7.3 million during the years ended June 30, 2022 and 2021, respectively, which is included in other revenue sources on the consolidated statement of activities. While future impacts of the COVID-19 pandemic cannot be quantified at this time, the university continues to monitor legislative developments, future relief funding opportunities and directives from federal, state and local governments and, if necessary, is prepared to take additional measures to ensure the health and welfare of the university.

20. Subsequent Events

The university has performed an evaluation of subsequent events through October 13, 2022, the date on which the consolidated financial statements were issued.

Schedule of Expenditures of Federal Awards

Federal Program	Assistance Listing Number	Direct	Pass-Through	Pass-Through Entity	Pass-Through Entity Sponsor Number	Federal Expenditures	Passed to Subrecipient
US DEPARTMENT OF HOMELAND SECURITY							
Disaster Grants- Public Assistance	97.036		64,031	Pennsylvania Emergency Management Agency		64,031	-
US DEPARTMENT OF HEALTH AND HUMAN SERVICES							
Child Care and Development Block Grant	93.575		210,911	PA Office of Child Development and Early Learning		210,911	-
US DEPARTMENT OF EDUCATION							
COVID-19 - Higher Education Emergency Relief Fund - Student Portion	84.425E	9,872,288	-			9,872,288	-
COVID-19 - Higher Education Emergency Relief Fund - Institutional Portion	84.425F	628,138	-			628,138	-
Subtotal 84.425		10,500,426	274,942			10,775,368	-
STUDENT FINANCIAL ASSISTANCE CLUSTER							
US DEPARTMENT OF EDUCATION							
Office of Federal Student Aid							
Federal Supplemental Educational Opportunity Grants (FSEOG)	84.007	2,424,954	-			2,424,954	-
Federal Work-Study Program (FWS)	84.033	650,761	-			650,761	-
Federal Perkins Loan Program	84.038	5,727,073	-			5,727,073	-
Federal Pell Grant Program (Pell)	84.063	5,436,198	-			5,436,198	-
Federal Direct Student Loans (Direct Loan)	84.268	50,222,703	-			50,222,703	-
Total Student Financial Assistance Cluster		64,461,689	-			64,461,689	-
Total US Department of Education		74,962,115	-			74,962,115	-
RESEARCH and DEVELOPMENT CLUSTER							
US DEPARTMENT OF AGRICULTURE							
National Institute of Food and Agriculture							
Agriculture and Food Research Initiative (AFRI)	10.310	666,414	-			666,414	3,540
Agriculture and Food Research Initiative (AFRI)	10.310	-	592,291	Iowa State University	024408B	592,291	-
Total US Department of Agriculture		666,414	592,291			1,258,705	3,540
US DEPARTMENT OF COMMERCE							
National Oceanic and Atmospheric Administration							
Climate and Atmospheric Research	11.431	8,005	-			8,005	-
Climate and Atmospheric Research	11.431	-	33,227	Rand Corporation	SCON00000443	33,227	-
National Institute of Standards and Technology (NIST)							
Measurement and Engineering Research Standards	11.609	532,083	-			532,083	62,083
Measurement and Engineering Research Standards	11.609	-	157,994	Iowa State University	022284A	157,994	-
Arrangements for Interdisciplinary Research Infrastructure	11.619	-	283,950	University of Delaware	ARP7UDR0000099	283,950	-
Arrangements for Interdisciplinary Research Infrastructure	11.619	-	23,477	University of Delaware	PC10038	23,477	-
Arrangements for Interdisciplinary Research Infrastructure	11.619	-	33,818	University of Delaware	PC22105	33,818	-
Arrangements for Interdisciplinary Research Infrastructure	11.619	-	56,615	University of Delaware	PC2210957684	56,615	-
Arrangements for Interdisciplinary Research Infrastructure	11.619	-	3,595	University of Delaware	PO58088PC31127	3,595	-
Arrangements for Interdisciplinary Research Infrastructure	11.619	-	94,575	University of Delaware	POUDR0000112	94,575	-
Total US Department of Commerce		540,088	687,251			1,227,339	62,083
US DEPARTMENT OF DEFENSE							
US DEPARTMENT OF THE NAVY							
Intergovernmental Personnel Act (IPA) Agreement	12.1141325	65,674	-			65,674	-
US Navy Fellow	12.A024370	(742)	-			(742)	-
Navy Federal Executive Fellowship	12.FP00006557MANUEL	26,067	-			26,067	-
IPA - Samuel Weber	12.N0001421PR01318	200,800	-			200,800	-
Built-In Adaptive Systems Testing BAST	12.N0042121C0002	987,751	-			987,751	-
Sharpfocus: Attaining Sub-Millimeter and Millisecond Resolution for Noninvasive Stimulation and Sensing	12.N6523619C8017	2,489,426	-			2,489,426	(161)
CUES: Cyber-Mediated Usable Emotional Sensors	12.RD	-	329,406	Carley Technologies Inc.	OSP00001721	329,406	-
Glow II	12.RD	-	50,631	Charles River Analytics Inc.	SC1719002	50,631	-
Real-Time Intelligent Planning and Control System (RIPACS)	12.RD	-	50,507	Perceptronics Solutions Inc.	1990783	50,507	-
An Informatics Paradigm for Predicting Organic Chemical Stability	12.RD	-	350,261	Purdue University	13001029023	350,261	-
Codes: Compositional DsIs for Enhancing Software	12.RD	-	52,239	Vanderbilt University	OSA00000016P22031043	52,239	-
Basic and Applied Scientific Research	12.300	11,672,718	-			11,672,718	1,893,412
Basic and Applied Scientific Research	12.300	-	158,973	Boston University	4500002946	158,973	-
Basic and Applied Scientific Research	12.300	-	216,390	Georgia Institute of Technology	AWD102969G1	216,390	-

Federal Program	Assistance Listing Number	Direct	Pass-Through	Pass-Through Entity	Pass-Through Entity Sponsor Number	Federal Expenditures	Passed to Subrecipient
Basic and Applied Scientific Research				Johns Hopkins University Applied Physics Laboratory			
	12.300	-	(7,059)		146615	(7,059)	-
Basic and Applied Scientific Research	12.300	-	65,899	Northwestern University	60053155CMU	65,899	-
Basic and Applied Scientific Research	12.300	-	120,837	Pennsylvania State University	S000296ONR	120,837	-
Basic and Applied Scientific Research	12.300	-	2,561	The Regents of the University of California	00010919	2,561	-
Basic and Applied Scientific Research	12.300	-	24,906	The Regents of the University of California	1015GTA244	24,906	-
Basic and Applied Scientific Research	12.300	-	(1,299)	University of Maryland	4335028665001	(1,299)	-
Basic and Applied Scientific Research	12.300	-	163,318	William Marsh Rice University	R1A841	163,318	-
Research and Technology Development	12.910	-	764,140	The Regents of the University of California	00010216	764,140	-
Total US Department of the Navy		15,441,694	2,341,710			17,783,404	1,893,251
US DEPARTMENT OF THE ARMY							
IPA US Army War College - Dani Nedal	12.1130271	80,860	-			80,860	-
US Army War College Fellows W/Institute for Politics and Strategy	12.FP00000184CURTIS	22,814	-			22,814	-
US Army War College Fellows W/Institute for Politics and Strategy	12.FP00000184NEEDHAM	(9)	-			(9)	-
Army War College Fellowships AY2021-2022 to AY2025-2026	12.FP00006939ALLEN	19,295	-			19,295	-
Army War College Fellowships AY2021-2022 to AY2025-2026	12.FP00006939MCCLURE	19,295	-			19,295	-
Unmanned and Autonomous Systems Test (UAST) Science & Technology (S&T) - Robustness Inside-Out Testing (RIOT): Automated White-Box Stress Testing of UAS Software	12.W900KK16C0006	(22,815)	-			(22,815)	(22,815)
Autonomous Delivery of Trauma Care In The Field	12.W81XWH19C0083	1,344,658	-			1,344,658	705,492
Enabling Enhanced Situational Awareness and Human Augmentation Through Efficient Autonomous Systems	12.W911QX20D0008	4,412,712	-			4,412,712	2,010,450
AI for Cybersecurity	12.W911NF20D0002	16,318,493	-			16,318,493	1,591,677
NREC Support for The Agvra Effort	12.RD	-	77,169	DCS Corporation	DCSS19020PO211001	77,169	-
NREC Support of The DARPA Assured Autonomy Program	12.RD	-	5,744	DCS Corporation	DCSS19020PO211021	5,744	-
Robortch Modular Automation	12.RD	-	528,354	DCS Corporation	DCSS19020PO230610	528,354	-
Hydraulic, Chemical, and Microbiological Effects On The Performance of In-Situ Activated Carbon Sorptive Barrier for PFAS Remediation In Coastal Sites	12.RD	-	45,493	George Washington University	22SC09	45,493	-
CMOS MEMS High-Stability Accelerometer Through Machine Learning	12.RD	-	-	Semiconductor Equipment and Materials International	FT1921P208	252,517	-
Trauma Care In A Ruckshack (TRACIR)	12.RD	-	237,241	University of Pittsburgh	AWD000003811	237,241	-
Military Medical Research and Development	12.420	828,213	-			828,213	207,483
Military Medical Research and Development	12.420	-	10,150	Boston University	4500002827	10,150	-
Military Medical Research and Development	12.420	-	5,101	University of Pittsburgh	AWD000029514170191	5,101	-
Military Medical Research and Development	12.420	-	10,378	University of Pittsburgh	AWD000052454186921	10,378	-
Basic Scientific Research	12.431	8,210,904	-			8,210,904	1,338,907
Basic Scientific Research	12.431	-	149,132	California Institute of Technology	S429044	149,132	-
Basic Scientific Research	12.431	-	(3,174)	Duke University	3130860	(3,174)	-
Basic Scientific Research	12.431	-	238,805	Duke University	3131034	238,805	-
Basic Scientific Research	12.431	-	41,761	National Center for Manufacturing Sciences	2019109130715	41,761	-
Basic Scientific Research	12.431	-	(7,085)	Princeton University	SUB0000251	(7,085)	-
Basic Scientific Research	12.431	-	199,735	University of Central Florida	64016420	199,735	-
Basic Scientific Research	12.431	-	(21,300)	University of Illinois at Urbana-Champaign	09243017089	(21,300)	-
Basic Scientific Research	12.431	-	124,193	University of Southern California	9268877SCON00001536	124,193	-
Basic Scientific Research	12.431	-	275,043	University of Sydney	G207324	275,043	-
Basic Scientific Research	12.431	-	231,316	University of Wisconsin-Madison	0000001468	231,316	-
Basic, Applied, and Advanced Research in Science and Engineering	12.630	636,566	-			636,566	122,671
Basic, Applied, and Advanced Research in Science and Engineering	12.630	-	11,389	Drexel University	940018POU0249595	11,389	-
Basic, Applied, and Advanced Research in Science and Engineering	12.630	-	389,459	Pennsylvania State University	4938CMUARMY0045	389,459	-
Basic, Applied, and Advanced Research in Science and Engineering	12.630	-	381,767	University of Illinois at Urbana-Champaign	08883118409	381,767	-
Basic, Applied, and Advanced Research in Science and Engineering	12.630	-	219,480	University of Pennsylvania	581208PO4601904	219,480	-
Basic, Applied, and Advanced Research in Science and Engineering (Advanced Robotics for Manufacturing Institute - ARM)	12.630	15,545,617	-			15,545,617	-
Research and Technology Development	12.910	609,670	-			609,670	-
Research and Technology Development	12.910	-	102,247	University of Maryland	86179Z9448202	102,247	-
Research and Technology Development	12.910	-	(11,990)	University of Pittsburgh	CNVA000584714139331	(11,990)	-
Total US Department of the Army		48,026,273	3,492,925			51,519,198	5,953,865
US DEPARTMENT OF THE AIR FORCE							
SEI 2015 Contract	12.FA870115D0002	128,847,427	-			128,847,427	2,794,860
IPA-019 Rhoades	12.IPA-019	124,648	-			124,648	-
IPA-021 Mattson	12.IPA-021	188,465	-			188,465	-
IPA-021 Fritz	12.IPA-021	155,389	-			155,389	-
COGDECON: Cognitive Decentralized Classification Onboard	12.RD	-	39,661	BAE Systems	1018286	39,661	-
Multi-Domain Adaptive Request Service (MARS)	12.RD	-	527,668	BAE Systems	1038072	527,668	-
Materials & Manufacturing - Research On Two Dimensional (2D) Materials and Manufacturing	12.RD	-	141,547	Clarkson Aerospace Corporation	CMU2110460	141,547	-
Deep Neural Networks for Speech Recognition	12.RD	-	27,791	Massachusetts Institute of Technology	PO700509480	27,791	-

