

Harvard University

**Report on Federal Awards in Accordance with the
Uniform Guidance**

June 30, 2024

EIN #04-2103580

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Report on Federal Awards in Accordance with the Uniform Guidance
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Part I

**Financial Statements and
Schedule of Expenditures of Federal Awards**



Report of Independent Auditors

To the Joint Committee on Inspection of the Governing Boards of Harvard University

Report on the Audit of the Consolidated Financial Statements

Opinion

We have audited the accompanying consolidated financial statements of Harvard University and its subsidiaries (the "University"), which comprise the consolidated balance sheet as of June 30, 2024, and the related consolidated statements of changes in net assets with general operating account detail and of changes in net assets of the endowment for the year ended June 30, 2024 and of cash flows for the years ended June 30, 2024 and 2023, including the related notes (collectively referred to as 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, 2024, the changes in its net assets for the year ended June 30, 2024, and its cash flows for the years ended June 30, 2024 and 2023 in accordance with accounting principles generally accepted in the United States of America.

Basis for Opinion

We conducted our audit in accordance with auditing standards generally accepted in the United States of America (US 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 audit. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Other Matter

We previously audited the consolidated balance sheet as of June 30, 2023, and the related consolidated statements of changes in net assets with general operating account detail, of changes in net assets of the endowment and of cash flows for the year then ended (the balance sheet and the statements of changes in net assets with general operating account detail and of changes in net assets of the endowment are not presented herein), and in our report dated October 18, 2023, we expressed an unmodified opinion on those consolidated financial statements. In our opinion, the information set forth in the accompanying summarized financial information as of June 30, 2023 and for the year then ended is consistent, in all material respects, with the audited consolidated financial statements from which it has been derived.

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 accounting principles generally accepted in the United States of America, 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 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 the financial statements are issued.

Auditors' Responsibilities for the Audit of the Consolidated Financial Statements

Our objectives are to obtain reasonable assurance about whether the 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 US 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 financial statements.

In performing an audit in accordance with US 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.

Supplemental Information

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 for the year ended June 30, 2024 is presented for purposes of additional analysis as required by Title 2 U.S. *Code of Federal Regulations* Part 200, *Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards* (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 schedule of expenditures of federal awards is fairly stated, in all material respects, in relation to the consolidated financial statements taken as a whole.

Other Information

Management is responsible for the other information included in the annual report. The other information comprises the Harvard University Financial Report Fiscal Year 2024, but does not include the consolidated financial statements and our auditors' report thereon. Our opinion on the consolidated financial statements does not cover the other information, and we do not express an opinion or any form of assurance thereon. In connection with our audit of the consolidated financial statements, our responsibility is to read the other information and consider whether a material inconsistency exists between the other information and the consolidated financial statements or the other information otherwise appears to be materially misstated. If, based on the work performed, we conclude that an uncorrected material misstatement of the other information exists, we are required to describe it in our report.

Other Reporting Required by Government Auditing Standards

In accordance with *Government Auditing Standards*, we have also issued our report dated October 16, 2024 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 for the year ended June 30, 2024. 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 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.

A handwritten signature in dark ink that reads "PricewaterhouseCoopers LLP". The signature is written in a cursive, flowing style.

Boston, Massachusetts
October 16, 2024

CONSOLIDATED BALANCE SHEETS

with summarized financial information as of June 30, 2023

In thousands of dollars	June 30	
	2024	2023
ASSETS:		
Cash and cash equivalents	\$ 162,879	\$ 245,589
Receivables, net (Note 4)	370,979	349,271
Prepayments and deferred charges	412,890	362,676
Operating leases—right of use assets (Note 18)	675,089	715,444
Notes receivable, net (Note 5)	424,276	400,401
Pledges receivable, net (Note 6)	2,578,789	2,699,634
Fixed assets, net (Note 7)	8,933,096	8,595,983
Interests in trusts held by others (Note 3)	466,283	438,892
Securities pledged to counterparties, at fair value (Note 3)	63,786	122,758
Investment portfolio, at fair value (Note 3)	62,695,067	59,078,919
TOTAL ASSETS	\$ 76,783,134	\$ 73,009,567
LIABILITIES:		
Accounts payable	\$ 485,033	\$ 416,881
Deferred revenue and other liabilities	1,813,979	1,747,823
Operating lease liabilities (Note 18)	721,873	754,195
Other liabilities associated with the investment portfolio (Notes 3 and 10)	1,114,955	629,995
Liabilities due under split interest agreements (Note 9)	905,317	886,222
Bonds and notes payable (Note 10)	7,134,080	6,214,734
Accrued retirement obligations (Note 11)	276,599	840,198
TOTAL LIABILITIES	12,451,836	11,490,048
NET ASSETS	64,331,298	61,519,519
TOTAL LIABILITIES AND NET ASSETS	\$ 76,783,134	\$ 73,009,567

	Without donor restrictions	With donor restrictions	June 30	
			2024	2023
NET ASSETS:				
General Operating Account (GOA) (Note 8)	\$ 6,946,027	\$ 3,479,443	\$ 10,425,470	\$ 10,136,708
Endowment (Note 8)	9,636,717	43,598,488	53,235,205	50,748,594
Split interest agreements (Note 9)		670,623	670,623	634,217
TOTAL NET ASSETS	\$ 16,582,744	\$ 47,748,554	\$ 64,331,298	\$ 61,519,519

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

CONSOLIDATED STATEMENTS OF CHANGES IN NET ASSETS WITH GENERAL OPERATING ACCOUNT DETAIL

with summarized financial information for the year ended June 30, 2023

			For the year ended June 30	
<i>In thousands of dollars</i>	Without Donor Restrictions	With Donor Restrictions	2024	2023
OPERATING REVENUE:				
Net student income <i>(Notes 2 and 12)</i>	\$ 1,382,904		\$ 1,382,904	\$ 1,331,557
Sponsored support <i>(Note 13)</i>				
Federal government – direct costs	496,124		496,124	491,878
Federal government – indirect costs	190,344		190,344	184,257
Non-federal sponsors – direct costs	83,055	\$ 193,810	276,865	297,846
Non-federal sponsors – indirect costs	25,081	24,265	49,346	51,681
Total sponsored support	794,604	218,075	1,012,679	1,025,662
Gifts for current use <i>(Note 14)</i>	131,570	396,109	527,679	485,882
Investment income:				
Endowment returns made available for operations <i>(Note 8)</i>	453,072	1,939,307	2,392,379	2,244,699
GOA returns made available for operations	225,065		225,065	173,279
Other investment income	44,422	4,065	48,487	43,305
Total investment income	722,559	1,943,372	2,665,931	2,461,283
Other revenue <i>(Note 15)</i>	883,012		883,012	792,916
Net assets released from restriction	2,494,440	(2,494,440)	0	0
TOTAL OPERATING REVENUE	6,409,089	63,116	6,472,205	6,097,300
OPERATING EXPENSES:				
Salaries and wages	2,631,642		2,631,642	2,421,076
Employee benefits <i>(Note 11)</i>	690,638		690,638	628,304
Services purchased	921,075		921,075	791,941
Depreciation <i>(Note 7)</i>	440,257		440,257	424,809
Space and occupancy	439,150		439,150	394,079
Supplies and equipment	289,700		289,700	283,323
Interest <i>(Note 10)</i>	226,405		226,405	208,590
Scholarships and other student awards <i>(Note 12)</i>	192,419		192,419	181,295
Other expenses <i>(Note 16)</i>	595,625		595,625	578,380
TOTAL OPERATING EXPENSES	6,426,911	0	6,426,911	5,911,797
NET OPERATING SURPLUS/(DEFICIT)	(17,822)	63,116	45,294	185,503
NON-OPERATING ACTIVITIES:				
Income from GOA Investments	14,515		14,515	24,769
GOA realized and change in unrealized appreciation, net <i>(Note 3)</i>	645,024		645,024	146,519
GOA returns made available for operations	(225,065)		(225,065)	(173,279)
Change in pledge balances <i>(Note 6)</i>		(125,365)	(125,365)	286,022
Change in interests in trusts held by others		913	913	(2,125)
Gifts for facilities and loan funds <i>(Note 14)</i>		54,309	54,309	96,175
Change in retirement obligations <i>(Note 11)</i>	(4,188)		(4,188)	70,158
Other changes	(127,427)		(127,427)	7,743
Transfers between GOA and endowment <i>(Note 8)</i>	(10,213)	2,069	(8,144)	(201,649)
Transfers between GOA and split interest agreements <i>(Note 9)</i>		18,896	18,896	28,398
Non-operating net assets released from restrictions	30,651	(30,651)	0	0
TOTAL NON-OPERATING ACTIVITIES	323,297	(79,829)	243,468	282,731
GENERAL OPERATING ACCOUNT NET CHANGE DURING THE YEAR	305,475	(16,713)	288,762	468,234
Endowment net change during the year	407,424	2,079,187	2,486,611	(129,086)
Split interest agreements net change during the year <i>(Note 9)</i>		36,406	36,406	(66,323)
NET CHANGE DURING THE YEAR	712,899	2,098,880	2,811,779	272,825
Net assets, beginning of year	15,869,845	45,649,674	61,519,519	61,246,694
NET ASSETS, END OF YEAR	\$ 16,582,744	\$ 47,748,554	\$ 64,331,298	\$ 61,519,519

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

CONSOLIDATED STATEMENTS OF CHANGES IN NET ASSETS OF THE ENDOWMENT

with summarized financial information for the year ended June 30, 2023

In thousands of dollars	Without Donor Restrictions	With Donor Restrictions	For the year ended June 30	
			2024	2023
Investment return (Note 3):				
Income from general investments	\$ 17,427	\$ 75,286	\$ 92,713	\$ 183,722
Realized and change in unrealized appreciation/(depreciation), net	823,000	3,567,335	4,390,335	1,153,926
Total investment return	840,427	3,642,621	4,483,048	1,337,648
Endowment returns made available for operations	(453,072)	(1,939,307)	(2,392,379)	(2,244,699)
Net investment return	387,355	1,703,314	2,090,669	(907,051)
Gifts for endowment (Note 14)	681	367,442	368,123	560,607
Transfers between endowment and the GOA (Note 8)	10,213	(2,069)	8,144	201,649
Capitalization of split interest agreements (Note 9)		23,560	23,560	50,747
Change in pledge balances (Note 6)		4,511	4,511	(179,700)
Change in interests in trusts held by others (Note 8)		26,478	26,478	8,121
Other changes	(3,394)	(31,480)	(34,874)	136,541
Net assets released from restrictions	12,569	(12,569)	0	0
NET CHANGE DURING THE YEAR	407,424	2,079,187	2,486,611	(129,086)
Net assets of the endowment, beginning of year	9,229,293	41,519,301	50,748,594	50,877,680
NET ASSETS OF THE ENDOWMENT, END OF YEAR	\$ 9,636,717	\$ 43,598,488	\$ 53,235,205	\$ 50,748,594

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

CONSOLIDATED STATEMENTS OF CASH FLOWS

	For the year ended June 30	
<i>In thousands of dollars</i>	2024	2023
CASH FLOWS FROM OPERATING ACTIVITIES:		
Change in net assets	\$ 2,811,779	\$ 272,825
Adjustments to reconcile change in net assets to net cash (used in) operating activities:		
Depreciation	440,257	424,809
Writeoffs and amortization of premium and discount related to bonds and notes payable	(73,841)	(37,179)
Amortization of debt issuance costs	749	409
Realized and change in unrealized appreciation, net	(5,149,989)	(1,336,740)
Change in fair value of interest rate exchange agreements	(1,795)	(4,985)
Change in interests in trusts held by others	(27,391)	(5,996)
Change in liabilities due under split interest agreements	54,218	42,175
Gifts of donated securities	(75,057)	(64,469)
Proceeds from the sale of gifts of securities without donor restrictions	11,955	16,437
Gifts for restricted purposes	(352,377)	(504,714)
Loss on disposal of assets	10,536	8,923
Change in accrued retirement obligations	17,126	(88,316)
Non-cash operating lease costs	40,355	(38,297)
Changes in operating assets and liabilities:		
Receivables, net	(21,708)	(9,479)
Prepayments and deferred charges	(50,214)	(45,228)
Pledges receivable, net	120,845	(107,200)
Accounts payable	55,686	(82,631)
Deferred revenue and other liabilities	69,190	43,770
Operating lease liability	(32,322)	64,853
NET CASH USED IN OPERATING ACTIVITIES	(2,151,998)	(1,451,033)
CASH FLOWS FROM INVESTING ACTIVITIES:		
Loans made to students, faculty, and staff	(62,785)	(62,985)
Payments received on student, faculty, and staff loans	38,497	42,902
Change in other notes receivable	413	494
Proceeds from the sales and maturities of investments	11,366,074	8,689,761
Purchase of investments	(9,237,914)	(7,988,945)
Change associated with repurchase agreements	(174,788)	599,085
Additions to fixed assets	(777,016)	(578,365)
NET CASH PROVIDED BY INVESTING ACTIVITIES	1,152,481	701,947
CASH FLOWS FROM FINANCING ACTIVITIES:		
Change in overdrafts included in accounts payable	1,576	4,295
Change in split interest agreements from new contributions, income and payments to annuitants	(35,123)	(41,970)
Proceeds from issuance of debt	2,287,902	177,296
Debt repayments	(1,295,464)	(42,995)
Proceeds from the sale of gifts of securities with donor restrictions	63,102	48,032
Gifts for restricted purposes	352,377	504,714
Change in government loan advances	(3,034)	(4,768)
NET CASH PROVIDED BY FINANCING ACTIVITIES	1,371,336	644,604
NET CHANGE IN CASH	371,819	(104,482)
Cash, beginning of year	1,704,390	1,808,872
CASH, END OF YEAR	\$ 2,076,209	\$ 1,704,390
Cash and cash equivalents (per <i>Consolidated Balance Sheets</i>)	\$ 162,879	\$ 245,589
Cash and restricted cash held in investments (<i>Note 3</i>)	1,913,330	1,458,801
TOTAL CASH AND CASH EQUIVALENTS	\$ 2,076,209	\$ 1,704,390
Supplemental disclosure of cash flow information:		
Accounts payable related to fixed asset additions	\$ 64,981	\$ 54,092
Cash paid for interest	\$ 264,581	\$ 235,881
New operating leases – right of use assets	\$ 27,516	\$ 150,680
Establishment of postretirement health plan trust	\$ 580,725	

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

1. UNIVERSITY ORGANIZATION

Harvard University (the “University”) is a private, not-for-profit institution of higher education with approximately 7,100 undergraduate and 13,900 graduate students in fiscal year 2024, as compared to 7,200 undergraduate and 14,200 graduate students in fiscal year 2023. Established in 1636, the University includes the Faculty of Arts and Sciences, the John A. Paulson School of Engineering and Applied Sciences, the Division of Continuing Education, ten graduate and professional Schools, the Radcliffe Institute for Advanced Study, a variety of research museums and institutes, and an extensive library system to support the teaching and research activities of the Harvard community.