Federal Program	Assistance Listing Number	Direct	Pass-Through	Pass-Through Entity	Pass-Through Entity Sponsor Number	Federal Expenditures	Passed to Subrecipient
A Software toolkit for Predicting The Neural Signatures of Cognitive States Using							
Eeg to Identify Critical Events In An Extended Task	12.RD	-	65,649	Soar Technology Inc.	SC20001	65,649	-
Information Maneuver Games and Bots	12.RD	-	122,628	Wright State Applied Research Corporation	11076CMU	122,628	-
Basic and Applied Scientific Research	12.300	1,721,385	-			1,721,385	329,812
Basic and Applied Scientific Research	12.300	-	86,417	Duke University	3131041	86,417	-
Air Force Defense Research Science Program	12.800	5,797,960	-			5,797,960	380,259
Air Force Defense Research Science Program	12.800	-	25,069	Areca Inc.	OSP00001816	25,069	-
Air Force Defense Research Science Program	12.800	-	345,009	California Institute of Technology	681098507S414837	345,009	-
Air Force Defense Research Science Program	12.800	-	172,156	California Institute of Technology	S421546	172,156	-
Air Force Defense Research Science Program	12.800	-	25,488	Lifeware Labs LLC	OSP00002288	25,488	-
Air Force Defense Research Science Program				National Center for Defense Manufacturing and			
	12.800	-	(82,765)	Machining	PO20200014	(82,765)	-
Air Force Defense Research Science Program	12.800	-	236,516	North Carolina State University	2019213301	236,516	-
Air Force Defense Research Science Program	12.800	-	53,308	Pennsylvania State University	S000728AFOSR	53,308	-
Air Force Defense Research Science Program	12.800	-	(49,192)	Syracuse University	2871704936S01	(49,192)	-
Air Force Defense Research Science Program	12.800	-	25,103	The Regents of the University of California	00010867POB801548277	25,103	-
Air Force Defense Research Science Program	12.800	-	127,209	University of Pittsburgh	CNVA00617584144221	127,209	-
Air Force Defense Research Science Program	12.800	-	455,749	University of San Diego	A210038S001	455,749	-
Air Force Defense Research Science Program	12.800	-	109,859	University of San Diego	A210038S002	109,859	-
Air Force Defense Research Science Program	12.800	-	50,254	University of Texas at Austin	UTA20001226	50,254	-
Air Force Defense Research Science Program	12.800	-	(12,178)	University of Texas at El Paso	226030260A	(12,178)	-
Air Force Defense Research Science Program	12.800	-	69,471	University of Texas at El Paso	226030265A	69,471	-
Air Force Defense Research Science Program	12.800	-	238	University of Washington	UWSC10811BPO35507	238	-
Air Force Defense Research Science Program	12.800	-	220,214	University of Washington	UWSC11380	220,214	-
Air Force Defense Research Science Program	12.800	-	145,236	University of Washington	UWSC11418BPO43188	145,236	-
Research and Technology Development	12.910	2,856,930	-			2,856,930	-
Research and Technology Development	12.910	-	40,395	University of Michigan	SUBK00009959PO3005523666	40,395	-
Research and Technology Development	12.910	-	49,804	University of Southern California	124133807	49,804	-
Research and Technology Development	12.910	-	82,106	University of Tulsa	142120354894802	82,106	-
Research and Technology Development	12.910	-	35,629	University of Washington	UWSC13112	35,629	-
Total US Department of the Air Force		139,692,204	3,136,039			142,828,243	3,504,931
DEFENSE ADVANCED RESEARCH PROJECT AGENCY (DARPA)							
IPA Agreement	12.A023514	293,783	-			293,783	-
IPA Agreement	12.A025215	241,017	-			241,017	-
A Robust and Adaptive Agent That Supports High Performance Teams	12.HR001120C0036	1,191,434	-			1,191,434	309,250
Differentiable Everything for Autonomous Driving Fast: Dead Fast	12.HR001121C0189	2,628,907	-			2,628,907	136,615
Brainstorms - Brain System to Transmit Or Receive Magnetolectric Signals	12.RD	-	604,909	Battelle Memorial Institute	US0010000807814	604,909	-
Assured Micropatching (AMP) Technical Area (TA) #2: Assured Recompliation	12.RD	-	246,614	Charles Stark Draper Laboratory Inc.	SC0010000001354	246,614	-
NTTX Powered By Spiral: Bridging Palisade to Laws	12.RD	-	690,813	Duality Technology Inc.	1043212	690,813	463,111
Predicting Effective Performance In Teams	12.RD	-	224,303	Florida Institute for Human & Machine Cognition	HR001120C00371	224,303	-
Assured Autonomy - LE-CPS Modeling & Verification	12.RD	-	84,550	HRL Laboratories LLC	17090181689USPOLINE13	84,550	-
Assured Autonomy - CPS Behavior Modeling & Control	12.RD	-	50,163	HRL Laboratories LLC	17090181689USPOLINE14	50,163	-
Assured Autonomy - Concurrency & Le-Cps	12.RD	-	70,203	HRL Laboratories LLC	17090181689USPOLINE15	70,203	-
Assured Autonomy - Efficient Runtime Monitoring	12.RD	-	174,208	HRL Laboratories LLC	17090181689USPOLINE16	174,208	-
Assured Autonomy - Learning Safety Constraints	12.RD	-	40,299	HRL Laboratories LLC	17090181689USPOLINE17	40,299	-
Assured Autonomy - Dynamic Assurance	12.RD	-	62,683	HRL Laboratories LLC	17090181689USPOLINE18	62,683	-
Cognitive Aid for Vulnerability Analysis	12.RD	-	177,322	HRL Laboratories LLC	190462X2165US	177,322	-
Synergy of Learning Inputs and Decisions for Machine Learning	12.RD	-	10,176	Perspecta Labs Inc.	PO0019177	10,176	-
End-to-End Machinery for Proving Highly Sensitive Application-Oriented							
Statements In Zero-Knowledge (Emphasize)	12.RD	-	114,520	SRI International	53978	114,520	-
NSCORE: Neuro-Symbolic Co-Designer Using Oracle-Guided Synthesis & Reinforcement Learning	12.RD	-	120,222	SRI International	61446	120,222	-
Multi-Media Analytics Leading to Intent and Semantic Evidence (Malise)	12.RD	-	(488)	SRI International	PO049199	(488)	-
Elicit: A System for Extracting and Organizing Causal Information	12.RD	-	5,546	University of Southern California	93146501	5,546	-
Active Illumination and Imaging Across Millisecond to Picosend Time Scales for							
General Los/Nlos Scene Understanding	12.RD	-	(2,000)	University of Wisconsin-Madison	832K112	(2,000)	-
Basic and Applied Scientific Research	12.300	-	(1,009)	AFRL Rome, NY	FA87501520277	(1,009)	(1,009)
Basic and Applied Scientific Research	12.300	-	373,456	AFRL Rome, NY	FA87501720130	373,456	-
Scientific Research - Combating Weapons of Mass Destruction	12.351	416,661	-			416,661	-
Research and Technology Development	12.910	1,834,705	-			1,834,705	640,060
Research and Technology Development	12.910	-	(7,133)	Department of The Interior	D19AP00033	(7,133)	-
Research and Technology Development	12.910	-	1,175,936	Northwestern University	60059016CMU	1,175,936	-
Research and Technology Development	12.910	-	4,509	Pennsylvania State University	S002733DARPA	4,509	-
Research and Technology Development	12.910	-	7,144,189	Semiconductor Research Corporation	2018JU2779	7,144,189	4,343,179
Research and Technology Development	12.910	-	1,797,922	Spawarsyscen San Diego	N660011724064	1,797,922	1,237,054
Research and Technology Development	12.910	-	131,334	Toyota Technological Institute at Chicago	T00311601	131,334	-
Research and Technology Development	12.910	-	18,365	University of California-San Francisco	11331SC	18,365	-
Research and Technology Development	12.910	-	285,852	University of Pittsburgh	AWD000015934160525	285,852	-