The President and Fellows of Harvard College (the “Corporation”), a governing board of the University, has oversight responsibility for all of the University’s financial affairs. The Corporation delegates substantial authority to the Schools and departments for the management of their resources and operations.

The University includes Harvard Management Company (HMC), a wholly owned subsidiary founded in 1974 to manage the University’s investment assets. HMC is governed by a Board of Directors that is appointed by the Corporation.

2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Basis of presentation

The accompanying consolidated financial statements have been prepared on the accrual basis of accounting and include the accounts of the University and affiliated organizations controlled by the University. Significant inter-affiliate accounts and transactions have been eliminated.

Funds transferred to the University on behalf of specific beneficiaries (agency funds) are recorded as assets and liabilities in the *Consolidated Balance Sheets* and are not included in the *Consolidated Statements of Changes in Net Assets with General Operating Account Detail*.

Related parties to the University may include affiliates, trusts, investment holdings, Corporation members, senior management, their family members, and associated entities. Transactions with related parties occur in the ordinary course of activities and do not materially affect the University’s financial position.

The consolidated financial statements include certain prior year summarized comparative information in total, not by net asset classification. This information is not presented in sufficient detail to conform to generally accepted accounting principles (GAAP). Accordingly, such information should be read in conjunction with the University’s financial statements for the year ended June 30, 2023, from which the summarized information is derived. Certain prior year amounts have been reclassified to conform to current year presentation.

Net asset classifications

For the purposes of financial reporting, the University classifies resources into two net asset categories pursuant to any donor-imposed restrictions and applicable law.

Accordingly, the net assets of the University are classified in the accompanying consolidated financial statements in the categories that follow:

WITHOUT DONOR RESTRICTIONS — Net assets not subject to donor-imposed restrictions. Funds invested in fixed assets and unrestricted endowment funds comprise 76% of the University’s net assets without donor-imposed restrictions as of June 30, 2024. In addition, this category includes gifts and endowment income balances where the donor restriction has been met, University-designated loan funds, and other current funds.

WITH DONOR RESTRICTIONS — Net assets subject to legal or donor-imposed restrictions that will be satisfied either by actions of the University, the passage of time, or both. These net assets include net assets subject to donor-imposed restrictions that are invested to provide a perpetual source of income to the University. Generally, donors of these assets require the University to maintain and invest the original contribution in perpetuity but permit the use of some or all investment returns for general or specific purposes. The appreciation on these perpetual contributions must be reported as net assets with donor restrictions until appropriated for spending in accordance with Massachusetts law. Also included in this category are gifts donated for a particular purpose and amounts subject to time restrictions such as funds pledged for future payment.

Revenues from sources other than contributions are generally reported as increases in net assets without donor restrictions. Expenses are reported as decreases in net assets without donor restrictions. Gains and losses on investments are reported as increases or decreases in net assets without

donor restrictions, unless their use is restricted by donor stipulations or by law. Investment returns earned by restricted donor funds are initially classified as net assets with donor restrictions and then reclassified to net assets without donor restrictions when expenses are appropriated or incurred for their intended purpose. Expirations of donor restrictions on net assets are reported as reclassifications from net assets with donor restrictions to net assets without donor restrictions and appear as “Net assets released from restrictions” and “Non-operating net assets released from restrictions” in the *Consolidated Statements of Changes in Net Assets*.

Liquidity and availability

As part of the University’s liquidity management, it has a policy to structure its financial assets to be available as its general expenditures, liabilities and other obligations come due. A significant portion of the University’s annual expenditures are funded by operating revenues in the current year including student income, sponsored support, endowment returns made available for operations, gifts for current use and other revenues.

The University’s financial assets available within one year of the balance sheet date for general expenditure, such as operating expenses, scheduled principal payments on debt, and capital construction costs not financed with debt, are as follows (in thousands):

	June 30,	
	2024	2023
FINANCIAL ASSETS		
Cash and cash equivalents	\$ 162,879	\$ 245,589
Receivables, net	370,979	349,271
Pledge receivables due in one year	407,852	459,286
Cash and short-term investments held separately by General Operating Account (GOA) ¹	2,030,830	1,418,472
Endowment returns made available for operations in the following year	2,767,274	2,649,533
TOTAL FINANCIAL ASSETS AVAILABLE WITHIN ONE YEAR	\$ 5,739,814	\$ 5,122,151
LIQUIDITY RESOURCES		
Credit facility, undrawn balance	1,500,000	1,500,000
Tax-exempt commercial paper, undrawn balance	1,000,000	975,000
Taxable commercial paper, undrawn balance	2,000,000	1,847,704
TOTAL FINANCIAL ASSETS AND LIQUIDITY RESOURCES AVAILABLE WITHIN ONE YEAR	\$ 10,239,814	\$ 9,444,855

¹ The University has a policy of maintaining liquidity outside of the General Investment Accounting (GIA) through a combination of cash equivalents and short-term investments.

Endowment and GOA returns liquidated from investments and made available for operations over the course of the fiscal year are distributed to University department and program budgets to spend, subject to donor restrictions where applicable.

While the University has no intention of doing so, there are additional investments held by the University and the endowment that could be liquidated in the event of an unexpected disruption. While a portion of the endowment is subject to donor restrictions, there was \$9.6 billion and \$9.2 billion in endowment funds without donor restrictions at June 30, 2024 and 2023, respectively, and \$6.1 billion and \$5.6 billion of General Operating Account investments (GOA) at June 30, 2024 and 2023, respectively, that could be accessed with the approval of the Corporation and subject to the redemption provisions described in *Note 3*.

Revenue recognition

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

Student income is derived from degree programs as well as executive and continuing education programs and includes tuition, fees, and board and lodging. Student income is recognized ratably over the academic period of the course or program offered based on time elapsed, and scholarships awarded to students reduce the amount of revenue recognized. The University’s individual schools have various billing and academic cycles and the majority of our programs are completed within the fiscal year. Student income received in advance of services to be rendered is recorded as deferred revenue which totaled \$215.6 million and \$208.3 million at June 30, 2024 and 2023, respectively, which are primarily recognized in the subsequent fiscal year.

Total student income of \$1.4 billion and \$1.3 billion was recorded during the years ended June 30, 2024 and 2023, respectively. Student tuition, fees, board and lodging at published rates is summarized as follows for the years ended June 30, 2024 and 2023 (in thousands of dollars):

	2024	2023
Undergraduate program	\$ 414,603	\$ 409,890
Graduate and professional degree programs	707,329	687,136
Continuing education and executive programs	586,896	544,039
Board and lodging	230,792	221,235

Scholarships applied to student charges were \$556,716 and \$530,743 for the years ended June 30, 2024 and 2023, respectively.

Unconditional contributions including pledges are recognized immediately and classified as either net assets with donor restrictions or net assets without donor restrictions. Conditional contributions for which cash is received are accounted for as a liability within deferred revenue.

Sponsored support of \$1.0 billion includes support from governmental and private sources. Certain sponsored arrangements are considered exchange arrangements, and revenue under these agreements is recognized based on the University's fulfillment of the contract, which is typically based on costs incurred or the achievement of milestones. Other sponsored support is considered contribution revenue, which is recognized when any donor-imposed conditions have been met, if applicable. Sponsored conditional contributions received, where the barrier to entitlement is not yet overcome, are recorded as deferred revenues of \$66.0 million and \$84.7 million as of June 30, 2024 and 2023, respectively. As of June 30, 2024, the University also had \$1.6 billion awarded but not yet expended contributions related to sponsored programs where the condition had not yet been met. This is subject to federal appropriations. Funding received in advance of recognition is recorded as deferred revenue.

Other revenue of \$883.0 million in fiscal 2024 and \$792.9 million in fiscal 2023 includes several revenue streams considered exchange contracts with customers totaling \$719.1 million for fiscal year 2024 and \$651.5 million in fiscal year 2023. These revenues are recognized at the point in time goods or services are provided. Deferred revenues related to other revenue of \$84.3 million and \$96.5 million were recorded as of June 30, 2024 and 2023, which are primarily recognized in the subsequent fiscal year.

Measure of operations

Revenues earned, expenses incurred, and returns made available for operations for the purpose of teaching, conducting research, and the other programs and services of the University are the components of "Net operating surplus" in the *Consolidated Statements of Changes in Net Assets with General Operating Account Detail*. The University's non-operating activity within the *Consolidated Statements of Changes in Net Assets with General Operating Account Detail* includes contributions to the University's building construction and renovation funds, investment returns (net of amounts made available for operations), change in pledge balances, long-term benefit plan obligation funding changes, and other infrequent transactions.

Collections

The University's vast array of museums and libraries contains priceless works of art, historical treasures, literary works, and artifacts. These collections are protected and preserved for public exhibition, education, research, and the furtherance of public service. They are neither disposed of for financial gain nor encumbered in any manner. Accordingly, such collections are not recorded for financial statement purposes. Proceeds on deaccessioned collections are used to fund new collections or the direct care of existing collections. Direct care is defined as general care for the preservation of a collection.

Insurance programs

The University, together with the Harvard-affiliated teaching hospitals, has formed a captive insurance company, Controlled Risk Insurance Company (CRICO), to provide limited professional liability, general liability, and medical malpractice insurance for its shareholders. CRICO provides malpractice coverage with no deductible for medical professionals practicing within Harvard's University Health Services department, the School of Dental Medicine, and the T.H. Chan School of Public Health. The University self-insures a portion of its medical professional liability and general liability programs and maintains a reserve for incurred claims, including those related to Harvard Medical School activities not occurring in the affiliated teaching hospitals.

The University also maintains reserves for the self-insured portion of claims related to automobile liability, property damage, and workers' compensation; these programs are supplemented with commercial excess insurance above

the University's self-insured retention. In addition, the University maintains insured dental plans and retiree health plans, and is self-insured for unemployment and all health plans for active employees. The University's claims liabilities are recognized as incurred, including claims that have been incurred but not reported, and are included in operating expenses.

Tax

The University is a tax-exempt organization under Section 501(c)(3) of the Internal Revenue Code.

On December 22, 2017, the Tax Cuts and Jobs Act (the "Act") was enacted. The Act impacts the University in several ways, including the addition of excise taxes on executive compensation and net investment income, as well as new rules for calculating unrelated business taxable income. The University records an estimate for related tax expense based on currently available regulatory guidance of the Act and continues to evaluate the impact of the Act on current and future tax positions.

Use of estimates

The preparation of financial statements in accordance with U.S. GAAP requires management to make estimates and assumptions that affect reported amounts and disclosures. Actual results could differ from those estimates.

New accounting pronouncements

Effective July 1, 2022, the University adopted ASU 2021-05, *Leases (Topic 842): Lessors—Certain Leases with Variable Lease Payments*, which amends the lease classification requirements for lessors with certain leases containing variable payments. A lessor is to classify and account for a lease with variable lease payments that do not depend on an index or a rate as an operating lease if the lease would have been classified as a sales-type lease or a direct financing lease and the lessor would have otherwise recognized a day-one loss. The University adopted ASU 2021-05 prospectively. This guidance did not have a significant impact on the University's consolidated financial statements.

Effective July 1, 2023, the University adopted ASU 2022-04, *Disclosure of Supplier Finance Program Obligations*, which requires the buyer in a supplier finance program to disclose information about the key terms of the program, outstanding confirmed amounts as of the end of the period,

and a description of where in the financial statements outstanding amounts are presented. The University adopted ASU 2022-04 prospectively. This guidance did not have a significant impact on the University's consolidated financial statements. Additionally, ASU 2022-04 requires a rollforward of such amounts during each annual period, which will be effective for fiscal year 2025 for the University. The University does not believe this requirement will impact the consolidated financial statements going forward.

Effective July 1, 2023, the University adopted ASU 2016-13 *Financial Instruments—Credit Losses (Topic 326):*

Measurement of Credit Losses on Financial Instruments.

ASU 2016-13 replaced the incurred loss methodology with an expected loss methodology that is referred to as the current expected credit loss ("CECL") methodology. CECL requires an estimate of credit losses for the remaining estimated life of the financial asset using historical experience, current conditions, and reasonable and supportable forecasts and generally applies to financial assets measured at amortized cost, including loan receivables and held-to-maturity debt securities, and some off-balance sheet credit exposures such as unfunded commitments to extend credit. Financial assets measured at amortized cost must be presented at the net amount expected to be collected by using an allowance for credit losses. This guidance did not have a significant impact on the University's consolidated financial statements.

In March 2020, the FASB issued ASU 2020-04, *Reference Rate Reform (Topic 848): Facilitation of the Effects of Reference Rate Reform on Financial Reporting*, and in January 2021 issued ASU 2021-01, *Reference Rate Reform (Topic 848): Scope*. These ASUs provide temporary optional expedients and exceptions to existing guidance on contract modifications and hedge accounting to facilitate the market transition from existing reference rates, such as London Interbank Offered Rate ("LIBOR") which has been phased out, to alternate reference rates, such as Secured Overnight Financing Rate ("SOFR"). These standards are effective upon issuance through December 31, 2022. The adoption of this standard has not had a material impact on the University's consolidated financial statements and disclosures. In December 2022, the FASB issued ASU 2022-06, *Reference Rate Reform (Topic 848): Deferral of the Sunset Date of Topic 848*, which defers the sunset date of reference rate reform relief to December 31, 2024.

3. INVESTMENTS

Investments are presented at fair value in accordance with GAAP and under the guidelines prescribed by the HMC investment valuation policy, which is reviewed and approved by the HMC Board of Directors on an annual basis.

The majority of the University's investments are managed by HMC in the GIA, a pooled investment account that consists primarily of endowment assets. Certain other investments such as cash, short-term investments, split interest agreements and other assets, are managed separately from the GIA.

The University's investment holdings as of June 30, 2024 and 2023 are summarized in the following table (in thousands of dollars):

	2024	2023
Investment portfolio assets		
Pooled general investment account assets	\$ 59,687,011	\$ 56,633,201
Other investments	3,008,056	2,445,718
Investment portfolio, at fair value	62,695,067	59,078,919
Securities pledged to counterparties, at fair value	63,786	122,758
TOTAL INVESTMENT ASSETS	62,758,853	59,201,677
Pooled general investment account liabilities	1,113,126	626,371
Interest rate exchange agreement	1,829	3,624
TOTAL OTHER LIABILITIES ASSOCIATED WITH THE INVESTMENT PORTFOLIO	1,114,955	629,995
TOTAL INVESTMENTS, NET	\$ 61,643,898	\$ 58,571,682

As of June 30, 2024 and 2023, University net investments were comprised of the following components (in thousands of dollars):

	2024	2023
POOLED GENERAL INVESTMENT ACCOUNT		
Endowment ¹	\$ 51,286,075	\$ 48,679,919
General operating account	6,050,001	5,577,019
Split interest agreements	876,711	863,185
Other internally designated funds	424,884	1,009,465
TOTAL POOLED GENERAL INVESTMENT ACCOUNT NET ASSETS	\$ 58,637,671	\$ 56,129,588
OTHER INVESTMENTS OUTSIDE THE GENERAL INVESTMENT ACCOUNT		
General operating and other investments ²	2,306,998	1,784,840
Split interest agreements	699,229	657,254
TOTAL OTHER INVESTMENTS OUTSIDE THE GENERAL INVESTMENT ACCOUNT	\$ 3,006,227	\$ 2,442,094
TOTAL INVESTMENTS, NET	\$ 61,643,898	\$ 58,571,682

¹ As of June 30, 2024, the total net assets of the endowment of \$53,235,205 is comprised of investments in the GIA of \$51,286,075, pledges of \$1,257,997, interests in trusts held by others of \$438,225, and \$252,908 of other non-GIA investments and GIA interest and dividends net of all internal and external management fees and expenses. See Note 8 for further composition of the net assets of the endowment.

² Consists primarily of repurchase agreements, US government securities, money markets, and fixed income funds.

Investment return

A summary of the University's total return on investments for fiscal years 2024 and 2023 is presented below (in thousands of dollars):

	2024	2023
Return on pooled general investment account:		
Realized and change in unrealized appreciation, net	\$ 5,060,280	\$ 1,320,925
Interest, dividend, fees, and expenses, net	107,094	211,887
Total return on pooled general investment account ¹	5,167,374	1,532,812
Return on other investments:		
Realized and change in unrealized appreciation, net	89,709	15,815
Interest, dividend, fees, and expenses, net	68,917	59,722
Total return on other investments	\$ 158,626	\$ 75,537
Realized and change in unrealized appreciation on interest rate exchange agreement, net	2,222	3,929
TOTAL RETURN ON INVESTMENTS²	\$ 5,328,222	\$ 1,612,278

¹ Net of all internal and external management fees and expenses.

² Total return on investments is comprised of returns on the endowment, GOA, Split Interest Agreements and other.

Fair value hierarchy

The University's investments have been categorized based upon the fair value hierarchy in accordance with ASC 820, which prioritizes the inputs to valuation techniques used to measure fair value of investment assets and liabilities into three levels:

LEVEL 1 Unadjusted quoted prices in active markets that are accessible at the measurement date for identical, unrestricted assets or liabilities;

LEVEL 2 Quoted prices in markets that are not considered to be active or financial instruments for which all significant inputs are observable, either directly or indirectly;

LEVEL 3 Prices or valuations that require inputs that are significant to the fair value measurement, unobservable and/or require the University to develop its own assumptions.

Investments in externally managed funds where the University utilizes net asset values (as reported by external managers) as a practical expedient for fair value measurements are excluded from the fair value hierarchy.

The level of an asset or liability within the fair value hierarchy is based on the lowest level of any input that is significant to the fair value measurement. The University endeavors to utilize all relevant and available information in measuring fair value.

The following is a summary of the levels within the fair value hierarchy for those investment assets and liabilities subject to fair value measurement as of June 30, 2024 and summarized as of June 30, 2023 (in thousands of dollars):

	2024				2023	
	Level 1	Level 2	Level 3 ⁶	Net asset value	Total	Total
ASSETS:						
Cash and cash equivalents ¹	\$ 1,913,330				\$ 1,913,330	\$ 1,458,801
Repurchase agreements		\$ 325,577			325,577	150,789
Domestic equity	2,125,469			\$ 2,289,143	4,414,612	3,389,362
Foreign equity	312,564			823,685	1,136,249	1,076,842
Global equity				891,728	891,728	1,211,417
Domestic fixed income	1,658,693			1,045,461	2,704,154	3,051,854
Foreign fixed income	16,247				16,247	15,839
Emerging market equity and debt	101,276			2,603,873	2,705,149	3,123,040
High yield	16,728		\$ 198,591		215,319	303,874
Hedge funds				18,879,953	18,879,953	17,267,674
Private equity			1,277,685	22,662,659	23,940,344	23,123,874
Natural resources	739			443,544	444,283	429,239
Real estate			6,861	3,098,156	3,105,017	3,003,337
Inflation-indexed bonds	1,096,114				1,096,114	1,077,269
Due from brokers		74,282	4,645		78,927	93,854
Other investments		130,807			130,807	82,826
INVESTMENT ASSETS SUBJECT TO FAIR VALUE LEVELING	\$ 7,241,160	\$ 530,666	\$ 1,487,782	\$ 52,738,202	\$ 61,997,810	\$ 58,859,891
Other investment assets not subject to fair value ²					761,043	341,786
TOTAL INVESTMENT ASSETS³					\$ 62,758,853	\$ 59,201,677
Interests in trusts held by others ⁴			466,283		466,283	438,892
NON-INVESTMENT ASSETS SUBJECT TO FAIR VALUE LEVELING			\$ 466,283		\$ 466,283	\$ 438,892
TOTAL ASSETS					\$ 63,225,136	\$ 59,640,569
LIABILITIES:						
Due to brokers ⁵	\$ 888	\$ 8,871			\$ 9,759	\$ 18,215
Other liabilities subject to fair value		602,478	\$ 42,289		644,767	138,733
INVESTMENT LIABILITIES SUBJECT TO FAIR VALUE LEVELING	\$ 888	\$ 611,349	\$ 42,289		\$ 654,526	\$ 156,948
Other investment liabilities not subject to fair value					460,429	473,047
TOTAL INVESTMENT LIABILITIES					\$ 1,114,955	\$ 629,995
Liabilities due under split interest agreements ⁴		905,317			905,317	886,222
NON-INVESTMENT LIABILITIES SUBJECT TO FAIR VALUE LEVELING		\$ 905,317			\$ 905,317	\$ 886,222
TOTAL LIABILITIES					\$ 2,020,272	\$ 1,516,217

¹ This excludes money markets held in "Cash and cash equivalents" on the Consolidated Balance Sheets of \$55.0 million as of June 30, 2024 and 2023, which are Level 1 investments.

² As of June 30, 2024 and 2023 other assets not subject to fair value consists primarily of receivables for transactions that settled subsequent to the balance sheet date of \$627,506 and \$239,815, respectively.

³ As of June 30, 2024 and 2023, total investment assets, net equal \$61,643,898 and \$58,571,682, respectively.

⁴ Amounts excluded from investments and included separately on the University's Consolidated Balance Sheets.

⁵ Includes fair value of an interest rate exchange agreement on the University's debt portfolio of \$1,829 and \$3,624 as of June 30, 2024 and 2023, respectively.

⁶ As of June 30, 2024, \$438,492 of Level 3 assets were valued using significant unobservable inputs.

The following is a rollforward of Level 3 investments for the year ended June 30, 2024 and the condensed June 30, 2023 rollforward of Level 3 investments (in thousands of dollars).

	Beginning balance as of July 1, 2023	Net realized gains/ (losses)	Net change in unrealized appreciation/ (depreciation) ¹	Purchases/ contributions	Sales/ distributions	Transfers into Level 3 ²	Transfers out of Level 3 ³	Ending balance as of June 30, 2024
INVESTMENT ASSETS:								
High yield	\$ 290,011	\$ (13,685)	\$ 6,775	\$ 29,939	\$ (114,449)			\$ 198,591
Private equity	1,157,032	164,834	(109,154)	145,978	(306,930)	\$ 245,277	\$ (19,352)	1,277,685
Real estate	7,170	300	(609)					6,861
Due from brokers	4,645							4,645
INVESTMENT ASSETS SUBJECT TO FAIR VALUE LEVELING								
	\$ 1,458,858	\$ 151,449	\$ (102,988)	\$ 175,917	\$ (421,379)	\$ 245,277	\$ (19,352)	\$ 1,487,782
Interests in trusts held by others	\$ 438,892		\$ 28,985		\$ (1,594)			\$ 466,283
NON-INVESTMENT ASSETS SUBJECT TO FAIR VALUE LEVELING								
	\$ 438,892		\$ 28,985		\$ (1,594)			\$ 466,283
TOTAL ASSETS SUBJECT TO FAIR VALUE LEVELING								
	\$ 1,897,750	\$ 151,449	\$ (74,003)	\$ 175,917	\$ (422,973)	\$ 245,277	\$ (19,352)	\$ 1,954,065
INVESTMENT LIABILITIES:								
Other liabilities subject to fair value	\$ 138,733		\$ (65)	\$ (233,489)	\$ 137,110			\$ 42,289
TOTAL LIABILITIES SUBJECT TO FAIR VALUE LEVELING								
	\$ 138,733	\$ 0	\$ (65)	\$ (233,489)	\$ 137,110			\$ 42,289
NET ASSETS SUBJECT TO FAIR VALUE LEVELING								
	\$ 1,759,017	\$ 151,449	\$ (73,938)	\$ 409,406	\$ (560,083)	\$ 245,277	\$ (19,352)	\$ 1,911,776

¹ Total change in unrealized (depreciation)/appreciation relating to Level 3 investment assets and investment liabilities still held by the University at June 30, 2024 is \$121,508 and is reflected in "Realized and change in unrealized appreciation/(depreciation), net" in the Consolidated Statements of Changes in Net Assets.

² The transfers into Level 3 represent certain private equity investments that were valued using a secondary sale price.

³ The transfers out of Level 3 represent interests in private companies that underwent an initial public offering during the fiscal year.

	Beginning balance as of July 1, 2022	Net realized gains/ (losses)	Net change in unrealized (depreciation)/ appreciation ¹	Purchases/ contributions	Sales/ distributions	Transfers into Level 3	Transfers out of Level 3 ²	Ending balance as of June 30, 2023
PRIOR YEAR NET ASSETS SUBJECT TO FAIR VALUE LEVELING								
	\$ 1,780,605	\$ 24,079	\$ (48,908)	\$ 617,179	\$ (613,838)		\$ (100)	\$ 1,759,017

¹ Total change in unrealized (depreciation)/appreciation relating to Level 3 investment assets and investment liabilities still held by the University at June 30, 2023 is \$35,939 and is reflected in "Realized and change in unrealized appreciation/(depreciation), net" in the Consolidated Statements of Changes in Net Assets.

² The transfers out of Level 3 represent interests in private companies that underwent an initial public offering during the fiscal year.

Investment strategy and risk

The University utilizes a number of wholly owned subsidiary entities to support its investment activities. The consolidated financial statements include all assets, liabilities, income, and expenses associated with these entities and intercompany accounts and transactions have been eliminated during consolidation.

The University's investment strategy incorporates a diversified asset allocation approach and maintains, within defined limits, exposure to the movements of the global public and private equity, fixed income, real estate, and commodities markets. Exposure to these markets is achieved through direct investments in individual securities, investments in special purpose vehicles and/or through investments in vehicles advised by external managers.

Investments in global markets involve a multitude of risks such as price, interest rate, market, sovereign, currency, liquidity and credit risks, amongst many others. The University manages exposure to these risks through established policies and procedures related to its ongoing investment diligence and operational due diligence programs. The University also considers manager concentration risk. As of June 30, 2024, 13% of the GIA NAV was invested across 5 diversified fund managers. The University anticipates that the value and composition of its investments may, from time to time, fluctuate substantially in response to any or all of the risks described herein.

Cash and cash equivalents

Cash and cash equivalents are recorded at cost, which approximates fair value, and includes cash in bank accounts, institutional money market funds and other temporary

investments held for working capital purposes with original maturities of three months or less. Cash and cash equivalents do not include cash balances held as collateral by the University. Cash and cash equivalents designated for investment purposes are included in the “Investment portfolio, at fair value” in the *Consolidated Balance Sheets*.

Repurchase agreements

The University *Consolidated Balance Sheets* display the assets generated by repurchase transactions. The University enters into these transactions under agreements containing master netting arrangements. The University requires the fair value of the collateral exchanged under these agreements to be equal to or in excess of the total amount of the agreement, including interest where applicable. At June 30, 2024 and 2023 the University had gross asset repurchase agreements of \$0.3 billion and \$0.2 billion which were fully collateralized. The University does not offset repurchase agreements that are subject to master netting arrangements or similar arrangements on the University's *Consolidated Balance Sheets*.

Dividend and interest income

Dividend income is recognized net of applicable withholding taxes on the ex-dividend date. Non-cash dividends are recorded at the fair value of the securities received. Interest income and expense is recorded net of applicable withholding taxes, on an accrual basis. The University amortizes bond premiums and accretes bond discounts using the effective yield method and when cash collection is expected.

Traded securities

Instruments listed or traded on a securities exchange are valued at the last quoted price on the primary exchange where the security is traded. Where there is no readily available closing price on the valuation date, long positions are valued at the bid price and short positions are valued at the ask price. Restrictions that are attached to a security are factored into the valuation of that security, reflective of the estimated impact of those restrictions. Investments in non-exchange traded debt and equity instruments are primarily valued using inputs provided by independent pricing services or by broker/dealers who actively make markets in these securities.

Derivatives

The University uses a variety of financial instruments with off-balance sheet risk involving contractual or optional commitments for future settlement, which are exchange traded or executed over the counter (OTC). These instruments are used to (1) manage exposure to certain asset classes and/or various market risks, (2) arbitrage mispricings of related securities and (3) to manage the interest, cost and risk associated with its outstanding and/or future debt. These instruments are classified as due to/from brokers and may include option, swap, credit default, interest rate, and forward contracts. These types of instruments are primarily valued using industry standard models with independent market inputs, or by broker quotes. Inputs such as prices, spreads, curves, and/or broker quotes are evaluated for source reliability and consistency with industry standards. Counterparty marks obtained and utilized to determine daily collateral requirements are also used to corroborate input reasonability. The University considers current market conditions including interest rate and credit risks in its evaluation of inputs, pricing methodologies, and models utilized to determine fair values.