Federal Program	Assistance Listing Number	Direct	Pass-Through	Pass-Through Entity	Pass-Through Entity Sponsor Number	Federal Expenditures	Passed to Subrecipient
Research and Technology Development	12.910	-	200,707	University of Pittsburgh	AWD000015934160525A	200,707	-
Total DARPA		6,606,507	13,798,171			20,404,678	7,128,260
US MARINE CORPS							
Scientific Research - Combating Weapons of Mass Destruction	12.351	808,209	-			808,209	378,278
Basic, Applied and Advanced Research in Science and Engineering	12.630	263,340	-			263,340	-
Total US Marine Corps		1,071,549	-			1,071,549	378,278
US DEPARTMENT OF DEFENSE - OTHER							
CMU Science of Security Label: Taking on the Hard Problems	12.H9823018D0008	932,665	-			932,665	87,004
Acacia Subcontract: Robust Speech Recognition	12.RD	-	118,991	Probity Inc.	ACACIACMU202101	118,991	-
Acacia Subcontract: Robust Speech Recognition - Modification #1	12.RD	-	129,804	Probity Inc.	ACACIACMU20210Y101	129,804	-
National Defense Education Program	12.006	-	3,764	University of Pittsburgh	AWD000046634182911	3,764	-
Information Security Grants	12.902	151,177	-			151,177	-
Community Investment	12.600	-	38,184	Catalyst Connection	PO00003510CATALYST21011	38,184	-
Community Investment	12.600	-	74,415	Catalyst Connection	PO00003749CATALYST21011	74,415	-
Community Investment	12.600	-	133,394	Catalyst Connection	PO00003899CATALYST21011	133,394	-
Economic Adjustment Assistance for State Governments	12.617	-	(2,726)	University of Utah	10052452CMU	(2,726)	-
Economic Adjustment Assistance for State Governments	12.617	-	85,545	University of Utah	U000328585	85,545	-
Basic, Applied and Advanced Research in Science and Engineering	12.630	-	34,693	University of Illinois at Urbana-Champaign	10407118530	34,693	-
Total US Department of Defense - Other		1,083,842	616,064			1,699,906	465,282
TOTAL - US DEPARTMENT OF DEFENSE		211,922,069	23,384,909			235,306,978	18,945,589
INTELLIGENCE ADVANCED RESEARCH PROJECTS ACTIVITY (IARPA)							
Train Deploy and Adapt Elastic Deep Learning Models for Biometric Recognition	99.2022211	127,007	-			127,007	-
Deep Intermodal Video Analytics (DIVA)	99.RD	-	861,735	Department of The Interior	D17PC00340	861,735	-
High-Fidelity Population-Level forecasting Models of Human Psychology and Behavior In Response to Non-Pharmaceutical Interventions and (Dis)Information Campaigns	99.RD	-	155,602	Florida Institute for Human & Machine Cognition	202020092500001	155,602	-
Total IARPA		127,007	1,017,337			1,144,344	-
US DEPARTMENT OF EDUCATION							
Graduate Assistance in Areas of National Need	84.200	418,390	-			418,390	-
Education Research, Development and Dissemination	84.305	165,329	-			165,329	109,270
Education Research, Development and Dissemination	84.305	-	28,503	Middle Tennessee State University	53720777773	28,503	-
Total US Department of Education		583,719	28,503			612,222	109,270
US DEPARTMENT OF ENERGY (DOE)							
ORISE IC Postdoctoral Research Fellowship-Nick Byrd	81.A025717	4,614	-			4,614	-
Robust Extreme-Scale Multimodal Structural Learning From Spatio-Temporal Data	81.RD	-	223,999	Brookhaven National Laboratory	384608	223,999	-
High Luminosity (HL) LHC CMS Detector Upgrade Project Endcap Calorimeter	81.RD	-	122,721	Fermi National Laboratory	654027	122,721	-
Microstructure Features of 304 Stainless Steel and their Impacts on Corrosion	81.RD	-	43,408	Fluor Marine Propulsion LLC	PO132944	43,408	-
Latch Based Logic Locking and Characterization	81.RD	-	26,917	Fluor Marine Propulsion LLC	N000374968	26,917	-
IECM Maintenance	81.RD	-	59,212	Keylogic	PO5000016002	59,212	-
Research on Reduced Complexity Modeling of the Electricity System in the United States	81.RD	-	94,989	Keylogic	PO5000016009	94,989	-
Advanced Optimization Strategies for Bubbling Fluidized Bed Processes in FTX: A Co-Design Project for Fast Fourier Transforms	81.RD	-	(97)	Lawrence Berkeley National Laboratory	7208191	(97)	-
Expert Review of Nexant National Interruption Cost Survey Roadmap	81.RD	-	178,166	Lawrence Berkeley National Laboratory	7421006	178,166	-
Machine Learning Platform for Catalyst Design	81.RD	-	47,057	Lawrence Berkeley National Laboratory	7436048	47,057	-
Machine Learning and Artificial Intelligence	81.RD	-	2,345	Lawrence Berkeley National Laboratory	7542403	2,345	-
Design of Flexible Dynamic Energy Systems	81.RD	-	357,022	Lawrence Berkeley National Laboratory	7585823	357,022	-
Dynamics and Control of Flexible Integrated Energy Systems	81.RD	-	173,690	Lawrence Berkeley National Laboratory	7590404	173,690	-
Integrated Energy Systems for Power and Blue Hydrogen Co-Production	81.RD	-	90,955	Lawrence Berkeley National Laboratory	7591022	90,955	-
Study of The Machine Learning (ML) Component of the Enhanced Radiological Nuclear Inspection and Evaluation System (Ernie)	81.RD	-	79,116	Lawrence Berkeley National Laboratory	7591064	79,116	-
Explainable and Small Data Machine Learning for Accelerating Feedstock Optimization	81.RD	-	62,794	Lawrence Livermore National Laboratory	B622976	62,794	-
Molecular Crystal Shape Prediction With Solvent Effects	81.RD	-	33,532	Lawrence Livermore National Laboratory	B643510	33,532	-
Machine Learning (ML) Component of The Ernie System - Ernie 3	81.RD	-	62,742	Lawrence Livermore National Laboratory	B644504	62,742	-
Study of the ML Component of the EML-Raptor System	81.RD	-	100,475	Lawrence Livermore National Laboratory	B649543	100,475	-
Solid Oxide Fuel Cells	81.RD	-	18,676	Lawrence Livermore National Laboratory	B649585	18,676	-
Computational Fluid Dynamics Modeling for Memcsea Hollow Fiber Membranes	81.RD	-	19,593	Leidos Inc.	TASK11P010220961	19,593	-
Optimizing Co2 Storage In A Conventional Reservoir	81.RD	-	31,470	Leidos Inc.	TASK13P010220961	31,470	-
Reducing FGD Effluent Selenium Anions into Elemental Nanoparticles	81.RD	-	59,895	Leidos Inc.	TASK14P010220961	59,895	-
		-	98,612	Leidos Inc.	TASK16P010220961	98,612	-