In connection with its investments in derivatives, the University maintains master netting agreements and collateral agreements with its counterparties. These agreements provide the University the right, in the event of default by the counterparty (such as bankruptcy or a failure to pay or perform), to net a counterparty's rights and obligations under the agreement and to liquidate and offset collateral against any net amount owed by the counterparty. Collateral, generally in the form of debt obligations issued by the US Treasury, is exchanged on a daily basis as required by fluctuations in the market.

Specific credit limits are established for counterparties based on their individual credit ratings. Credit limits are monitored daily by the University and are adjusted according to policy, as necessary. Some of the financial instruments entered into by the University contain credit-risk-related contingency features that allow the parties to the agreement to demand immediate payment for outstanding contracts and/or collateral.

The following table presents information about the University's derivatives by primary risk exposure for the years ended June 30, 2024 and 2023 (in thousands of dollars):

	As of June 30, 2024			For the year ended June 30, 2024	As of June 30, 2023			For the year ended June 30, 2023
	Average Quarterly Notional	Gross derivative assets	Gross derivative liabilities	Net profit/ (loss) ⁴	Average Quarterly Notional	Gross derivative assets	Gross derivative liabilities	Net profit/ (loss) ⁴
Primary risk exposure								
Equity instruments	\$ 1,796,421	\$ 79,883	\$ 13,682	\$ 178,867	\$ 2,328,894	\$ 115,648	\$ 41,180	\$ 131,794
Fixed income instruments ¹	117,000		1,829	2,222	117,000		3,624	3,929
Currency instruments	2,766	4,355	4,359	(830)	18,875	1,121	1,123	(1,792)
Credit instruments	4,810	4,800		236	4,800	4,797		132
SUBTOTAL		\$ 89,038	\$ 19,870	\$ 180,495		\$ 121,566	\$ 45,927	\$ 134,063
TOTAL COUNTERPARTY NETTING²		(11,940)	(11,940)			(27,712)	(27,712)	
NET AMOUNTS INCLUDED IN THE CONSOLIDATED BALANCE SHEETS³		77,098	7,930			93,854	18,215	
Collateral								
Cash collateral received/posted		122				120		
Securities collateral received/ posted ⁵		86,717	32,983			89,351	98,305	
TOTAL SECURITIES COLLATERAL RECEIVED/POSTED		86,839	32,983			89,471	98,305	
NET AMOUNT		(9,741)	(25,053)			4,383	(80,090)	
NET AMOUNT IN ACCORDANCE WITH ASC 210⁶		\$ 0	\$ 0			\$ 4,383	\$ 0	

¹ For the year ended June 30, 2024 and 2023 the balance represents an interest rate exchange swap on the University's debt portfolio.

² GAAP permits the netting of derivative assets and liabilities and the related cash collateral received and paid when a legally enforceable master netting agreement exists between the University and a derivative counterparty.

³ Included within the "Investment portfolio, at fair value" and "Other liabilities associated with the investment portfolio" line items of the Consolidated Balance Sheets.

⁴ Included within "Realized and change in unrealized appreciation/(depreciation), net" within the Consolidated Statements of Changes in Net Assets.

⁵ Includes securities posted to meet initial margin requirements on exchange traded futures.

⁶ Excludes any over-collateralized amounts in accordance with ASC 210.

External advisors

Investments managed by external advisors include investments in private equity, real estate, natural resources, hedge funds, and other externally managed funds. The University generally utilizes the capital account balance provided by the external advisor as a practical expedient to fair value. To evaluate the adequacy of these fair value measurements, the University has assessed factors including, but not limited to, the external advisor's adherence to fair value principles in calculating the capital account balance, the existence of transactions at NAV at the measurement date and the existence or absence of

certain restrictions at the measurement date. In addition, the University evaluates these external advisors through ongoing due diligence and operational oversight, which includes an analysis of an advisor's use of and adherence to fair value principles.

The University, as an investor, has commitments to make periodic contributions in future periods to the investments managed by external advisors. The amounts of these expected disbursements as of June 30, 2024 and 2023 are disclosed below (in thousands of dollars):

	As of June 30, 2024			As of June 30, 2023		
	Fair value ¹	Remaining unfunded commitments	Estimated remaining life ²	Fair value ¹	Remaining unfunded commitments	Estimated remaining life ²
Private equity funds	\$ 19,009,670	\$ 8,208,903	4 – 10	\$ 18,505,877	\$ 8,958,071	4 – 10
Real estate funds	2,929,004	1,957,707	4 – 10	2,790,305	2,048,930	4 – 10
Other externally managed funds ³	3,368,975	2,258,213	2 – 8	3,517,860	2,317,366	2 – 8
TOTAL	\$ 25,307,649	\$ 12,424,823		\$ 24,814,042	\$ 13,324,367	

¹ Represents the fair value of the funded portion of investments with remaining unfunded commitments.

² The estimated remaining lives of these funds, expressed in years, are forward-looking projections based on the University's estimates and could vary significantly depending on the investment decisions of external managers, changes in the University's investment portfolio, and other circumstances.

³ Investments in externally managed funds primarily include exposures to hedge funds and natural resources.

Investments in externally managed funds generally have limited redemption options for investors and, subsequent to final closing, may or may not permit subscriptions by new or existing investors. These entities may also have the ability to impose gates, lockups and other restrictions on an investor's ability to readily redeem out of their investment interest in the fund.

Direct investments

Direct investments are primarily valued using a combination of independent appraisals and/or one or more industry standard valuation techniques (e.g., income approach, market approach, or cost approach). The income approach is primarily based on the investment's anticipated future income using one of two principal methods: the discounted cash flow method or the capitalization method. Inputs and estimates developed and utilized with these techniques may be subjective, unobservable, and require

judgment regarding significant matters such as estimating the amount and timing of future cash flows, forward pricing assumptions and the selection of discount and capitalization rates that appropriately reflect market and credit risks. The market approach derives investment value through comparison to recent and relevant market transactions with similar investment characteristics. The cost approach is utilized when the cost of the investment is determined to be the best representation of fair value. This method is typically used for newly purchased or undeveloped assets. When applicable, the University examines market data and collaborates closely with independent appraisers to arrive at the best estimation of fair value for each respective asset. The HMC Board of Directors discusses the valuation process and results with HMC management, and makes determinations on significant matters impacting valuation that may arise from time to time.

4. RECEIVABLES

The major components of receivables, net of reserves for doubtful accounts of \$13.6 million and \$16.4 million as of June 30, 2024 and 2023, respectively, were as follows (in thousands of dollars):

	2024	2023
Federal sponsored support	\$ 79,024	\$ 74,844
Publications	68,407	69,487
Continuing education and executive programs	63,555	57,330
Leases	33,225	32,820
Tuition and fees	22,066	22,579
Gift receipts	20,843	7,067
Non-federal sponsored support	15,131	17,791
Other	68,728	67,353
TOTAL RECEIVABLES, NET	\$ 370,979	\$ 349,271

5. NOTES RECEIVABLE

Notes receivable are recorded initially at face value plus accrued interest, which approximates fair value. Notes receivable, and related allowance for doubtful accounts, were as follows (in thousands of dollars):

	2024			2023		
	Receivable	Allowance	Net	Receivable	Allowance	Net
Student loans:						
Government revolving	\$ 19,029	\$ 447	\$ 18,582	\$ 22,240	\$ 519	\$ 21,721
Institutional	74,195	1,677	72,518	73,473	1,631	71,842
Total student loans	93,224	2,124	91,100	95,713	2,150	93,563
Faculty and staff loans	327,461	179	327,282	300,710	179	300,531
Other loans	43,323	37,429	5,894	42,527	36,220	6,307
TOTAL	\$ 464,008	\$ 39,732	\$ 424,276	\$ 438,950	\$ 38,549	\$ 400,401

Government revolving loans are funded principally with federal advances to the University under the Perkins Loan, the Health Professions Student Loan (HPSL) and Loans for Disadvantaged Students in Health Professions (LDS) Programs. These advances totaled \$21.7 million and \$24.7 million as of June 30, 2024 and 2023, respectively, and are included in "Deferred revenue and other liabilities" in the *Consolidated Balance Sheets*. During fiscal year 2018, the

Perkins Loan Program ended and as a result the University began making required repayments to the government. In fiscal year 2024, the University made the requested \$3.7 million repayment. Interest earned on the revolving and institutional loan programs is reinvested to support additional loans. The repayment and interest rate terms of the institutional loans vary considerably.

Faculty and staff notes receivable primarily consists of mortgage and educational loans. Mortgages include shared appreciation loans, loans that bear interest at the applicable federal rate and interest-free loans. In addition, certain mortgages that bear interest at the current market rate or applicable federal rate may be subsidized for an initial period. The educational loans are primarily zero-interest loans.

The University assesses the adequacy of the allowance for doubtful accounts by evaluating the loan portfolio, including such factors as the differing economic risks

associated with each loan category, the financial condition of specific borrowers, the economic environment in which the borrowers operate, the level of delinquent loans, the value of any collateral, and, where applicable, the existence of any guarantees or indemnifications. In addition to these factors, the University reviews the aging of the loans receivable and the default rate in comparison to prior years. The allowance is adjusted based on these reviews. The University considers the allowance at June 30, 2024 and 2023 to be reasonable and adequate to absorb potential credit losses inherent in the loan portfolio.

6. PLEDGES RECEIVABLE

Unconditional promises to donate to the University in the future are initially recorded at fair value (pledge net of discount) and subsequently amortized over the expected payment period, net of an allowance for uncollectible pledges. The University's indicative 1- to 15-year taxable unsecured borrowing rate is used to discount pledges receivable at the end of the fiscal year they are received. Discounts of \$329.4 million and \$351.2 million for the years ended June 30, 2024 and 2023, respectively, were calculated using rates ranging from 0.7% to 5.0%.

Pledges receivable included in the financial statements as of June 30, 2024 and 2023 are expected to be realized as follows (in thousands of dollars):

	2024	2023
Within one year	\$ 912,669	\$ 866,208
Between one and five years	1,601,043	1,711,457
More than five years	518,285	603,713
Less: discount and allowance for uncollectible pledges	(453,208)	(481,744)
TOTAL PLEDGES RECEIVABLE, NET	\$ 2,578,789	\$ 2,699,634

Pledges receivable as of June 30, 2024 and 2023 have been designated for the following purposes (in thousands of dollars):

	2024	2023
General Operating Account balances:		
Gifts for current use	\$ 884,831	\$ 952,604
Non-federal sponsored awards	168,935	199,014
Construction and life income	267,026	294,530
Total General Operating Account balances	1,320,792	1,446,148
Endowment	1,257,997	1,253,486
TOTAL PLEDGES RECEIVABLE, NET	\$ 2,578,789	\$ 2,699,634

Because of uncertainties with regard to realizability and valuation, bequest intentions and other conditional promises are only recognized as assets if and when the specified conditions are met. Non-bequest conditional pledges totaled \$118.4 million and \$122.4 million as of June 30, 2024 and 2023, respectively.

7. FIXED ASSETS

Fixed assets are reported at cost or, if a gift, at fair value as of the date of the gift, net of accumulated depreciation. Depreciation is computed using the straight-line method over the estimated useful lives of the assets.

The major categories of fixed assets as of June 30, 2024 and 2023 are summarized as follows (in thousands of dollars):

	2024	2023	Estimated useful life (in years)
Research facilities	\$ 3,564,551	\$ 3,446,121	*
Classroom and office facilities	2,769,248	2,596,184	35
Housing facilities	2,698,887	2,638,555	35
Other facilities	436,551	435,738	35
Service facilities	1,204,127	1,148,704	35
Libraries	558,412	549,503	35
Museums and assembly facilities	1,004,303	1,001,370	35
Athletic facilities	311,268	280,432	35
Land	1,025,195	1,024,986	N/A
Construction in progress	739,397	554,978	N/A
Equipment	1,518,751	1,488,311	**
SUBTOTAL AT COST	15,830,690	15,164,882	
Less: accumulated depreciation	(6,897,594)	(6,568,899)	
FIXED ASSETS, NET	\$ 8,933,096	\$ 8,595,983	

* Estimated useful lives of components range from 10 to 45 years.

** Estimated useful lives of equipment range from 4 to 10 years.

Certain University facilities are subject to restrictions as to use, structural modifications, and ownership transfer. Included in the fixed asset balances are restricted facilities with a net book value of \$275.6 million and \$276.6 million as of June 30, 2024 and 2023, respectively.

The costs of research facilities are separated into the shell, roof, finishes, fixed equipment, and services. These components are separately depreciated.

Equipment includes general and scientific equipment, computers, software, furniture, and vehicles.

The University has asset retirement obligations related to future estimated environmental remediation costs of \$195.9 million and \$186.2 million, which are included in “Deferred revenue and other liabilities” in the *Consolidated Balance Sheets* as of June 30, 2024 and 2023, respectively.

Right-of-use assets from finance leases of \$66.4 million and \$45.5 million are included in “Fixed assets, net” in the *Consolidated Balance Sheets* as of June 30, 2024 and 2023, respectively. Lease liabilities from finance leases of \$100.6 million and \$79.2 million are included in “Deferred revenue and other liabilities” in the *Consolidated Balance Sheets* as of June 30, 2024 and 2023, respectively.

8. ENDOWMENT AND GENERAL OPERATING ACCOUNT NET ASSETS

The University's net assets consisted of the following as of June 30, 2024 and 2023 (in thousands of dollars):

	2024			2023		
	Without donor restrictions	With donor restrictions	Total	Without donor restrictions	With donor restrictions	Total
NATURE OF SPECIFIC NET ASSETS						
Perpetual endowment funds		\$ 10,007,062	\$ 10,007,062		\$ 9,652,906	\$ 9,652,906
Endowment funds and appreciation subject to distribution policy and appropriation		31,895,204	31,895,204		30,201,162	30,201,162
Endowment funds without restriction, board designated and subject to distribution policy	\$ 9,636,717		9,636,717	\$ 9,229,293		9,229,293
Pledge balances		1,257,997	1,257,997		1,253,486	1,253,486
Interests in trusts held by others		438,225	438,225		411,747	411,747
TOTAL ENDOWMENT	9,636,717	43,598,488	53,235,205	9,229,293	41,519,301	50,748,594
Operating	6,946,027		6,946,027	6,640,552		6,640,552
Unexpended contributions and endowment distributions		3,379,241	3,379,241		3,395,978	3,395,978
Student loan funds		100,202	100,202		100,178	100,178
TOTAL GENERAL OPERATING ACCOUNT	6,946,027	3,479,443	10,425,470	6,640,552	3,496,156	10,136,708
Split interest agreements (<i>Note 9</i>)		670,623	670,623		634,217	634,217
TOTAL NET ASSETS	\$ 16,582,744	\$ 47,748,554	\$ 64,331,298	\$ 15,869,845	\$ 45,649,674	\$ 61,519,519

Endowment

The University's endowment consists of approximately 14,600 separate funds established over many years for a wide variety of purposes. Endowment fund balances are classified and reported in accordance with donor specifications and state law. The endowment includes both donor-restricted endowment funds and funds functioning as endowment which are not subject to donor-imposed restrictions, however decisions to spend their principal require the approval of the Corporation and therefore are classified as Board-designated endowment funds. The majority of the endowment is invested in the GIA (see *Note 3*).

The University is also the beneficiary of certain irrevocable trusts held and administered by others. The estimated fair values of trust assets, which include the present values of expected future cash flows from outside trusts and the fair value of the underlying assets of perpetual trusts, are recognized as assets and increases in net assets when the required trust documentation is provided to the University.

The fair values of these trusts are provided by the external trustees and are adjusted annually by the University. These are included as Level 3 investments in the fair value hierarchy table in *Note 3*.

The University's endowment distribution policies are designed to preserve the value of the endowment in real terms (after inflation) and generate a predictable stream of available income. Each fall, the Corporation approves

the endowment distribution for the following fiscal year. Distribution from an underwater endowment fund (a fund below its historic dollar value) could continue in limited and defined circumstances under the University's endowment distribution policy. To the extent that the fair value of a donor restricted endowment fund falls below its historic dollar value it would be reported as a reduction of net assets with donor restrictions.

At June 30, 2024 and 2023, funds in a deficit position were reported in net assets with donor restrictions and are comprised as follows (in thousands):

	2024	2023
Fair value of underwater endowment funds	\$ 13,335	\$ 241,967
Historic dollar value	13,928	246,804
TOTAL DEFICIT OF UNDERWATER ENDOWMENT FUNDS	\$ (593)	\$ (4,837)

The endowment distribution is based in part on presumptive guidance from a formula that is intended to provide budgetary stability by smoothing the impact of annual investment gains and losses. The formula's inputs reflect expectations about long-term returns and inflation rates. For fiscal year 2024, the endowment distribution approved by the Corporation (prior to decapitalizations) was equal to 5.0% of the fair value of the endowment invested in the GIA as of the beginning of the fiscal year. The total endowment distribution made available for operations was \$2.4 billion and \$2.2 billion in fiscal year 2024 and 2023, respectively.

Each year the Corporation also approves certain decapitalizations from the endowment to support strategic, mission-critical activities or objectives that are typically one-time or time-limited and therefore, are excluded from net operating surplus. These decapitalizations totaled \$38.7 million and \$43.4 million in fiscal year 2024 and 2023, respectively. These additional decapitalizations, in combination with the endowment distribution, resulted in an aggregate payout rate of 5.0% and 4.7% in fiscal year 2024 and 2023, respectively.

General operating account

The GOA consists of the general or current funds of the University as well as the assets and liabilities related to student and faculty loans and facilities. The GOA accepts, manages, and pays interest on deposits made by University departments; invests surplus working capital; makes loans; and arranges external financing for major capital projects. It is used to manage, control, and execute all University financial transactions, except for those related to investment activities conducted by HMC.

9. SPLIT INTEREST AGREEMENTS

Under split interest agreements, donors enter into trust or other arrangements with the University in which the University receives benefits that are shared with other beneficiaries and institutions. Split interest agreement (SIA) investment assets are invested primarily in the GIA and publicly-traded securities, a small segment is managed by an external advisor, and all are recorded in the “Investment portfolio, at fair value” in the University’s *Consolidated Balance Sheets*. Additional disclosures are included in Note 3. Associated liabilities are recorded at the present value of estimated future payments due to beneficiaries and

other institutions. These liabilities are calculated using the University’s current taxable unsecured borrowing rate of 5.0% and 4.9% as of June 30, 2024 and 2023, respectively. All split interest agreement net assets and the respective activity are reported within net assets with donor restrictions. Upon termination of a split interest agreement, the net assets are transferred to the GOA or endowment accordingly.

The changes in split interest agreement net assets for fiscal years 2024 and 2023 were as follows (in thousands of dollars):

	2024	2023
Investment return:		
Investment income	\$ 20,273	\$ 19,760
Realized and change in unrealized appreciation/(depreciation), net	115,681	39,925
Total investment return	135,954	59,685
Gifts (Note 14) ¹	5,994	6,279
Payments to annuitants	(68,969)	(74,072)
Transfers to endowment	(23,560)	(50,747)
Transfers between SIA and the GOA	(18,896)	(28,398)
Change in liabilities and other adjustments	5,883	20,930
NET CHANGE DURING THE YEAR	36,406	(66,323)
Total split interest agreement net assets, beginning of year	634,217	700,540
TOTAL SPLIT INTEREST AGREEMENT NET ASSETS, END OF YEAR	\$ 670,623	\$ 634,217

¹ Shown at net present value. The undiscounted value of these gifts was \$13,573 and \$12,342 for the years ended June 30, 2024 and 2023, respectively.

Split interest agreement net assets as of June 30, 2024 and 2023 consisted of the following (in thousands of dollars):

	2024	2023
Split interest agreement investments (Note 3)		
Charitable remainder trusts	\$ 1,043,608	\$ 1,006,615
Charitable lead trusts	102,711	99,011
Charitable gift annuities	264,521	265,662
Pooled income funds	165,100	149,151
Total split interest agreement investments ¹	1,575,940	1,520,439
Liabilities due under split interest agreements:		
Amounts due to beneficiaries	(827,251)	(815,056)
Amounts due to other institutions	(78,066)	(71,166)
Total liabilities due under split interest agreements	(905,317)	(886,222)
TOTAL SPLIT INTEREST AGREEMENT NET ASSETS, END OF YEAR	\$ 670,623	\$ 634,217

¹ For the year ended June 30, 2024, \$876,711 of SIA investments are held in the pooled general investment account and \$699,229 of SIA investments are held in the other investments outside the general investment account. For the year ended June 30, 2023, \$863,185 of SIA investments are held in the pooled general investment account and \$657,254 of SIA investments are held in the other investments outside the general investment account. Refer to Note 3.

10. BONDS AND NOTES PAYABLE

Bonds and notes payable as of June 30, 2024 and 2023 were as follows (in thousands of dollars):

	Fiscal year of issue	Fiscal year of final maturity ¹	Effective rate ²	Outstanding principal	
				2024 ³	2023 ³
TAX-EXEMPT BONDS AND COMMERCIAL PAPER:					
Variable-rate demand bonds and commercial paper:					
Series R – daily	2000-2006	2032	2.4%	\$ 81,850	\$ 98,300
Series Y – daily	2000	2036	2.8%	117,905	117,905
Commercial paper	2023	2024	3.3%		25,000
Total variable-rate bonds and commercial paper			2.6%	199,755	241,205
Fixed-rate bonds:					
Series 2016A	2017	2041	4.1%	1,073,110	1,434,825
Series 2020A	2020	2031	4.4%	346,680	346,680
Series 2022B	2022	2033	4.3%	207,830	207,830
Series 2024B	2024	2036	4.2%	734,995	
Total fixed-rate bonds			4.2%	2,362,615	1,989,335
TOTAL TAX-EXEMPT BONDS AND COMMERCIAL PAPER			4.1%	2,562,370	2,230,540
TAXABLE BONDS AND COMMERCIAL PAPER:					
Variable-rate bonds and commercial paper:					
Commercial paper	2023	2024	5.4%		152,296
Total variable-rate bonds and commercial paper			5.4%	0	152,296
Fixed-rate bonds:					
Series 2008A	2008	2039	5.6%	243,000	243,000
Series 2008D	2009	2039	6.5%	500,000	500,000
Series 2010C	2011	2041	4.9%	300,000	300,000
Series 2013A	2013	2038	3.6%	352,000	402,000
Series 2016B	2017	2057	3.2%	1,000,000	1,000,000
Series 2020B	2020	2051	2.5%	500,000	500,000
Series 2022A	2022	2053	3.8%	500,000	500,000
Series 2024A	2024	2035	4.6%	750,000	
Total fixed-rate bonds			4.2%	4,145,000	3,445,000
TOTAL TAXABLE BONDS AND COMMERCIAL PAPER			4.2%	4,145,000	3,597,296
Notes payable	Various	Various	Various	85,717	84,730
Unamortized original issuance premium/discount, net				365,888	321,570
Unamortized bond issuance costs				(24,895)	(19,402)
TOTAL BONDS AND NOTES PAYABLE			4.1%	\$ 7,134,080	\$ 6,214,734

¹ The weighted average maturity of the portfolio on June 30, 2024 was 15.7 years.

² For fixed-rate bonds the effective rate is calculated as: coupon rate x (par value / book value*). For variable rate bonds and commercial paper the effective rate is the one-year average rate. Effective rates are exclusive of the Series Y interest rate exchange agreement, which would not have impacted the overall portfolio rate of 4.12% in fiscal year 2024.

* Book value = par value + unamortized original issuance premium - unamortized original issuance discount, underwriter's discount, and cost of issuance.

³ Par only—balances exclude original issuance premiums/discounts.

Interest expense related to bonds and notes payable, net of amortization and accretion, was \$225.3 million and \$207.4 million for fiscal 2024 and 2023, respectively. The interest expense in the *Consolidated Statement of Changes in Net Assets with General Operating Account Detail* includes additional components related to finance leases. Excluding unamortized discounts and premiums, unamortized underwriter's discount and unamortized cost of issuance, scheduled principal payments are (in thousands of dollars):

Fiscal year	Principal payments
2025	\$ 41,441
2026	100,967
2027	102,795
2028	104,656
2029	111,213
Thereafter	6,332,016
TOTAL PRINCIPAL PAYMENTS	\$ 6,793,088

In fiscal 2024, the University issued \$750.0 million of taxable fixed-rate Series 2024A Bonds and \$855.0 million (\$735.0 million par) of tax-exempt fixed-rate Series 2024B Bonds. Proceeds from the Series 2024A issue will be used to fund future University capital spending. Proceeds from the Series 2024B issue were used to refund a portion of the University's outstanding tax-exempt debt and will be used to fund or refinance capital spending on campus.

The University refunded \$359.9 million of par bonds with the Series 2024B issue (\$334.9 million of Series 2016A bonds and \$25.0 million of tax-exempt commercial paper). Additionally, in fiscal 2024, the University had \$92.2 million of scheduled long-term principal maturities, \$152.3 million of taxable commercial paper maturities, \$38.7 million of amortizing bond premium (net of amortizing fees and issuance discounts), and another \$35.2 million in write-offs of amortizing bond premium and issuance fees related to the refunded Series 2016A Bonds. The result of the various issuances and pay-downs was an overall increase in the University's bonds and notes payable from \$6.2 billion to \$7.1 billion.

The University is rated Aaa by Moody's Investors Service and AAA by Standard & Poor's Global Ratings. The Moody's rating was re-affirmed in March 2024 and the Standard & Poor's rating was re-affirmed in February 2024.

The University has one unsecured, revolving credit facility with a syndicate of banks totaling \$1.5 billion. In September 2024, the facility was extended until December 2027. There was no outstanding drawn balance on the credit facility at June 30, 2024.

11. EMPLOYEE BENEFITS

The University offers current employees a choice of health plans, a dental plan, short-term and long-term disability plans, life insurance, tuition assistance, and a variety of other benefits such as subsidized passes for public transportation and for Harvard athletic facilities. In addition, the University has retirement plans covering substantially all employees.

The University uses a measurement date of June 30 for its pension and postretirement health plans.

The University has taxable commercial paper available totaling \$2.0 billion. There was no drawn balance on the taxable commercial paper line at June 30, 2024.

The University has tax-exempt commercial paper available totaling \$1.0 billion. There was no drawn balance on the tax-exempt commercial paper line at June 30, 2024.

At June 30, 2024, the University had \$199.8 million of variable rate demand bonds outstanding with daily interest rate resets. In the event that the University receives notice of any optional tender on its variable rate demand bonds, or if the bonds become subject to mandatory tender, the purchase price of the bonds will be paid from the remarketing of such bonds. However, if the remarketing proceeds are insufficient, the University will have a general obligation to purchase the bonds tendered with cash on hand.

Interest rate exchange agreements

In fiscal 2024, the University had in place one interest rate exchange agreement, used to manage the interest cost and risk associated with a portion of its outstanding variable rate debt.

The fair value of the interest rate exchange agreement was (\$1.8) million and (\$3.6) million as of June 30, 2024 and 2023, respectively, and is recorded in "Other liabilities associated with the investment portfolio" on the University's *Consolidated Balance Sheets*.

457(b) deferred compensation plan

The University offers a non-qualified deferred compensation plan under Internal Revenue Code 457(b) to a select group of employees. There is no University contribution related to the plan. The University has recorded both an asset and a liability related to the plan of \$256.5 million as of June 30, 2024 and \$220.1 million as of June 30, 2023; the assets are included in "Prepayments and deferred charges" and the liabilities are included in "Deferred revenue and other liabilities" on the University's *Consolidated Balance Sheets*.

Pension benefits

All eligible faculty members and staff are covered by retirement programs that include a defined benefit component, a defined contribution component, or a combination of the two.

In accordance with the Employee Retirement Income Security Act (ERISA) requirements, the University has established a trust to hold plan assets for its defined benefit pension plans. The fair value of the trust's assets was \$779.3 million and \$793.1 million as of June 30, 2024 and 2023, respectively. During fiscal years 2024 and 2023, the University made cash contributions to the defined benefit pension plan of \$11.1 million and \$12.7 million, respectively. The University recorded expenses for its defined contribution plans of \$190.9 million for fiscal year 2024 and \$175.7 million for fiscal year 2023.