Federal Program	Assistance Listing Number	Direct	Pass-Through	Pass-Through Entity	Pass-Through Entity Sponsor Number	Federal Expenditures	Passed to Subrecipient
Decarbonized Direct Reduced Iron Process Enhanced by Chemical Looping Applications	81.RD	-	2,668	Leidos Inc.	TASK17P010220961	2,668	-
Advanced Reactor Manufacturing	81.RD	-	125,274	Leidos Inc.	TASK1P010220961	125,274	-
Electrode Structural Evaluation	81.RD	-	112,664	Leidos Inc.	TASK3P010220961	112,664	-
High Performance Computing of Electrode Subvolume Performances	81.RD	-	110,019	Leidos Inc.	TASK4P010220961	110,019	-
Co2 Geochemical Monitoring: Signal Modeling and Application	81.RD	-	83,994	Leidos Inc.	TASK6P010220961	83,994	-
LANL Institute for Reliable High Performance Information Technology	81.RD	-	38,617	Los Alamos National Laboratory	394903	38,617	-
Versatile Data Management Services for Future DOE Science	81.RD	-	126,943	Los Alamos National Laboratory	520262	126,943	-
Fuel Cells for Heavy Duty Vehicles	81.RD	-	45,223	Nikola Motor Company LLC	OSP00002214	45,223	-
Get It Moving: Rapid Development of Hard-to-Control Robots with Optimality Tradeoffs	81.RD	-	7,492	Oak Ridge Institute for Science and Education	SAWDWD00850	7,492	-
NNSA:Usable and Explainable Models for Global-Scale Cross Lingual Proliferation Expertise Identification and Forecasting	81.RD	-	5,100	Pacific Northwest National Laboratory	545998	5,100	-
Archer Working Title: Shuttle Run Design	81.RD	-	237,686	Sandia National Laboratories	2068241	237,686	-
Study of Seismic Gradiometry to Classify The Seismic Source	81.RD	-	36,963	Sandia National Laboratories	2218476	36,963	-
Radiation Hardened By Design (RHBD) Testing	81.RD	-	414,041	Sandia National Laboratories	2295183	414,041	-
Machine Learning and The Scattering Transformation to Solve The 1D Burger'S Equation and the 2D Navier-Stokes Equation	81.RD	-	1,344	Sandia National Laboratories	1501830PO2086574	1,344	-
Machine Learning and The Scattering Transformation to Solve The 1D Burgers Equation and The 2D Navier-Stokes Equation	81.RD	-	114,133	Sandia National Laboratories	2158554PO2311498	114,133	-
Raven Test Articles in 16Nm and 10Nm CMOS	81.RD	-	157,977	Sandia National Laboratories	PO1903629	157,977	-
Requirements Optimization for Intelligent Scientific Control Systems	81.RD	-	6,130	Sandia National Laboratories	PO2193666	6,130	-
Requirements Optimization for Intelligent Scientific Control Systems	81.RD	-	87,041	Sandia National Laboratories	PO2256223	87,041	-
DESC Analysis Coordinator	81.RD	-	(2,194)	National Accelerator Laboratory - Stanford	178958	(2,194)	-
Study of Visibility In Unified Model	81.RD	-	56,222	UT-Battelle	40001842214000192833	56,222	-
Office of Science Financial Assistance Program	81.049	4,580,366	-			4,580,366	639,704
Office of Science Financial Assistance Program	81.049	-	38,656	Brigham Young University	210573	38,656	-
Office of Science Financial Assistance Program	81.049	-	133,091	Brown University	00001295	133,091	-
Office of Science Financial Assistance Program	81.049	-	(4,849)	Columbia University	2GG01449618	(4,849)	-
Office of Science Financial Assistance Program	81.049	-	116,442	Cornell University	8598911163	116,442	-
Office of Science Financial Assistance Program	81.049	-	112,608	Pennsylvania State University	5923CMUODOE9200	112,608	-
Office of Science Financial Assistance Program	81.049	-	113,029	Pennsylvania State University	S000066USDOE	113,029	-
Office of Science Financial Assistance Program	81.049	-	139,638	University of Minnesota	A007230202	139,638	-
Office of Science Financial Assistance Program	81.049	-	339,297	University of Pittsburgh	CNVA000019794014243	339,297	-
Office of Science Financial Assistance Program	81.049	-	24,034	University of Washington	UWSC12398BPO52426	24,034	-
University Coal Research	81.057	31,937	-			31,937	-
Conservation Research and Development	81.086	1,512,278	-			1,512,278	420,303
Conservation Research and Development	81.086	-	127,988	Eaton Corporation	DEEE0009135CMUPO4135218745	127,988	-
Conservation Research and Development	81.086	-	10,338	Los Angeles Cleantech Incubator	24201641	10,338	-
Conservation Research and Development	81.086	-	10,308	University of Minnesota	A006948101	10,308	-
Conservation Research and Development	81.086	-	28,541	University of Texas at San Antonio	1000003898	28,541	-
Renewable Energy Research and Development	81.087	103,768	-			103,768	99,138
Renewable Energy Research and Development	81.087	-	148,408	Dow Chemical Company	62071	148,408	-
Renewable Energy Research and Development	81.087	-	173,114	The Regents of the University of California	A192112S001	173,114	-
Renewable Energy Research and Development	81.087	-	113,154	University of Kansas	FY2019077	113,154	-
Fossil Energy Research and Development	81.089	181,982	-			181,982	-
Fossil Energy Research and Development	81.089	-	54,341	Pennsylvania State University	S000030USDOE	54,341	-
Fossil Energy Research and Development	81.089	-	138,666	Pennsylvania State University	S000663DOE	138,666	-
Environmental Remediation and Waste Processing and Disposal	81.104	185,175	-			185,175	-
Defense Nuclear Nonproliferation Research	81.113	302,312	-			302,312	-
Nuclear Energy Research, Development and Demonstration	81.121	66,713	-			66,713	-
Nuclear Energy Research, Development and Demonstration	81.121	-	61,119	Arizona State University	ASUB00000449	61,119	-
Advanced Research Projects Agency - Energy	81.135	2,856,115	-			2,856,115	767,405
Advanced Research Projects Agency - Energy	81.135	-	69,394	Clemson University	21352192023386	69,394	-
Advanced Research Projects Agency - Energy	81.135	-	127,440	24M Technologies Inc.	AR3550714	127,440	-
Advanced Research Projects Agency - Energy	81.135	-	164,169	Form Energy Inc.	DEAR0000995	164,169	-
Advanced Research Projects Agency - Energy	81.135	-	44,542	Ionic Materials Inc.	DEAR0000780	44,542	-
Advanced Research Projects Agency - Energy	81.135	-	241,333	Massachusetts Institute of Technology	S5453PO734652	241,333	-
Total US DOE		9,825,260	6,279,427			16,104,687	1,926,550
ENVIRONMENTAL PROTECTION AGENCY (EPA)							
Science to Achieve Results (STAR) Research Program	66.509	1,127,776	-			1,127,776	894,759
P3 Award: National Student Design Competition for Sustainability	66.516	5,728	-			5,728	-
Total EPA		1,133,504	-			1,133,504	894,759
US DEPARTMENT OF HEALTH AND HUMAN SERVICES							
Cell Type Atlas of Whole Human Brains Using Holo: An Optimized Pipeline for Staining, Clearing, Imaging, and Analysis	93.RD	-	76,496	Columbia University	1GG01716601	76,496	-

Federal Program	Assistance Listing Number	Direct	Pass-Through	Pass-Through Entity	Pass-Through Entity Sponsor Number	Federal Expenditures	Passed to Subrecipient
Characterization of Submicron-/Nano-Scale Coal Dusts and their Effects On Miners' Pneumoconiosis and Lung Cancer for Underground Coal Mines	93.RD	-	113,579	Pennsylvania State University	S000444NIOASH	113,579	-
Inhibition of Telomere Maintenance by Oxidized DNA Precursor	93.RD	-	(207)	University of Pittsburgh	00592111302871	(207)	-
Organizational Strategies for Improving Evidence-Uptake In Intensive Care Food and Drug Administration Research	93.RD	-	80,267	University of Pittsburgh	CNVA000625381356801	80,267	-
	93.103	685,028	-			685,028	535,515
National Institutes of Health							
Environmental Health	93.113	-	(7,619)	University of Pittsburgh	AWD000005221328161	(7,619)	-
Environmental Health	93.113	-	96,160	University of Pittsburgh	AWD000005221359901	96,160	-
Environmental Health	93.113	-	31,147	University of Pittsburgh	AWD000023711355681	31,147	-
Oral Diseases and Disorder Research	93.121	151,443	-			151,443	7,537
NIEHS Superfund Research Program	93.143	-	147,222	Texas A&M University System	M2101248	147,222	-
Human Genome Research	93.172	1,035,583	-			1,035,583	47,020
Human Genome Research	93.172	-	119,649	Indiana University	8029CMUPO0173652	119,649	-
Human Genome Research	93.172	-	44,558	Washington University	WU220122	44,558	-
Research Related to Deafness and Communication Disorders	93.173	979,449	-			979,449	269,234
Research Related to Deafness and Communication Disorders	93.173	-	21,111	University of Pittsburgh	AWD000038091360941	21,111	-
Research Related to Deafness and Communication Disorders	93.173	-	73,049	Vanderbilt University Medical Center	VUMC70291	73,049	26,650
Immunization Research, Demonstration, Public Information and Education Training and Clinical Skills Improvement Projects	93.185	795,101	-			795,101	14,638
Immunization Research, Demonstration, Public Information and Education Training and Clinical Skills Improvement Projects	93.185	-	111,742	University of Pittsburgh	AWD000026471372801	111,742	-
Immunization Research, Demonstration, Public Information and Education Training and Clinical Skills Improvement Projects	93.185	-	74,139	University of Pittsburgh	AWD000026471350651	74,139	-
Research and Training in Complementary and Integrative Health	93.213	(1,360)	-			(1,360)	21,015
Research and Training in Complementary and Integrative Health	93.213	-	(4,398)	Emory University	A430855	(4,398)	-
Research and Training in Complementary and Integrative Health	93.213	-	(413)	University of Delaware	55084	(413)	-
Mental Health Research Grants	93.242	3,301,886	-			3,301,886	122,258
Mental Health Research Grants	93.242	-	48,015	Icahn School of Medicine at Mount Sinai	025553244609	48,015	-
Mental Health Research Grants	93.242	-	88,427	Mclean Hospital	401454	88,427	-
Mental Health Research Grants	93.242	-	124,193	Mclean Hospital	401780	124,193	-
Mental Health Research Grants	93.242	-	102,051	University of California-San Francisco	12754SC	102,051	-
Mental Health Research Grants	93.242	-	112,214	University of Oregon	281450C	112,214	-
Mental Health Research Grants	93.242	-	(7,739)	University of Pittsburgh	00564871300521	(7,739)	-
Mental Health Research Grants	93.242	-	116,864	University of Pittsburgh	AWD00001056136165	116,864	-
Mental Health Research Grants	93.242	-	40,692	University of Pittsburgh	AWD000010561361652	40,692	-
Mental Health Research Grants	93.242	-	28,971	University of Pittsburgh	AWD000019511341561	28,971	-
Mental Health Research Grants	93.242	-	69,603	University of Pittsburgh	AWD000038111359261	69,603	-
Mental Health Research Grants	93.242	-	14,276	University of Pittsburgh	AWD000044781366281	14,276	-
Mental Health Research Grants	93.242	-	224,639	University of Pittsburgh	CNVA000526871294091	224,639	-
Mental Health Research Grants	93.242	-	150,272	University of Pittsburgh	CNVA000562681301381	150,272	-
Mental Health Research Grants	93.242	-	34,604	University of Pittsburgh	CNVA000584561359471	34,604	-
Mental Health Research Grants	93.242	-	42,944	University of Pittsburgh	CNVA000584561359472	42,944	-
Mental Health Research Grants	93.242	-	192,265	University of Pittsburgh	CNVA000593501306731	192,265	-
Mental Health Research Grants	93.242	-	209,822	University of Pittsburgh	CNVA000594601312001	209,822	-
Occupational Safety and Health Program	93.262	-	12,631	CPWR - The Center for Construction Research and Training	212PS	12,631	-
Alcohol Research Programs	93.273	426,801	-			426,801	21,320
Drug Abuse and Addiction Research Programs	93.279	1,113,339	-			1,113,339	79,551
Discovery and Applied Research for Technological Innovations to Improve Human Health	93.286	2,051,002	-			2,051,002	233,863
Drug Abuse and Addiction Research Programs	93.279	-	20,994	University of Florida	SUB00002789	20,994	-
Discovery and Applied Research for Technological Innovations to Improve Human Health	93.286	-	64,256	Allegheny Singer Research Institute	49425109	64,256	-
Discovery and Applied Research for Technological Innovations to Improve Human Health	93.286	-	152,835	The Regents of the University of California	1520GYA165	152,835	-
Discovery and Applied Research for Technological Innovations to Improve Human Health	93.286	-	276,669	University of Chicago	AWD101558SUB00000355	276,669	-
Discovery and Applied Research for Technological Innovations to Improve Human Health	93.286	-	6,424	University of Pittsburgh	AWD000008131348161	6,424	-
Discovery and Applied Research for Technological Innovations to Improve Human Health	93.286	-	131,080	University of Pittsburgh	AWD000008131362531	131,080	-
Discovery and Applied Research for Technological Innovations to Improve Human Health	93.286	-	11,765	University of Pittsburgh	CNVA000495171352301	11,765	-
Discovery and Applied Research for Technological Innovations to Improve Human Health	93.286	-	221,822	University of Wisconsin-Madison	0000001090	221,822	-
Minority Health and Health Disparities Research	93.307	29,615	-			29,615	-
Trans-NIH Research Support	93.310	7,215,504	-			7,215,504	3,743,928
Trans-NIH Research Support	93.310	-	(5,079)	St Jude Children's Research Hospital Inc.	1125010307942769	(5,079)	-
Trans-NIH Research Support	93.310	-	42,797	St Jude Children's Research Hospital Inc.	1125010408015008	42,797	-