Postretirement health benefits

The University provides postretirement health coverage and life insurance to substantially all of its employees. In fiscal year 2024, the University established a trust to hold plan assets for its postretirement health plan. The fair value of the trust's assets was \$602.5 million as of June 30, 2024 and was funded from internally designated funds held within the GIA. Additionally, as of June 30, 2024, the University had internally designated and invested \$411.1 million in the GIA to fund the postretirement health benefit accrued liability of \$236.5 million. As of June 30, 2023, the University had internally designated and invested \$996.9 billion to fund the postretirement health benefit accrued liability of \$799.0 million.

The following table sets forth the pension and postretirement plans' funded status that is reported in the *Consolidated Balance Sheets* as of June 30, 2024 and 2023 (in thousands of dollars):

	Pension benefits		Postretirement health benefits	
	2024	2023	2024	2023
Change in benefit obligation:				
Benefit obligation, beginning of year	\$ 834,367	\$ 944,511	\$ 798,964	\$ 835,208
Service cost	4,000	6,629	20,072	22,052
Interest cost	45,918	46,401	45,093	41,361
Plan participants' contributions			11,054	10,377
Gross benefits paid	(56,062)	(87,732)	(43,666)	(44,496)
Actuarial (gain)/loss	(8,858)	(75,442)	7,403	(65,592)
Plan amendments			60	54
BENEFIT OBLIGATION, END OF YEAR¹	819,365	834,367	838,980	798,964
Change in plan assets:				
Fair value of plan assets, beginning of year	793,133	851,205		
Employer contribution to establish postretirement health plan trust			580,725	
Actual return on plan assets	31,062	16,939	54,365	
Employer contributions	11,135	12,721		34,119
Plan participants' contributions			11,054	10,377
Gross benefits paid	(56,062)	(87,732)	(43,666)	(44,496)
FAIR VALUE OF PLAN ASSETS, END OF YEAR	779,268	793,133	602,478	0
UNFUNDED STATUS²	\$ (40,097)	\$ (41,234)	\$ (236,502)	\$ (798,964)

¹ Measurement of the University's pension obligation including assumed salary increases (required by GAAP).

² These amounts totaling \$276,599 as of June 30, 2024 and \$840,198 as of June 30, 2023 are included in the "Accrued Retirement Obligations" line in the Consolidated Balance Sheets.

The accumulated pension benefit obligation (ABO) is a measurement of the University's pension benefit obligation, based on past and present compensation levels and does not include assumed salary increases. The ABO was \$753.6 million and \$760.6 million at June 30, 2024 and 2023,

respectively. The funded status disclosed above has been prepared in accordance with pension accounting rules. When measured on an IRS funding basis, which informs the University's required cash contribution amount, the plan was overfunded at January 1, 2024.

Net periodic benefit cost

Components of net periodic benefit cost and other amounts recognized in the *Consolidated Statements of Changes in Net Assets with General Operating Account Detail* are summarized as follows for the years ended June 30, 2024 and 2023 (in thousands of dollars):

	Pension benefits		Postretirement health benefits	
	2024	2023	2024	2023
Components of net periodic benefit cost:				
Operating				
Service cost	\$ 4,000	\$ 6,629	\$ 20,072	\$ 22,052
Total operating activity	4,000	6,629	20,072	22,052
Non-operating				
Interest cost	45,918	46,401	45,093	41,361
Expected return on plan assets	(41,429)	(42,209)		
Amortization of:				
Actuarial gain			(22,446)	(19,055)
Prior service cost/(credit)	33	287	(5,303)	(7,931)
Total non-operating activity ¹	4,522	4,479	17,344	14,375
Total net periodic benefit cost	8,522	11,108	37,416	36,427
Other amounts recognized in non-operating activity in unrestricted net assets:				
Current year net actuarial loss/(gain)	1,509	(50,173)	(46,963)	(65,592)
Plan amendments			60	54
Amortization of:				
Prior service (cost)/credit	(33)	(287)	5,303	7,931
Actuarial gain			22,446	19,055
Total other amounts recognized in non-operating activity ¹	1,476	(50,460)	(19,154)	(38,552)
TOTAL RECOGNIZED IN THE CONSOLIDATED STATEMENTS OF CHANGES IN NET ASSETS WITH GENERAL OPERATING ACCOUNT DETAIL	\$ 9,998	\$ (39,352)	\$ 18,262	\$ (2,125)

¹ These amounts totaling \$4,188 in fiscal year 2024 and (\$70,158) in fiscal year 2023 include gains and losses and other changes in the actuarially determined benefit obligations arising in the current period but that have not yet been reflected within net periodic benefit cost/(income) and are included in the "Change in Retirement Obligations" line in the Consolidated Statements of Changes in Net Assets with General Operating Account Detail.

Cumulative amounts recognized as non-operating changes in net assets without donor restrictions are summarized as follows for the years ended June 30, 2024 and 2023 (in thousands of dollars):

	Pension benefits		Postretirement health benefits	
	2024	2023	2024	2023
Net actuarial loss/(gain)	\$ 13,584	\$ 12,075	\$ (433,545)	\$ (409,029)
Prior service cost/(credit)		33	(20,416)	(25,779)
CUMULATIVE AMOUNTS RECOGNIZED IN UNRESTRICTED NET ASSETS	\$ 13,584	\$ 12,108	\$ (453,961)	\$ (434,808)

Other assumptions and health care cost trend rates used in determining the year end obligation as well as the net periodic benefit cost of the pension and postretirement health plans are summarized as follows for fiscal years 2024 and 2023:

	Pension benefits		Postretirement health benefits	
	2024	2023	2024	2023
Weighted-average assumptions used to determine benefit obligation as of June 30:				
Discount rate	5.80%	5.70%	5.75%	5.60%
Compensation increase trend:				
Initial rate	5.00%	5.00%	5.00%	5.00%
Ultimate rate	3.50%	3.50%	3.50%	3.50%
Year of ultimate	2025	2025	2025	2025
Cash balance (or similar formula) interest crediting rate	5.25%	5.25%	N/A	N/A
Pension increases for in-payment benefits increase trend:	0.13%			
Initial rate	N/A	1.00%	N/A	N/A
Ultimate rate	N/A	0.13%	N/A	N/A
Year of ultimate	N/A	2024	N/A	N/A
Current health care cost trend rate:				
Pre-65	N/A	N/A	7.00%	7.25%
Post-65	N/A	N/A	6.50%	6.75%
EGWP	N/A	N/A	(26.01%)	16.00%
Ultimate health care cost trend rate:				
Pre-65 and Post-65	N/A	N/A	5.00%	5.00%
EGWP	N/A	N/A	5.00%	4.00%
Year of ultimate	N/A	N/A	2031	2029
Weighted-average assumptions used to determine net periodic benefit (income)/cost:				
Discount rate	5.70%	5.05%	5.60%	4.90%
Expected long-term rate of return on plan assets	5.00%	4.75%	N/A	N/A
Compensation increase trend:				
Initial rate	5.00%	5.00%	5.00%	5.00%
Ultimate rate	3.50%	3.50%	3.50%	3.50%
Year of ultimate	2025	2025	2025	2025
Pension increases for in-payment benefits increase trend:				
Initial rate	1.00%	1.50%	N/A	N/A
Ultimate rate	0.13%	0.25%	N/A	N/A
Year of ultimate	2024	2025	N/A	N/A
Health care cost trend rate:				
Initial rate Pre-65	N/A	N/A	7.25%	7.00%
Initial rate Post-65	N/A	N/A	6.75%	7.00%
Ultimate rate	N/A	N/A	5.00%	5.00%
Year of ultimate	N/A	N/A	2029	2029

The expected return on pension plan assets is determined by utilizing an independent advisor's capital markets model, which takes into account the expected real return, before inflation, for each of the pension portfolio's asset classes, as well as the correlation of any one asset class to every other asset class. This model calculates the real returns and correlations and derives an expected real return for the entire portfolio, given the percentage weighting allocated to each asset class. After calculating the expected real return,

an assessment is made to accommodate the expected inflation rate for the forthcoming period. The final expected return on assets is the aggregate of the expected real return plus the expected inflation rate.

Plan assets

The actual asset allocation of the investment portfolio for the pension plan at June 30, 2024 and 2023, along with target allocations for June 30, 2025, is as follows:

	2025 Target	June 30, 2024	June 30, 2023
Asset allocation by category for pension plan:			
Fixed income securities	75-90%	80.9%	80.4%
Equity securities	15-25	18.5	19.5
Cash	0-5	0.6	0.1
TOTAL OF ASSET ALLOCATION CATEGORIES		100.0%	100.0%

The University's investment strategy for the pension portfolio is to manage the assets across a broad and diversified range of investment categories, both domestic and international. The objective is to achieve a risk-adjusted return that is in line with the long-term obligations that the University has to the pension plan beneficiaries. During fiscal year 2024, the University increased its allocation to fixed income securities to manage the interest rate volatility associated with its pension obligations. The

University expects to keep this strategy in future years. The investment program is also managed to comply with all ERISA regulations.

The following is a summary of the levels within the fair value hierarchy for the pension plan assets subject to fair value measurement as of June 30, 2024 and 2023 (in thousands of dollars):

	2024				2023	
	Level 1	Level 2	Level 3	Net asset value	Total	Total
PLAN ASSETS:						
Cash and short-term investments	\$ 17,850				\$ 17,850	\$ 13,408
Domestic equity				\$ 66,814	66,814	64,305
Foreign equity				74,061	74,061	72,215
Domestic fixed income				619,290	619,290	589,061
Emerging market equity and debt					0	14,776
Hedge funds				102	102	137
Private equity				1,123	1,123	1,250
High yield					0	37,974
PLAN ASSETS SUBJECT TO FAIR VALUE LEVELING	\$ 17,850	\$ 0	\$ 0	\$ 761,390	\$ 779,240	\$ 793,126
Other assets not subject to fair value					28	7
TOTAL PLAN ASSETS					\$ 779,268	\$ 793,133

The postretirement health plan trust assets are commingled in the GIA under the guidelines prescribed by the HMC investment valuation policy, which is reviewed and approved by the HMC Board of Directors on an annual basis. Investments of the postretirement health plan are categorized within the fair-value hierarchy as Level 2 investments (see *Note 3*).

Expected future benefit payments

Employer contributions of \$15.4 million are expected for fiscal year 2025 to fund the pension benefit plan.

The following table summarizes expected benefit payments and subsidies for pension and other postretirement health benefits for the University (in thousands of dollars):

Fiscal year	Expected benefit payments	
	Pension	Postretirement health
2025	\$ 66,106	\$ 30,510
2026	66,302	36,259
2027	67,416	38,976
2028	68,355	41,631
2029	69,122	44,362
Thereafter	346,123	262,878

12. STUDENT FINANCIAL AID

Financial aid granted to students in fiscal 2024 and 2023 is summarized as follows (in thousands of dollars):

	2024	2023
Scholarships and other student awards:		
Scholarships applied to student income ¹	\$ 556,716	\$ 530,743
Scholarships and other student awards paid directly to students	192,419	181,295
Total scholarships and other student awards	749,135	712,038
Student employment	104,302	101,699
Student loans	13,632	13,722
Agency financial aid ²	24,726	23,889
TOTAL STUDENT FINANCIAL AID	\$ 891,795	\$ 851,348

¹ Includes \$249,978 and \$235,832 in fiscal 2024 and 2023, respectively, of undergraduate scholarships applied to student income.

² Represents aid from sponsors for which the University acts as an agent for the recipient.

13. SPONSORED SUPPORT

Total expenditures funded by US government sponsors or by institutions that subcontract federally sponsored projects to the University were \$686.5 million and \$676.1 million in fiscal year 2024 and 2023, respectively. The University's principal source of federally sponsored funds is the Department of Health and Human Services. The University also has many non-federal sources of sponsored awards and grants, including corporations, foundations, state and local governments, foreign governments, and research institutes.

Sponsored grants and contracts normally provide for the recovery of direct and indirect costs. Recovery of related indirect costs is generally recorded at fixed or predetermined rates negotiated with the federal government and other sponsors. Predetermined federal indirect cost rates have been established for the University Area and the Medical School (including the School of Dental Medicine) through fiscal year 2028. The T.H. Chan School of Public Health has predetermined indirect cost rates through fiscal year 2024. Funds received for federally sponsored activity are subject to audit.

14. GIFTS

Gifts are classified as net assets with or without restrictions in accordance with donor specifications.

Additionally, gifts are categorized by purpose as "Current use", "Non-federal sponsored grants", "Endowment funds", "Split interest agreements", or "Loan funds and facilities".

Gifts received for the year ended June 30, 2024 are summarized as follows (in thousands of dollars):

	2024	
	Gifts received	Donor redesignations/ other changes
Current use	\$ 530,001	\$ (2,322)
Non-federal sponsored grants	224,129	(6,054)
Endowment funds	366,556	1,567
Split interest agreements ¹	5,994	
Loan funds and facilities	54,140	169
TOTAL GIFTS	\$ 1,180,820	\$ (6,640)

¹ Shown at net present value. The undiscounted value of these gifts was \$13,573 for the year ended June 30, 2024.

Gifts received for the year ended June 30, 2023 are summarized as follows (in thousands of dollars):

	2023	
	Gifts received	Donor redesignations/ other changes
Current use	\$ 482,107	\$ 3,775
Non-federal sponsored grants	232,226	(2,782)
Endowment funds	566,660	(6,053)
Split interest agreements ¹	6,279	
Loan funds and facilities	96,210	(35)
TOTAL GIFTS	\$ 1,383,482	\$ (5,095)

¹ Shown at net present value. The undiscounted value of these gifts was \$12,342 for the year ended June 30, 2023.

15. OTHER REVENUE

The major components of other revenue for the years ended June 30, 2024 and 2023 were as follows (in thousands of dollars):

	2024	2023
Publications and royalties from copyrights	\$ 280,534	\$ 281,024
Rental and parking ¹	160,345	141,449
Services income	139,404	136,811
Royalties from the commercialization of intellectual property ²	106,996	58,989
Health and clinic fees	73,414	72,580
Sales income	34,827	32,376
Interest income	21,784	15,317
Other student income	4,447	5,025
Other	61,261	49,345
TOTAL OTHER REVENUE	\$ 883,012	\$ 792,916

¹ The University is the lessor of space and facilities under operating leases, the income from which is included in rental and parking.

² Distributions to external parties is recorded as expense in "Services purchased."

16. OTHER EXPENSES

The major components of other expenses for the years ended June 30, 2024 and 2023 were as follows (in thousands of dollars):

	2024	2023
Subcontract expenses under sponsored projects	\$ 184,344	\$ 179,941
Travel	104,896	93,449
Advertising	65,670	65,353
Publishing	50,703	50,202
Taxes and fees	44,039	42,196
Insurance	24,051	23,207
Postage	14,398	14,911
Fixed asset impairments	11,769	7,394
Telephone	9,135	10,971
Other	86,620	90,756
TOTAL OTHER EXPENSES	\$ 595,625	\$ 578,380

17. FUNCTIONAL AND NATURAL CLASSIFICATION OF OPERATING EXPENSES

Operating expenses are allocated functionally on a direct basis. Operations and maintenance expenses are allocated based on square footage.

Operating expenses by functional classification for the year ended June 30, 2024 were as follows (in thousands of dollars):

	2024				
	Instruction and academic support	Research ¹	Student services and support	Institutional support and auxiliary	Total
Salaries and wages	\$ 1,367,721	\$ 348,837	\$ 179,195	\$ 735,889	\$ 2,631,642
Employee benefits	342,262	82,016	61,915	204,445	690,638
Services purchased	448,121	107,728	80,122	285,104	921,075
Depreciation	47,043	155,104	16,884	221,226	440,257
Space and occupancy	138,512	75,965	38,130	186,543	439,150
Supplies and equipment	87,848	59,237	46,236	96,379	289,700
Interest	21,238	52,593	15,115	137,459	226,405
Scholarships and other student awards			192,419		192,419
Other expense and overhead allocations	51,157	451,784	35,637	57,047	595,625
TOTAL EXPENSES	\$ 2,503,902	\$ 1,333,264	\$ 665,653	\$ 1,924,092	\$ 6,426,911

¹ The methodology used to allocate expenses for financial statement purposes is different than methodologies used for other purposes, such as governmental surveys.

Operating expenses by functional classification for the year ended June 30, 2023 were as follows (in thousands of dollars):

	2023				
	Instruction and academic support	Research ¹	Student services and support	Institutional support and auxiliary	Total
Salaries and wages	\$ 1,261,358	\$ 330,493	\$ 164,182	\$ 665,043	\$ 2,421,076
Employee benefits	307,980	77,943	54,257	188,124	628,304
Services purchased	407,481	126,438	69,973	188,049	791,941
Depreciation	47,043	155,078	16,595	206,093	424,809
Space and occupancy	128,490	68,282	33,859	163,448	394,079
Supplies and equipment	85,546	60,946	44,306	92,525	283,323
Interest	21,307	48,498	14,397	124,388	208,590
Scholarships and other student awards			181,295		181,295
Other expense and overhead allocations	37,026	442,002	35,189	64,163	578,380
TOTAL EXPENSES	\$ 2,296,231	\$ 1,309,680	\$ 614,053	\$ 1,691,833	\$ 5,911,797

¹ The methodology used to allocate expenses for financial statement purposes is different than methodologies used for other purposes, such as governmental surveys.

18. COMMITMENTS AND CONTINGENCIES

Lease commitments

The University is the lessee of equipment and space under operating (rental) and finance leases. The University determines whether a contract is a lease at inception. Identified leases are subsequently measured, classified, and recognized at lease commencement. The University categorizes leases with contractual terms longer than twelve months as either operating or finance. The University's leases generally have terms that range from one to five years for equipment and one to twenty years for property, with certain leases inclusive of renewal options if they are considered to be reasonably assured at lease commencement. Right of use assets and lease liabilities for operating leases are included in "Operating leases — right of use assets" and "Operating lease liabilities", respectively, in the *Consolidated Balance Sheets*. Finance lease right of use assets and lease liabilities are included in "Fixed assets, net" and "Deferred revenue and other liabilities", respectively, in the *Consolidated Balance Sheets*. Lease assets represent our right to use an underlying asset for the lease term and lease liabilities represent our obligation to make lease payments arising from the lease.

Operating and finance lease right of use assets and associated lease liabilities are recognized based on the present value of future minimum lease payments to be made over the expected lease term, using the collateralized incremental borrowing rate at the commencement date in determining the present value of future payments. Rent expense related to operating leases, including short-term leases and variable lease payments, was \$114.6 million and \$114.0 million in fiscal year 2024 and 2023, respectively.

Maturity analysis of the annual undiscounted cash flows reconciled to the carrying value of the operating and finance lease liabilities (in thousands of dollars):

	Operating	Finance
2025	\$ 82,688	\$ 15,955
2026	79,957	26,303
2027	74,871	16,499
2028	71,492	14,894
2029	69,218	13,999
Thereafter	531,793	125,073
TOTAL LEASE PAYMENTS	910,019	212,723
Less: Imputed interest	(188,146)	(112,089)
PRESENT VALUE OF LEASE LIABILITIES	\$ 721,873	\$ 100,634

Weighted-average remaining lease term and discount rate for operating and finance leases were as follows:

	June 30, 2024
Weighted average remaining lease term	
Operating leases	14.7 YEARS
Finance leases	14.5 YEARS
Weighted average discount rate	
Operating leases	3.1%
Finance leases	4.6%

The University leases properties to customers under agreements that are classified as operating or sales-type leases. Property leased to others in operating lease arrangements are included in "Fixed assets, net" in the *Consolidated Balance Sheets*. Revenue is recognized to the extent that amounts are determined to be collectible.

Fixed asset-related commitments

The University has various commitments for capital projects involving construction and renovation of certain facilities, real estate acquisitions, and equipment purchases, for which the outstanding commitments as of June 30, 2024 totaled approximately \$1.0 billion.

Environmental remediation

The University is subject to laws and regulations concerning environmental remediation and has established reserves for potential obligations that management considers to be probable and for which reasonable estimates can be made. These estimates may change substantially depending on new information regarding the nature and extent of contamination, appropriate remediation technologies, and regulatory approvals. Costs of future environmental remediation have been discounted to their net present value. Management is not aware of any existing conditions that it believes are likely to have a material adverse effect on the University's financial position, changes in net assets, or cash flows.

General

The University is a defendant in various legal actions arising from the normal course of its operations. While it is not possible to predict accurately or determine the eventual outcome of such actions, management believes that the outcome of these proceedings will not have a material adverse effect on the University's financial position, changes in net assets, or cash flows.

The University has evaluated subsequent events through October 16, 2024, the date the financial statements were issued. The University has concluded that no material events have occurred that are not accounted for in the accompanying financial statements or disclosed in the accompanying notes.

Schedule of Expenditures of Federal Awards

Harvard University
Schedule of Expenditures of Federal Awards
Year Ended June 30, 2024

Federal Grantor/Pass-through Grantor/Program or Cluster Title	Assistance Listing Number	Award Number	Pass-through Entity Identification Number	Federal Expenditures	Passed to Sub-Recipients
Research and Development Cluster					
Direct Award					
Agency for International Development					
Building Local State Capacity: Evidence from Technology Investments in Ghana	98.001	7200AA22FA00039		\$ 163,057	\$ -
Kartu Prakerja: Evaluating Indonesia's Jobs Training and Cash Transfer Program	98.001	7200AA21FA00005		444,380	112,817
Raskin Welfare Reform: Transition to Electronic Distribution	98.001	7200AA19FA00002		(1,300)	(590)
Total for Assistance Listing Number 98.001				606,137	112,227
Total for Agency for International Development Direct Award Research and Development Cluster				606,137	112,227
Department of Agriculture					
Adaptive forest management options for white ash influenced by the invasive emerald ash borer	10.310	2021-68008-34102		70,966	60,483
Toward a comprehensive understanding of the economic and ecological impacts of land protection	10.310	2021-67023-34491		48,479	12,749
Total for Assistance Listing Number 10.310				119,445	73,232
Arboretum Families	10.699	23-CS-11242308-068		9,669	-
Total for Assistance Listing Number 10.699				9,669	-
Explore the Range of Climatic Sensitivity of Tree Species in the Northeastern US Under Climate Change	10.707	22-JV-11242306-078		27,142	-
The Next Phase of the Undergraduate Forestry Data Sciences Program	10.707	22-JV-11221638-199		62,675	-
Total for Assistance Listing Number 10.707				89,817	-
Supporting Mature and Old Growth Forest Mapping with the Global Ecosystem Dynamics Investigation	10.729	23-PA-11132400-357		125,353	-
Total for Assistance Listing Number 10.729				125,353	-
Total for Department of Agriculture Direct Award Research and Development Cluster				344,284	73,232
Department of Commerce					
CO2-Air Quality Urban Synthesis and Analysis - CO2-AQ USA- Project Trends and Drivers of Urban Emissions from Past, Present, to Future	11.431	NA20OAR4310303		10,873	-
Long-term trends of tropospheric ozone constrained by global observation networks and GEOS-Chem	11.431	NA19OAR4310176		(7)	-
Monitoring smoke hazards across the western United States: Tools for fire scientists, policymakers, and	11.431	NA22OAR4310140		117,839	-
Understanding methane changes in cities affected by COVID-19 shutdowns	11.431	NA21OAR4310237		4,439	-
Total for Assistance Listing Number 11.431				133,144	-
Total for Department of Commerce Direct Award Research and Development Cluster				133,144	-
Department of Defense					
Data Science-Driven Data Science Education	12.006	HQ00342110012		1,136,048	172,129
Educating for American Democracy - A National Program for Civic Educator Professional Development	12.006	HQ00342310012		550,699	-
Total for Assistance Listing Number 12.006				1,686,747	172,129
Unseen Legacies of the Vietnam War: Finding, Archiving and Sharing the Missing Data and Historical Ephemera of Vietnamese War Dead	12.015	HQ00342120011		1,731,043	-
Total for Assistance Listing Number 12.015				1,731,043	-
Advancing Novel Rebreather Chemistry for Technology Transitioning	12.300	N00014-22-1-2758		7,482	-
An end-to-end architecture for efficient choice: From perception to goals	12.300	N00014-22-1-2205		363,267	-
Aqueous Porous Liquids for Undersea Medicine	12.300	N00014-22-1-2739		157,339	-
Brain inspired neural computation of structured knowledge	12.300	N00014-23-1-2051		560,804	72,515
Carbon Dioxide Reduction Catalysis to Eliminate the Need for Rebreathers in Diving Operations	12.300	N00014-22-1-2470		364,201	-
Decision Making in Heterogenous Multi-Agent Systems with Misinformation and Sparse Communication	12.300	N00014-21-1-2714		150,832	-
Designing Aqueous Porous Liquids for in vivo Gas Absorption	12.300	N00014-23-1-2550		237,445	36,804
Embedded Deep Learning and Advanced Computation	12.300	FA8750-18-1-0112		(3,810)	-

The accompanying notes are an integral part of this schedule.

Harvard University
Schedule of Expenditures of Federal Awards
Year Ended June 30, 2024

Federal Grantor/Pass-through Grantor/Program or Cluster Title	Assistance Listing Number	Award Number	Pass-through Entity Identification Number	Federal Expenditures	Passed to Sub-Recipients
Estimating the treatment effect in high-dimensions under interference	12.300	N00014-23-1-2489		60,802	-
Ethical Decision Making Through Social Choice and Machine Learning	12.300	N00014-20-1-2488		156,060	-
Exploration of Kac's walk and analysis of bayesian distributed computing	12.300	N000142112664		101,091	-
Fish Skin as a Multifunctional Hydrodynamic Material	12.300	N00014-23-1-2684		100,000	-
Many-Body Quantum Dynamics with Microscope Control- A New Research Frontier	12.300	N00014-18-1-2863		58,184	-
Materials Design for Thermal Radiation Blocking Thermal Barrier Coatings	12.300	N00014-21-1-2478		201,406	-
Memory, Attention, and Interaction: Learning Language Models with a Long Memory	12.300	N00014-22-1-2377		157,920	-
Next-Generation Materials for Oxygen Generation, Transport, and Storage in the Undersea Environment	12.300	N00014-20-1-2418		1,558,934	648,128
Non-Abelian Anyon Braiding in Corbino Topological Josephson Junctions	12.300	N00014-24-1-2081		72,322	-
Programmable Assembly of Functional Human Tissues	12.300	N00014-21-1-2958		933,712	-
Quantum Engineered van der Waals Heterostructures for Topological Electronic Structures toward Novel	12.300	N00014-18-1-2877		95,058	-
Spectroscopy Enhanced Analytical (SEA) Instrumentation Suite for Studies of Oxygen and Carbon Dioxide Management in the Undersea Environment	12.300	N000142412248		76,085	-
Synthetic Bioelectrical Materials for Sensing, Pattern Formation, and Computation	12.300	N00014-18-1-2859		281,188	-
Towards Distributed and Online Partially Observable Stochastic Camouflage Games	12.300	N00014-23-1-2802		272,119	93,150
Towards Living Materials with Synthetic Building Blocks	12.300	N000141713029		112,822	-
Total for Assistance Listing Number 12.300				6,075,263	850,597
Fundamental Studies of Stored Energy for Photochemical Destruction of CWA Simulants	12.351	HDTRA12110016		447,790	221,075
Total for Assistance Listing Number 12.351				447,790	221,075
Safe treatment for TBI-induced neurodegeneration and cognitive decline	12.420	HT94252410177		60,066	-
A prospective study of serum levels of polyunsaturated fatty acids and effects on multiple sclerosis	12.420	W81XWH1910155		198,236	-
An Injectable Synthetic Agent to Stop Internal Bleeding	12.420	W81XWH2210113		190,031	-
Biomarkers of sleep loss	12.420	HT94252310447		480,373	-
Defining Novel Cellular Circuitry and Communication in Fibrous Dysplasia	12.420	HT94252310349		174,824	-
Elucidating the biological mechanisms underlying the association between Epstein-Barr virus and	12.420	HT94252310871		267,345	6,486
Genes, environment, and Prodromal features of Parkinson disease	12.420	W81XWH-20-1-0303		230,228	32,465
GUT SYMBIONT LIPID A FAMILY: STRUCTURES AND IMMUNOMODULATION IN IBD	12.420	HT94252310226		1,165,900	155,839
Improving the durability of immunological memory during anti-PD-1 immunotherapy	12.420	W81XWH2211046		388,927	-
Inflammatory and Immune Mechanisms Relating PTSD and Depression to Ovarian Cancer Risk.	12.420	W81XWH2110326		156,898	51,565
Metabolomic Predictors of MS Outcomes	12.420	W81XWH1810341		117,217	110,955
Novel brain shuttle-mediated anti-TDP-43 therapeutics for amyotrophic lateral sclerosis	12.420	HT94252410286		22,014	-
Optimizing Individualized Colorectal Cancer Treatment and Prognostic Prediction via Causal Machine	12.420	HT94252310523		257,731	61,858
Pancreatic Cancer Risk Predicted from Electronic Health Records in US Veterans using Artificial	12.420	HT94252310463		281,804	-
Personalized computational modeling to support effective use of back support exosuits to prevent back	12.420	W81XWH2010609		556,604	-
Piezo1-mediated mechanotransduction as key regulator of bone health in adult mice.	12.420	W81XWH2110449		508,517	196,146
Revealing and Targeting Lipidomic Vulnerabilities to Treat Metastatic Melanoma	12.420	HT94252310765		376,712	-
Targeted therapeutic opportunities for ovarian clear cell, small cell, and endometrioid carcinomas	12.420	HT94252310263		220,925	-
Theranostic Cellular Backpacks for Precision Imaging and Treatment of Traumatic Brain Injury Sites	12.420	W81XWH1920011		1,268	-
Understanding the role of gene-environment interactions in the degeneration of human dopaminergic	12.420	W81XWH1910696		(947)	-
Total for Assistance Listing Number 12.420				5,654,673	615,313
Continuation Study: A Systems Approach to Understanding Post-Traumatic Stress Disorder	12.431	W911NF-17-2-0086		329,973	315,028
Control of Many-Body States Using Strong Coherent Light-Matter Coupling in Terahertz Cavities	12.431	W911NF2110184		130,234	-
CRISPR-based Diagnostics for Food and Waterborne Pathogen Detection	12.431	W911QY2110006		(318)	-

The accompanying notes are an integral part of this schedule.