Federal Program	Assistance Listing Number	Direct	Pass-Through	Pass-Through Entity	Pass-Through Entity Sponsor Number	Federal Expenditures	Passed to Subrecipient
Trans-NIH Research Support	93.310	-	89,429	University of Illinois at Urbana-Champaign	07774317752	89,429	75,229
Trans-NIH Research Support	93.310	-	53,653	University of Pittsburgh	AWD000008891367311	53,653	-
Trans-NIH Research Support	93.310	-	207,993	University of Pittsburgh	AWD000048141368771	207,993	-
Trans-NIH Research Support	93.310	-	104,987	University of Pittsburgh	AWD000048141368772	104,987	-
Trans-NIH Research Support	93.310	-	5,051	University of Pittsburgh	AWD000048241371303	5,051	-
National Center for Advancing Translational Sciences	93.350	-	4,203	University of Pittsburgh	AWD000013241336921	4,203	-
National Center for Advancing Translational Sciences	93.350	-	1,166	University of Pittsburgh	AWD000048001368741	1,166	-
Research Infrastructure Programs	93.351	195,892	-			195,892	70,228
Nursing Research	93.361	292,485	-			292,485	24,078
Nursing Research	93.361	-	43,847	University of Pittsburgh	AWD000054411373541	43,847	-
Nursing Research	93.361	-	57,056	University of Pittsburgh	CNVA000500741288681	57,056	-
Cancer Cause and Prevention Research	93.393	597,170	-			597,170	111,264
Cancer Detection and Diagnosis Research	93.394	1,041,266	-			1,041,266	369,199
Cancer Treatment Research	93.395	-	77,391	Spectragenetics Inc.	CMUCA257114	77,391	-
Cancer Biology Research	93.396	41,962	-			41,962	1,341
Cancer Biology Research	93.396	-	7,775	Brown University	00001918	7,775	-
Cancer Research Manpower	93.398	124,542	-			124,542	-
ACL National Institute on Disability, Independent Living, and Rehabilitation Research	93.433	1,120,247	-			1,120,247	244,816
Cardiovascular Diseases Research	93.837	446,434	-			446,434	44,767
Cardiovascular Diseases Research	93.837	-	52,882	Advanced Respiratory Technologies LLC	1R43HL15097701SA001	52,882	34,332
Cardiovascular Diseases Research	93.837	-	72,846	Fluidform Inc.	OSP00001560	72,846	-
Cardiovascular Diseases Research	93.837	-	36,362	Fluidform Inc.	OSP00002109	36,362	-
Cardiovascular Diseases Research	93.837	-	252,999	The Regents of the University of California	1520GWC325441315MC31010	252,999	-
Cardiovascular Diseases Research	93.837	-	13,580	University of Minnesota	A005584701	13,580	-
Cardiovascular Diseases Research	93.837	-	319,139	University of Pittsburgh	AWD000002321328521	319,139	-
Cardiovascular Diseases Research	93.837	-	49,090	University of Pittsburgh	AWD000028381352131	49,090	-
Cardiovascular Diseases Research	93.837	-	257,531	University of Pittsburgh	CNVA000599241319771	257,531	-
Lung Diseases Research	93.838	3,340	-			3,340	-
Lung Diseases Research	93.838	-	(157)	Oregon Health and Science Institute	1011201CARNEGIE	(157)	-
Lung Diseases Research	93.838	-	49,364	The Brigham and Women's Hospital, Inc..	122869	49,364	-
Lung Diseases Research	93.838	-	148,450	University of Pittsburgh	AWD000044521364471	148,450	-
Lung Diseases Research	93.838	-	21,320	University of Pittsburgh	AWD000046701370751	21,320	-
Lung Diseases Research	93.838	-	61,594	Vanderbilt University	VUMC67476	61,594	-
Blood Diseases and Resources Research	93.839	402,724	-			402,724	120,894
Blood Diseases and Resources Research	93.839	-	60,485	Yale University	GR111726CON80002824	60,485	-
Arthritis, Musculoskeletal and Skin Diseases Research	93.846	(2,287)	-			(2,287)	-
Arthritis, Musculoskeletal and Skin Diseases Research	93.846	-	48,012	Allegheny Singer Research Institute	41088609	48,012	-
Diabetes, Digestive, and Kidney Diseases Extramural Research	93.847	1,325,663	-			1,325,663	186,183
Extramural Research Programs in the Neurosciences & Neurological Disorders	93.853	4,656,850	-			4,656,850	1,152,846
Extramural Research Programs in the Neurosciences & Neurological Disorders	93.853	-	132,198	Actuated Medical Inc.	1047357	132,198	-
Extramural Research Programs in the Neurosciences & Neurological Disorders	93.853	-	162,183	Columbia University	1GG01355401	162,183	-
Extramural Research Programs in the Neurosciences & Neurological Disorders	93.853	-	8,481	Massachusetts General Hospital	235424	8,481	-
Extramural Research Programs in the Neurosciences & Neurological Disorders	93.853	-	3,085	Massachusetts General Hospital	237602	3,085	-
Extramural Research Programs in the Neurosciences & Neurological Disorders	93.853	-	(3,215)	University of Pittsburgh	AWD000012171334952	(3,215)	-
Extramural Research Programs in the Neurosciences & Neurological Disorders	93.853	-	104,325	University of Pittsburgh	AWD000040051360471	104,325	-
Extramural Research Programs in the Neurosciences & Neurological Disorders	93.853	-	28,153	University of Pittsburgh	AWD000046851368781	28,153	-
Extramural Research Programs in the Neurosciences & Neurological Disorders	93.853	-	66,144	University of Pittsburgh	AWD000046871367771	66,144	-
Extramural Research Programs in the Neurosciences & Neurological Disorders	93.853	-	16,142	University of Pittsburgh	CNVA000552384182721	16,142	-
Extramural Research Programs in the Neurosciences & Neurological Disorders	93.853	-	155,868	University of Pittsburgh	CNVA000567631355352	155,868	-
Extramural Research Programs in the Neurosciences & Neurological Disorders	93.853	-	4,168	University of Pittsburgh	CNVA000568254167221	4,168	-
Allergy and Infectious Diseases Research	93.855	613,420	-			613,420	97,823
Allergy and Infectious Diseases Research	93.855	-	22,867	Board of Regents of the University System of Georgia	SUB00002375	22,867	-
Allergy and Infectious Diseases Research	93.855	-	83,771	Magee Womens Research Institute & Foundation	4692	83,771	-
Allergy and Infectious Diseases Research	93.855	-	72,509	State University of New York at Buffalo	R1277574	72,509	-
Allergy and Infectious Diseases Research	93.855	-	92,834	Sylvatica Biotech Inc.	1047324	92,834	-
Allergy and Infectious Diseases Research	93.855	-	30,715	University of Pittsburgh	AWD000002011325141	30,715	-
Allergy and Infectious Diseases Research	93.855	-	69,145	University of Pittsburgh	AWD000038761359021	69,145	-
Allergy and Infectious Diseases Research	93.855	-	103,241	University of Pittsburgh	AWD000042881363171	103,241	-
Allergy and Infectious Diseases Research	93.855	-	27,468	University of Pittsburgh	CNVA000527491286821	27,468	-
Allergy and Infectious Diseases Research	93.855	-	42,894	University of Pittsburgh	CNVA000559511299041	42,894	-
Allergy and Infectious Diseases Research	93.855	-	132,381	Yale University	GR113582CON80003101	132,381	-
Biomedical Research and Research Training	93.859	4,883,705	-			4,883,705	394,529
Biomedical Research and Research Training	93.859	-	118,146	North Carolina State University	2017314201	118,146	-
Biomedical Research and Research Training	93.859	-	75,637	University of Delaware	53831	75,637	-
Biomedical Research and Research Training	93.859	-	(9,119)	University of Pittsburgh	AWD000024651349981	(9,119)	-
Biomedical Research and Research Training	93.859	-	90,466	University of Pittsburgh	AWD000024651363421	90,466	-
Biomedical Research and Research Training	93.859	-	(2,171)	University of Pittsburgh	CNVA000509461348171	(2,171)	-

Federal Program	Assistance Listing Number	Direct	Pass-Through	Pass-Through Entity	Pass-Through Entity Sponsor Number	Federal Expenditures	Passed to Subrecipient
Biomedical Research and Research Training	93.859	-	184,097	University of Pittsburgh	CNVA000509461364521	184,097	-
Biomedical Research and Research Training	93.859	-	22,605	University of Pittsburgh	CNVA000540571347551	22,605	-
Biomedical Research and Research Training	93.859	-	9,345	University of Pittsburgh	CNVA000540571347561	9,345	-
Biomedical Research and Research Training	93.859	-	3,450	University of Pittsburgh	CNVA000540571347571	3,450	-
Biomedical Research and Research Training	93.859	-	57,048	University of Pittsburgh	CNVA000540571347581	57,048	-
Biomedical Research and Research Training	93.859	-	753	University of Pittsburgh	CNVA000540571347591	753	-
Biomedical Research and Research Training	93.859	-	13,097	University of Pittsburgh	CNVA000540571347601	13,097	-
Biomedical Research and Research Training	93.859	-	51,632	University of Pittsburgh	CNVA000540571362171	51,632	-
Biomedical Research and Research Training	93.859	-	107,375	University of Pittsburgh	CNVA000540571362181	107,375	-
Biomedical Research and Research Training	93.859	-	3,019	University of Pittsburgh	CNVA000540571362191	3,019	-
Biomedical Research and Research Training	93.859	-	32,681	University of Pittsburgh	CNVA000540571362201	32,681	-
Biomedical Research and Research Training	93.859	-	199,458	University of Pittsburgh	CNVA000540571362211	199,458	-
Biomedical Research and Research Training	93.859	-	53,941	University of Pittsburgh	CNVA000540571362221	53,941	-
Biomedical Research and Research Training	93.859	-	33,997	University of Pittsburgh	CNVA000595151315531	33,997	-
Biomedical Research and Research Training	93.859	-	93,093	University of Pittsburgh	CNVA000624511324201	93,093	-
Child Health and Human Development Extramural Research	93.865	2,231,221	-			2,231,221	342,580
Child Health and Human Development Extramural Research	93.865	-	95,435	Cornell University	13721220911	95,435	-
Child Health and Human Development Extramural Research	93.865	-	35,766	Icahn School of Medicine at Mount Sinai	0255C4314609	35,766	-
Child Health and Human Development Extramural Research	93.865	-	16,744	Magee Womens Research Institute & Foundation	6238	16,744	-
Child Health and Human Development Extramural Research	93.865	-	26,051	Stanford University	62613538153996	26,051	-
Child Health and Human Development Extramural Research	93.865	-	52,971	University of Pittsburgh	AWD000010881334101	52,971	-
Child Health and Human Development Extramural Research	93.865	-	130,443	University of Pittsburgh	CNVA0005463112950811313711	130,443	-
Aging Research	93.866	-	45,527	Brown University	00001360	45,527	-
Aging Research	93.866	-	3,683	National Bureau of Economic Research	4121CCMU	3,683	-
Aging Research	93.866	-	47,000	Rand Corporation	SCON00000401	47,000	-
Aging Research	93.866	-	(2)	University of Pennsylvania	579660PO4590473	(2)	-
Aging Research	93.866	-	52,744	University of Pennsylvania	582311PO4800137	52,744	-
Aging Research	93.866	-	167,349	University of Pittsburgh	AWD000008891333351	167,349	-
Aging Research	93.866	-	14,888	University of Pittsburgh	AWD000039581359721	14,888	-
Aging Research	93.866	-	66,507	University of Pittsburgh	AWD00029761351481	66,507	-
Aging Research	93.866	-	1,859	University of Pittsburgh	CNVA000521861286171	1,859	-
Aging Research	93.866	-	65,371	Yale University	GR105474CON80001680	65,371	-
Vision Research	93.867	1,081,691	-			1,081,691	6,150
Vision Research	93.867	-	73,470	Johns Hopkins University Applied Physics Laboratory	161089	73,470	-
Vision Research	93.867	-	4,297	University of Pittsburgh	AWD000011381337271	4,297	-
Vision Research	93.867	-	70,457	University of Pittsburgh	AWD000028511351661	70,457	-
Vision Research	93.867	-	(65,681)	University of Pittsburgh	CNVA000502371276741	(65,681)	-
Medical Library Assistance	93.879	1,300	-			1,300	-
Medical Library Assistance	93.879	-	124,065	University of Pennsylvania	583383PO4761419	124,065	-
Medical Library Assistance	93.879	-	49,898	University of Pittsburgh	AWD0000392113588710	49,898	-
Medical Library Assistance	93.879	-	46,881	University of Pittsburgh	AWD0000392113588711	46,881	-
Medical Library Assistance	93.879	-	49,998	University of Pittsburgh	AWD000039211358872	49,998	-
Medical Library Assistance	93.879	-	36,256	University of Pittsburgh	AWD000039211358879	36,256	-
Center of Disease Control and Prevention							
Tuberculosis Demonstration, Research, Public and Professional Education	93.947	-	1,418	University of Utah	1005584127CMU	1,418	-
Total US Department of Health and Human Services		36,841,016	9,308,139			46,149,155	8,398,788
NATIONAL AERONAUTICS and SPACE ADMINISTRATION (NASA)							
Visual AI for Controlled Agricultural Environment	43.RD	-	46,943	Bloomfield Robotics	1043118	46,943	-
Robust Visual Perception Techniques for Intelligent & Adaptive Space Robotics	43.RD	-	13,085	Edge Case Research Inc.	1043067	13,085	-
Proprioceptive Gait Control for The Exobiology Extant Life Surveyor	43.RD	-	36,891	Jet Propulsion Lab	1671496	36,891	-
Wide Binary Stars in Nearby Dwarf Galaxies: A Novel Probe of Dark Matter on Subgalactic Scales	43.RD	-	20,576	Space Telescope Science Institute	HSTAR16639001A	20,576	-
WFIRST Infrared Nearby Galaxy Survey	43.RD	-	12,000	University of Washington	UWSC10592	12,000	-
Science	43.001	2,714,263	-			2,714,263	1,203,080
Science	43.001	-	63,107	Bermuda Institute of Ocean Sciences	CMU211159	63,107	-
Science	43.001	-	126,241	Planetary Science Institute	1523CARNEGIEMELLON	126,241	-
Science	43.001	-	31,522	University of South Carolina	214248	31,522	-
Aeronautics	43.002	-	39,944	Arizona State University	ASUB00000537	39,944	-
Aeronautics	43.002	-	33,987	San Jose State University Research Foundation	2116145736CMU2021	33,987	-
Aeronautics	43.002	-	33,556	University of Pittsburgh	AWD000037054174912	33,556	-
Office of Stem Engagement (OSTEM)	43.008	-	36,231	Pennsylvania State University	S000754NASA	36,231	-
Office of Stem Engagement (OSTEM)	43.008	-	5,064	Pennsylvania State University	S001743NASA	5,064	-
Office of Stem Engagement (OSTEM)	43.008	-	8,431	Pennsylvania State University	S002818NASA	8,431	-
Space Technology	43.012	654,940	-			654,940	79,478
Space Technology	43.012	-	718,070	The Regents of the University of California	A192477S003	718,070	-
Total NASA		3,369,203	1,225,648			4,594,851	1,282,558

Federal Program	Assistance Listing Number	Direct	Pass-Through	Pass-Through Entity	Pass-Through Entity Sponsor Number	Federal Expenditures	Passed to Subrecipient
NATIONAL SCIENCE FOUNDATION (NSF)							
IPA Agreement - Dr. Jeanne Vanbriesen	47.CBET2146033	209,137	-			209,137	-
Materials Research Project Report	47.040	94,177	-			94,177	-
Engineering	47.041	7,434,188	-			7,434,188	508,135
Engineering	47.041	-	54,062	Fluidform Inc.	OSP00001561	54,062	-
Engineering	47.041	-	151,350	Raydiant Oximetry Inc.	1047361	151,350	-
Engineering	47.041	-	26,732	Stevens Institute of Technology	210308501	26,732	-
Engineering	47.041	-	2,707	The Regents of the University of California	S001488	2,707	-
Engineering	47.041	-	54,924	University of Maryland	104757Z3822209	54,924	-
Engineering	47.041	-	86,608	University of Minnesota	A008985702	86,608	-
Engineering	47.041	-	7,026	University of Washington	UWSC13720BPO66242	7,026	-
Mathematical and Physical Sciences	47.049	7,549,322	-			7,549,322	111,825
Mathematical and Physical Sciences	47.049	-	46,046	Montana State University	G25320W7952	46,046	-
Mathematical and Physical Sciences	47.049	-	(472)	Regents of the University of New Mexico	271699872X	(472)	-
Mathematical and Physical Sciences	47.049	-	101,443	The Ohio State University	60077667	101,443	-
Geosciences	47.050	480,164	-			480,164	862
Computer and Information Science and Engineering	47.070	31,667,685	-			31,667,685	517,274
Computer and Information Science and Engineering	47.070	-	104,963	Computing Research Association	2021CIFCarnegieMellon02	104,963	-
Computer and Information Science and Engineering	47.070	-	62,978	Computing Research Association	2021CIFCarnegieMellonN33	62,978	-
Computer and Information Science and Engineering	47.070	-	106,390	Computing Research Association	CIF2020CMU02	106,390	-
Computer and Information Science and Engineering	47.070	-	125,955	Computing Research Association	CIF2020CMU62	125,955	-
Computer and Information Science and Engineering	47.070	-	(638)	Cornell University	7295410594	(638)	-
Computer and Information Science and Engineering	47.070	-	44,829	Cornell University	8154421670	44,829	-
Computer and Information Science and Engineering	47.070	-	302,313	Georgia Institute of Technology	PO5196156AWD002623G1	302,313	-
Computer and Information Science and Engineering	47.070	-	295,719	Indiana University	8141PO0093723	295,719	-
Computer and Information Science and Engineering	47.070	-	143,955	Indiana University	BL4812537CMUPO0085770	143,955	-
Computer and Information Science and Engineering	47.070	-	2,548	Louisiana State University	PO0000024529	2,548	-
Computer and Information Science and Engineering	47.070	-	21,470	Massachusetts Institute of Technology	S5087PO493924	21,470	-
Computer and Information Science and Engineering	47.070	-	3,695,108	MPC Corporation	17011	3,695,108	-
Computer and Information Science and Engineering	47.070	-	62,550	Northeastern University	50265378050	62,550	-
Computer and Information Science and Engineering	47.070	-	114,594	The Ohio State University	SPC1000005448GR124624	114,594	-
Computer and Information Science and Engineering	47.070	-	102,565	University of California - San Diego	118620157MPINVS9002365	102,565	-
Computer and Information Science and Engineering	47.070	-	74,630	University of Chicago	AWD064198SUB00000576	74,630	-
Computer and Information Science and Engineering	47.070	-	115,174	University of Illinois at Urbana-Champaign	08662216839	115,174	-
Computer and Information Science and Engineering	47.070	-	26,200	University of Illinois at Urbana-Champaign	10143418861	26,200	-
Computer and Information Science and Engineering	47.070	-	23,047	University of Illinois at Urbana-Champaign	10882218933	23,047	-
Computer and Information Science and Engineering	47.070	-	15,355	University of Maryland	93924Z3497201	15,355	-
Computer and Information Science and Engineering	47.070	-	24,748	University of Minnesota	A008754801	24,748	-
Computer and Information Science and Engineering	47.070	-	70,963	University of Pennsylvania	578035PO4670368	70,963	-
Computer and Information Science and Engineering	47.070	-	15,736	University of Pennsylvania	580447PO4616470	15,736	-
Computer and Information Science and Engineering	47.070	-	70,728	University of Southern California	115070153	70,728	-
Computer and Information Science and Engineering	47.070	-	(6,125)	VA Polytechnic Institute & State University	SSF2101KURCHIN	(6,125)	-
Computer and Information Science and Engineering	47.070	-	16,588	Washington University	WU18422POST000000033	16,588	-
Biological Sciences	47.074	1,996,862	-			1,996,862	23,569
Biological Sciences	47.074	-	195,753	Case Western Reserve University	RES515695POZDG2100230	195,753	-
Biological Sciences	47.074	-	42,499	University of Pittsburgh	AWD00030824169341	42,499	-
Biological Sciences	47.074	-	45,425	University of Texas at Austin	UTA19001225	45,425	-
Biological Sciences	47.074	-	54,206	University of Texas at Austin	UTA20000951	54,206	-
Biological Sciences	47.074	-	28,442	Wake Forest University	19001	28,442	-
Social, Behavioral, and Economic Sciences	47.075	4,150,087	-			4,150,087	150,031
Social, Behavioral, and Economic Sciences	47.075	-	118,136	Arizona State University	ASUB00000609	118,136	-
Social, Behavioral, and Economic Sciences	47.075	-	690	New York University	F039202	690	-
Education and Human Resources	47.076	8,486,821	-			8,486,821	254,517
Education and Human Resources	47.076	-	12,300	Pennsylvania State University	S000327NSF	12,300	-
Education and Human Resources	47.076	-	111,737	The Concord Consortium	3392002	111,737	-
Education and Human Resources	47.076	-	200,938	The Regents of the University of California	20211566	200,938	-
Office of International Science and Engineering	47.079	91,297	-			91,297	-
Office of International Science and Engineering	47.079	-	282,967	University of Pittsburgh	CNVA000554450120582	282,967	-
Integrative Activities	47.083	847,482	-			847,482	226,343
Integrative Activities	47.083	-	98,614	University of California - Davis	A221500S001	98,614	-
Total NSF		63,007,222	7,354,476			70,361,698	1,792,556
US DEPARTMENT OF TRANSPORTATION							
Predictive Real-Time Traffic Management in Large-Scale Networks Using Model-Based AI	20.693JJ321C000013	85,417	-			85,417	-
Ensuring Safety in an AI-Enhanced PTC System	20.693JJ620C000025	142,330	-			142,330	16,879
Highway Research and Development Program	20.200	-	707,360	PA Department of Transportation	CMUADS2021	707,360	-
Highway Training and Education	20.215	34,769	-			34,769	-
University Transportation Centers Program	20.701	3,737,558	-			3,737,558	658,892

Federal Program	Assistance Listing Number	Direct	Pass-Through	Pass-Through Entity	Pass-Through Entity Sponsor Number	Federal Expenditures	Passed to Subrecipient
Total US Department of Transportation		4,000,074	707,360			4,707,434	675,771
US DEPARTMENT OF HOMELAND SECURITY							
Coast Guard Federal Fellowship Program	97.FP00006219BERTSCH	25,506	-			25,506	-
Homeland Security Research, Development, Testing, Evaluation and Demonstration of Technologies Related to Countering Weapons of Mass Destruction	97.077	639,696	-			639,696	-
Total US Department of Homeland Security		665,202	-			665,202	-
OTHER FEDERAL AGENCIES							
DARPA							
Research and Technology Development	12.910	222,672	-			222,672	-
Research and Technology Development	12.910	-	303,102	University of Pittsburgh	AWD000015934160525B	303,102	31,874
US DEPARTMENT OF THE INTERIOR							
US Geological Survey Research and Data Collection	15.808	3,165	-			3,165	-
Visual Cortical Neural Circuits for Compositional Learning and Inference	15.D16PC00007	(2)	-			(2)	-
US DEPARTMENT OF LABOR							
WIOA National Dislocated Worker Grants/WIA National Emergency Grants	17.277	-	1,560	Phase 4 Learning Center Inc.	PY20P4WVC2387	1,560	-
DEPARTMENT OF STATE							
Economic Statecraft	19.322	205,784	-			205,784	-
NATIONAL ENDOWMENT FOR THE ARTS							
Promotion of the Arts Grants to Organizations and Individuals	45.024	37,172	-			37,172	-
Promotion of the Humanities Public Programs	45.164	55,015	-			55,015	-
Promotion of the Humanities Office of Digital Humanities	45.169	(1,273)	-			(1,273)	127
OTHER							
Subrahmanian Assignment to National Institute of Standards and Technology	99.IP2004	195,035	-			195,035	-
Sonichepherd	99.RD	-	58,180	Johns Hopkins University	136953PO2005348035	58,180	-
Development of Speech Processing Technologies with Improved Performance in Various Sponsor Specific Audio Domains, Such a Far-Field Microphone Speech	99.RD	-	771	Johns Hopkins University Applied Physics Laboratory	158373	771	-
GSA Energy Savings Research, Phase Three	99.RD	-	67,111	LMI Consulting LLC	SB20000034	67,111	-
Acquisition and Benchmarking of a Perkin Elmer Labchip Chitouch Protein Characterization System	99.RD	-	173,234	University of Delaware	UDR0000045PC51007	173,234	-
Deep Intermodal Video Analytics (DIVA) - Phase Three	99.RD	-	128,624	University of Maryland	92483Z9618201	128,624	-
Total Other Federal Agencies		717,568	732,582			1,450,150	32,001
Total Research and Development Cluster		333,398,346	51,317,923			384,716,269	34,123,465
Total Federal Award Expenditures		\$408,360,461	\$ 51,592,865			\$ 459,953,326	\$ 34,123,465

Carnegie Mellon University

Notes to Schedule of Expenditures of Federal Awards

Year Ended June 30, 2022

1. Basis of Presentation

The accompanying Schedule of Expenditures of Federal Awards (the Schedule) includes the federal contracts and grants expenditures of Carnegie Mellon University (Carnegie Mellon or the university) for the year ended June 30, 2022 and is presented on the accrual basis of accounting. The information in the Schedule, is presented in accordance with the requirements of Title 2 U.S. Code of Federal Regulations Part 200, *Uniform Administrative requirements, Cost Principles, and Audit Requirements for Federal Awards (Uniform Guidance)*. Therefore, some amounts presented in the Schedule may differ from amounts presented in, or used in the preparation of the consolidated financial statements. Negative amounts represent adjustment in the normal course of business to amounts reported in a prior year.

For purposes of the Schedule, federal awards include all grants, contracts, and similar agreements entered into directly between the university and agencies and departments of the federal government and all subawards to the university by nonfederal organizations.

2. Summary of Significant Accounting Policies for Federal Award Expenditures

Expenditures for federal student financial aid programs are recognized as incurred. For purposes of major program determination, these costs include Federal Pell Grant program grants to students, Federal Perkins loans, the federal share of students' Federal Supplemental Educational Opportunity Grants (FSEOG) program grants and the federal share of Federal Work Study (FWS) program earnings, Federal direct Student Loan disbursements, and administrative cost allowances, where applicable. Expenditures for federal awards are determined using the cost principles set forth in the Uniform Guidance (2 CFR, Part 220). Under these costs principles, certain types of expenditures are not allowable or are limited to reimbursement. Direct Costs are recognized as incurred using the accrual method of accounting.

3. Assistance Listing Numbers

Assistance Listing Numbers and pass-through numbers are presented for those programs for which such numbers are available. In instances where no Assistance Listing Number is available, the federal agency and the federal award number is included as well as the grantor or pass-through agency.

4. SEI Contracts

Amounts included in the Research and Development cluster, Air Force section of the Schedule, reflect one contract award to the university, including funding received from other federal agencies related to and included with the Software Engineering Institute (SEI) Department of the Air Force contract (CFDA 12.FA870115D0002) through project work plans (PWP) as required by their Air Force sponsoring agreement.

The SEI is a federally funded research and development center (FFRDC) sponsored by the U.S. Department of Defense (DoD) and operated by the university. When federal agencies other than the primary sponsor contribute funds directly to the SEI's basic effort, the work is administered using a PWP.

Carnegie Mellon University
Notes to Schedule of Expenditures of Federal Awards
Year Ended June 30, 2022

5. Federal Student Loan Programs

The Federal Perkins Loan Program (CFDA No. 84.038) is administered directly by the university and the balances and transactions are included in the university's basic consolidated financial statements. The amount of Federal Perkins loans outstanding at June 30, 2022 totaled \$5,727,073. Loans outstanding at the beginning of the year are included in the federal expenditures presented in the Schedule. Under federal law, the authority for schools to make new Perkins Loans ended in September 30, 2017, and final disbursements were permitted through June 30, 2018. As a result, students can no longer receive Perkins Loans.

Carnegie Mellon participates in the Federal Direct Loan Program (CFDA No. 84.268) which includes subsidized and unsubsidized student loans, Direct Parent Loan for Undergraduate Student (PLUS) Loans, and direct GRAD PLUS Loans. Loan disbursements under the Federal Direct Loan Program for the year ended June 30, 2022 totaled \$50,222,703. These loans are not made by the university but are received by its students.

6. Facilities and Administrative Costs

For research and development awards, the university applies its fixed approved facilities and administrative rate when charging indirect costs to federal awards rather than the 10% de minimis cost rate as described in Section 200.414 of the Uniform Guidance. The fixed rates for capped and uncapped awards for the year ended June 30, 2022 are as follows:

	Capped	Uncapped
On-campus	50.30%	55.00%
Off-campus	26.00%	N/A
National Robotics Engineering Center	25.90%	30.50%
Silicon Valley	57.60%	N/A
Software Engineering Institute	11.60%	N/A

The capped rate applies to all Department of Defense (DoD) contracts and subcontracts awarded or issued before November 30, 1993, all Non-DoD instruments, and all DoD grants.

The uncapped rate applies to all DoD contracts awarded or issued on or after November 30, 1993 in accordance with and under the authority of DFARS 231 .303(l).



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**Independent Auditors' Report on Internal Control Over Financial Reporting and on
Compliance and Other Matters Based on an Audit of Financial Statements Performed in
Accordance With *Government Auditing Standards***

The Board of Trustees
Carnegie Mellon University:

We have audited, in accordance with the auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards* issued by the Comptroller General of the United States, the consolidated financial statements of Carnegie Mellon University (the University), which comprise the University's consolidated statement of financial position as of June 30, 2022, and the related consolidated statements of activities and cash flows for the year then ended, and the related notes to the consolidated financial statements, and have issued our report thereon dated October 13, 2022.

Report on Internal Control Over Financial Reporting

In planning and performing our audit of the consolidated financial statements, we considered the University's internal control over financial reporting (internal control) as a basis for designing audit procedures that are appropriate in the circumstances for the purpose of expressing our opinion on the consolidated financial statements, but not for the purpose of expressing an opinion on the effectiveness of the University's internal control. Accordingly, we do not express an opinion on the effectiveness of the University's internal control.

A deficiency in internal control exists when the design or operation of a control does not allow management or employees, in the normal course of performing their assigned functions, to prevent, or detect and correct, misstatements on a timely basis. A material weakness is a deficiency, or a combination of deficiencies, in internal control, such that there is a reasonable possibility that a material misstatement of the entity's financial statements will not be prevented, or detected and corrected, on a timely basis. A significant deficiency is a deficiency, or a combination of deficiencies, in internal control that is less severe than a material weakness, yet important enough to merit attention by those charged with governance.

Our consideration of internal control was for the limited purpose described in the first paragraph of this section and was not designed to identify all deficiencies in internal control that might be material weaknesses or significant deficiencies. Given these limitations, during our audit we did not identify any deficiencies in internal control that we consider to be material weaknesses. However, material weaknesses or significant deficiencies may exist that were not identified.

Report on Compliance and Other Matters

As part of obtaining reasonable assurance about whether the University's consolidated financial statements are free from material misstatement, we performed tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements, noncompliance with which could have a direct and material effect on the financial statements. However, providing an opinion on compliance with those provisions was not an objective of our audit, and accordingly, we do not express such an opinion. The results of our tests disclosed no instances of noncompliance or other matters that are required to be reported under *Government Auditing Standards*.



Purpose of This Report

The purpose of this report is solely to describe the scope of our testing of internal control and compliance and the results of that testing, and not to provide an opinion on the effectiveness of the entity's internal control or on compliance. This report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering the entity's internal control and compliance. Accordingly, this communication is not suitable for any other purpose.

KPMG LLP

Pittsburgh, Pennsylvania
October 13, 2022



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**Independent Auditors' Report on Compliance for Each Major Federal Program;
Report on Internal Control Over Compliance; and Report on Supplementary
Schedule of Expenditures of Federal Awards Required by the Uniform Guidance**

The Board of Trustees
Carnegie Mellon University:

Report on Compliance for Each Major Federal Program

Opinion on Each Major Federal Program

We have audited Carnegie Mellon University and its subsidiaries' (the University's) compliance with the types of compliance requirements identified as subject to audit in the *OMB Compliance Supplement* that could have a direct and material effect on each of the University's major federal programs for the year ended June 30, 2022. The University's major federal programs are identified in the summary of auditors' results section of the accompanying schedule of findings and questioned costs.

In our opinion, the University complied, in all material respects, with the compliance requirements referred to above that could have a direct and material effect on each of its major federal programs for the year ended June 30, 2022.

Basis for Opinion on Each Major Federal Program

We conducted our audit of compliance in accordance with auditing standards generally accepted in the United States of America (GAAS); the standards applicable to financial audits contained in *Government Auditing Standards*, issued by the Comptroller General of the United States; and the audit requirements of Title 2 U.S. Code of Federal Regulations Part 200, *Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards* (Uniform Guidance). Our responsibilities under those standards and the Uniform Guidance are further described in the Auditors' Responsibilities for the Audit of Compliance section of our report.

We are required to be independent of the University and to meet our other ethical responsibilities, in accordance with relevant ethical requirements relating to our audit. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion on compliance for each major federal program. Our audit does not provide a legal determination of the University's compliance with the compliance requirements referred to above.

Responsibilities of Management for Compliance

Management is responsible for compliance with the requirements referred to above and for the design, implementation, and maintenance of effective internal control over compliance with the requirements of laws, statutes, regulations, rules and provisions of contracts or grant agreements applicable to the University's federal programs.



Auditors' Responsibilities for the Audit of Compliance

Our objectives are to obtain reasonable assurance about whether material noncompliance with the compliance requirements referred to above occurred, whether due to fraud or error, and express an opinion on the University's compliance based on our audit. Reasonable assurance is a high level of assurance but is not absolute assurance and therefore is not a guarantee that an audit conducted in accordance with GAAS, *Government Auditing Standards*, and the Uniform Guidance will always detect material noncompliance when it exists. The risk of not detecting material noncompliance resulting from fraud is higher than for that resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control. Noncompliance with the compliance requirements referred to above is considered material if there is a substantial likelihood that, individually or in the aggregate, it would influence the judgment made by a reasonable user of the report on compliance about the University's compliance with the requirements of each major federal program as a whole.

In performing an audit in accordance with GAAS, *Government Auditing Standards*, and the Uniform Guidance, we:

- Exercise professional judgment and maintain professional skepticism throughout the audit.
- Identify and assess the risks of material noncompliance, whether due to fraud or error, and design and perform audit procedures responsive to those risks. Such procedures include examining, on a test basis, evidence regarding the University's compliance with the compliance requirements referred to above and performing such other procedures as we considered necessary in the circumstances.
- Obtain an understanding of the University's internal control over compliance relevant to the audit in order to design audit procedures that are appropriate in the circumstances and to test and report on internal control over compliance in accordance with the Uniform Guidance, but not for the purpose of expressing an opinion on the effectiveness of the University's internal control over compliance. Accordingly, no such opinion is expressed.

We are required to communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit and any significant deficiencies and material weaknesses in internal control over compliance that we identified during the audit.

Report on Internal Control Over Compliance

A deficiency in internal control over compliance exists when the design or operation of a control over compliance does not allow management or employees, in the normal course of performing their assigned functions, to prevent, or detect and correct, noncompliance with a type of compliance requirement of a federal program on a timely basis. A material weakness in internal control over compliance is a deficiency, or a combination of deficiencies, in internal control over compliance, such that there is a reasonable possibility that material noncompliance with a type of compliance requirement of a federal program will not be prevented, or detected and corrected, on a timely basis. A significant deficiency in internal control over compliance is a deficiency, or a combination of deficiencies, in internal control over compliance with a type of compliance requirement of a federal program that is less severe than a material weakness in internal control over compliance, yet important enough to merit attention by those charged with governance.

Our consideration of internal control over compliance was for the limited purpose described in the Auditors' Responsibilities for the Audit of Compliance section above and was not designed to identify all deficiencies in internal control over compliance that might be material weaknesses or significant deficiencies in internal control over compliance. Given these limitations, during our audit we did not identify any deficiencies in internal control over compliance that we consider to be material weaknesses, as defined above. However, material weaknesses or significant deficiencies in internal control over compliance may exist that were not identified.



Our audit was not designed for the purpose of expressing an opinion on the effectiveness of internal control over compliance. Accordingly, no such opinion is expressed.

The purpose of this report on internal control over compliance is solely to describe the scope of our testing of internal control over compliance and the results of that testing based on the requirements of the Uniform Guidance. Accordingly, this report is not suitable for any other purpose.

Report on Supplementary Schedule of Expenditures of Federal Awards Required by the Uniform Guidance

We have audited the consolidated financial statements of the University as of and for the year ended June 30, 2022, and have issued our report thereon dated October 13, 2022, which contained an unmodified opinion on those consolidated financial statements. Our audit was conducted for the purpose of forming an opinion on the consolidated financial statements as a whole. The accompanying schedule of expenditures of federal awards is presented for purposes of additional analysis as required by the Uniform Guidance and is not a required part of the consolidated financial statements. Such information is the responsibility of management and was derived from and relates directly to the underlying accounting and other records used to prepare the consolidated financial statements. The information has been subjected to the auditing procedures applied in the audit of the consolidated financial statements and certain additional procedures, including comparing and reconciling such information directly to the underlying accounting and other records used to prepare the consolidated financial statements or to the consolidated financial statements themselves, and other additional procedures in accordance with auditing standards generally accepted in the United States of America. In our opinion, the supplementary schedule of expenditures of federal awards is fairly stated, in all material respects, in relation to the consolidated financial statements as a whole.

KPMG LLP

Pittsburgh, Pennsylvania
October 13, 2022

Carnegie Mellon University
Schedule of Findings and Questioned Costs
Year Ended June 30, 2022

1. Summary of Auditors' Results

- a. Type of report issued on whether the consolidated financial statements were prepared in accordance with U.S. generally accepted accounting principles: **Unmodified**
- b. Internal control deficiencies over financial reporting disclosed by the audit of the consolidated financial statements:
 - Material weaknesses: **No**
Significant deficiencies: **None reported**
- c. Noncompliance material to the consolidated financial statements: **No**
- d. Internal control deficiencies over major programs disclosed by the audit:
 - Material weaknesses: **No**
Significant deficiencies: **None reported**
- e. Type of report issued on compliance for major programs: **Unmodified**
- f. Audit findings that are required to be reported in accordance with 2 CFR 200.516(a): **No**
- g. Major programs:
 - Research and Development Cluster – various CFDA numbers
 - COVID-19 Education Stabilization Fund- 84.425
-
- h. Dollar threshold used to distinguish between Type A and Type B programs: **\$3,000,000**
- i. Auditee qualified as a low-risk auditee: **Yes**

2. Findings Relating to the Consolidated Financial Statements Reported in Accordance with *Government Auditing Standards*

None

3. Findings and Questioned Costs Relating to Federal Awards

None