Harvard University
Schedule of Expenditures of Federal Awards
Year Ended June 30, 2024

Federal Grantor/Pass-through Grantor/Program or Cluster Title	Assistance Listing Number	Award Number	Pass-through Entity Identification Number	Federal Expenditures	Passed to Sub-Recipients
Emergent Order and Quantum Information Flow in Non-equilibrium Systems	12.431	W911NF2410079		214,657	-
Entangled Neutral Atoms for Logical Quantum Teleportation (ENACT)	12.431	W911NF2320219		2,821,597	1,332,138
Hydrodynamic Electron Transport in 2-Dimensional Materials for Nanoelectronics	12.431	W911NF-17-1-0574		3,097	3,097
ii.3.AMP: Hybrid quantum-classical algorithm for analyzing many-body systems: from NMR inference to validating microscopic theories on quantum simulators	12.431	W911NF2010163		66,567	-
Multi-Functional devices in precisely engineered van der Waals homojunctions	12.431	W911NF2120147		1,136,338	326,021
Next Generation NV Center Based Quantum Sensing	12.431	W911NF-22-1-0248		533,857	-
Programming multistable origami and kirigami structures via topological design	12.431	W911NF2210219		1,180,408	391,327
Quantum Optimization with Programmable Simulators based on Atom Arrays	12.431	W911NF2010021		1,903,363	1,754,900
Quon Pictorial Language, Analysis, Quantum Information	12.431	W911NF1910302		162,027	-
Toward Mathematical Intelligence and Certifiable Automated Reasoning: Theoretical Understanding and	12.431	W911NF2010082		1,646,243	460,823
Understanding and Engineering Transient Mechanical Responses in Nanoparticle-Reinforced	12.431	W911NF2120146		899,276	722,855
Widely-tunable, compact sub-millimeter source operating at room-temperature from 100 GHz to 1 THz	12.431	W911NF1920168		353,335	-
Total for Assistance Listing Number 12.431				11,380,654	5,306,189
Analyzing multi-layer networks via graphex models	12.800	FA9950-23-1-0429		63,226	-
Cascaded Mode Converter Integrated Optics	12.800	FA9550-23-1-0699		81,841	-
Cellular foundations of memory	12.800	FA9550-22-1-0345		198,552	-
Cooperative Radiation Phenomena for Quantum Information Processing and Metrology	12.800	FA9550-19-1-0233		(6,868)	-
Correlated Topological States in Moiré Superlattices of Intrinsic Magnetic Topological Insulator	12.800	FA9550-23-1-0040		152,194	-
DIAL Accelerators for Deep Neural Networks: Distributed and networked, In-embedded-hardware, Adversarial generative, Low-precision arithmetic Learning and Inference	12.800	FA8750-22-1-0500		352,185	-
DURIP: Equipment for a molecular quantum simulator	12.800	FA9550-22-1-0067		3,877	-
DURIP: Equipment for Probing Ultracold Reaction Intermediates	12.800	FA9550-23-1-0122		237,746	-
DURIP: Research Infrastructure for Novel Electron Qubits	12.800	FA9550-23-1-0526		471,124	-
Entangling Ultracold Atoms	12.800	FA9550-19-1-0089		(5,910)	-
Frontiers in Rydberg Physics: From Few-body Interactions to Many-body Quantum Simulations	12.800	FA9550-23-1-0374		2,680	-
Interacting and Entangling Polar Molecules with Single-Site Control in 1D and 2D Arrays	12.800	FA9550-23-1-0538		352,377	-
Laser Cooling and Trapping of Asymmetric Top Molecules for Quantum Science	12.800	FA9550-22-1-0288		159,619	31,488
Modulating Cellular Performance with Nanoscale Biocircuits	12.800	FA9550-19-1-0246		353,146	-
Network Architectures for Combating Noise and Malicious Activity	12.800	FA9550-22-1-0223		170,087	-
New Approaches to Quantum Control with Individual Molecule Sensitivity	12.800	FA9550-20-1-0323		1,488,972	1,369,842
Optical singularity engineering for precision sensing	12.800	FA9550-22-1-0243		88,151	-
Optically-controlled, genetically-targeted chemical assembly of electrically functional materials for	12.800	FA9550-22-1-0228		95,721	-
Quantum Information Science with Ultracold Laser-cooled Molecules	12.800	FA9550-24-1-0060		289,372	-
The Neural Architecture of Reinforcement Learning in Partially Observable Environments	12.800	FA9550-20-1-0413		155,524	21,010
Towards a New Quantum Platform Based on Ultracold Molecules	12.800	FA2386-21-1-4089		119,501	-
Tunneling Phenomena in Interface Superconductors	12.800	FA9550-21-1-0429		1,494,900	929,360
Variable Temperature Optical Scan-probe Platform for Research on Emergent Quantum Condensed	12.800	FA9550-23-1-0390		1,100,000	-
Waveguide-coupled Interlayer Exciton Condensation LED in 2D Heterostructures for Quantum Optics	12.800	FA2386-21-1-4086		84,216	-
Wigner Crystals in Atomically Thin Heterostructures	12.800	FA9550-21-1-0216		(3,604)	-
Total for Assistance Listing Number 12.800				7,498,629	2,351,700
Analog Quantum Machine Learning on Programmable Quantum Simulators	12.910	HR0011-23-3-0023		187,509	-
Automated End-To-End Design And Digital Fabrication Of Multi-Task Soft Robots Via Deep	12.910	HR00112110007		82,850	-

The accompanying notes are an integral part of this schedule.

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Collaborative scientific discovery with semantically linked machine-built models	12.910	W911NF2010255		19,834	-
Creation of a genetically manipulable and fast-growing hydrogen of 1C-utilizing autotroph	12.910	N660012324014		559,851	-
Hardware-Efficient Quantum Simulation of Strongly Correlated Molecules and Materials with Rydberg	12.910	HR0011-23-3-0030		211,682	-
Identifying pathogenic bacteria by phenotyping	12.910	W911NF-19-2-0018		371,759	-
Integrated programmable femtosecond pulse synthesizer	12.910	D23AP00251-01		265,056	-
Lectin-targeted macrophage-activating antimicrobial therapeutics	12.910	N660012424020		107,166	-
Metabolic Modulator Anesthetics	12.910	W911NF2420112		93,076	-
MIRA: Modeling with an Intelligent Reasoning Assistant	12.910	HR00112220036		72,742	-
STOP PAIN: Safe Therapeutic Options for Pain and Inflammation	12.910	HR0011-19-2-0022		4,942,415	1,669,588
Time-Tolerant Biostasis Therapeutics	12.910	W911NF1920027		1,490,172	302,918
Total for Assistance Listing Number 12.910				8,404,112	1,972,507
Artificial Intelligence/ Machine Learning (AI/ML) Design PTSD Objective Indicators	12.RD	W81XWH22C0128		351,839	351,839
Biologically Inspired Soft Smart Exosuit for Injury Prevention and Performance Augmentation	12.RD	W911NF-14-C-0051		545	-
General and Flag Officer Homeland Security Executive Seminar	12.RD	W912SV20D0001		742,865	-
Preparation of Topological Quantum States by Measurement and Feedforward for Computation and Transmitters, Receivers, Amplifiers for Microwave Photonics On Lithium Niobate (TRAMPOLiN)	12.RD	HR0011-24-9-0361		152,100	-
	12.RD	HR001120C0137		1,140,768	1,053,527
Total for Assistance Listing Number 12.RD				2,388,117	1,405,366
Total for Department of Defense Direct Award Research and Development Cluster				45,267,028	12,894,875
Department of Education					
Fulbright-Hays Doctoral Dissertation Research Abroad	84.022	P022A200047		(194,413)	-
Fulbright-Hays Doctoral Dissertation Research Abroad	84.022	P022A210025		181,280	-
Fulbright-Hays Doctoral Dissertation Research Abroad	84.022	P022A220033		21,596	-
Fulbright-Hays Doctoral Dissertation Research Abroad Program	84.022	P0022A230040-23A		141,011	-
Total for Assistance Listing Number 84.022				149,474	-
Core Academic Language Skills Instrument: Refining the assessment to measure and monitor English	84.305	R305A190034 - 22		142,607	58,546
Developing and Testing Training Modes for Improving Teachers' Race-Related Competencies to Promote Student Learners' Academic Adjustment	84.305	R305A200278 - 23		183,514	7,600
National Center on Rural Education Research Networks	84.305	R305C190004 - 24		1,877,067	146,220
Partnering in Education Research (PIER) An Interdisciplinary Pre-doctoral Training Program	84.305	R305B200012 - 24		691,343	-
Practical tools for large-scale evaluation of text data in randomized trials in education	84.305	R305D220032 - 24		359,143	147,192
Total for Assistance Listing Number 84.305				3,253,674	359,558
COVID-19: Leveraging Technology and Engaging Students: Evaluating Covid-19 Recovery Efforts in the Los Angeles Community College District	84.305X	R305X220018 - 23		463,879	-
Leveraging Technology and Engaging Students: Evaluating Covid-19 Recovery Efforts in the Los	84.305X	R305X220018 - 23		205,385	188,135
Total for Assistance Listing Number 84.305X				669,264	188,135
Kernels of Practice for Social Emotional Learning in Afterschool Settings	84.411	S411C220046		797,112	-
Total for Assistance Listing Number 84.411				797,112	-
Scaling a National Model of Reading Engagement (MORE) to Improve First to Fourth-Grade Students'	84.411B	S411B230043		972,887	-
Total for Assistance Listing Number 84.411B				972,887	-
Total for Department of Education Direct Award Research and Development Cluster				5,842,411	547,693
Department of Energy					
An Ultracold Playground for Controlled Atom-Molecule Chemistry	81.049	DE-SC0024087		130,877	-
ANALYSES OF CUMULUS MIXING USING ASR AIRCRAFT OBSERVATIONS AND LES SIMULATIONS	81.049	DE-SC0022887		214,724	-

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Converting Metal–Organic Liquids into Microporous Glasses via Non-Equilibrium Syntheses	81.049	DE-SC0021145		140,964	-
Cross-scale methane dynamics at terrestrial-aquatic interfaces in temperate forests	81.049	DE-SC0024092		236,053	-
Data Structure Alchemy	81.049	DE-SC0020200		109,334	-
Design and Assembly of Atomically-Precise Quantum Materials and Devices	81.049	DE-SC0020128		103,032	62,479
Discovering Dark Matter Clumps and Primordial Particles with Galaxies	81.049	DE-SC0020223		82,757	-
Emergent Quasiparticles in Graphene Heterostructure	81.049	DE-SC0012260		535,625	-
Epitaxial Stabilization of Novel Superconductors for Energy Generation, Storage and Distribution	81.049	DE-SC0021925		164,466	-
INTEGRATED MESOSCALE ARCHITECTURES FOR SUSTAINABLE CATALYSIS (IMASC)	81.049	DE-SC0012573		140,786	133,081
Machine learning for accelerated understanding of dynamic catalysis	81.049	DE-SC0022199		1,049,072	447,361
Microbial Ecology, Proteogenomics and Computational Optima	81.049	DE-FG02-02ER63445		4,248,428	-
Mixed-Metal Oxide Energy Conversion Catalysts for Integration with Photoabsorbers	81.049	DE-SC0017619		397,210	-
Opto-chemo-mechanical energy transduction in biomimetic ensembles of reconfigurable microparticles	81.049	DE-SC0005247		451,953	68,374
Particle Physics and Cosmology Research	81.049	DE-SC0007881		1,227,730	-
Programmable quantum simulators for lattice gauge theories and gauge-gravity correspondence	81.049	DE-SC0021013		266	-
Quantum Field Theory and Theoretical Particle Physics	81.049	DE-SC0013607		375,426	-
Quantum Simulation of Correlated Quantum Matter	81.049	DE-SC0019030		92,054	-
Research in High Energy Physics	81.049	DE-SC0007881		(112)	-
State-to-State Molecular Reactions in the Ultracold Regime	81.049	DE-SC0019020		7,322	-
Theoretical Research in High Energy Physics	81.049	DE-SC0007870		438,788	-
Ultrafast control of spin fluctuations in light-driven quantum materials	81.049	DE-SC0022883		166,255	-
Understanding Flow Cell Porous Electrodes as Active Materials for Electrochemical Transformations	81.049	DE-SC0020170		561,448	110,285
Total for Assistance Listing Number 81.049				10,874,458	821,580
Experimental Demonstration of Alkalinity Concentration Swing for Direct Air Capture of Carbon Dioxide	81.089	DE-FE0031964		(4,765)	-
Total for Assistance Listing Number 81.089				(4,765)	-
From Z to Planets: Phase IV	81.112	DE-NA0004084		252,744	84,449
Metallic Hydrogen: Reflectance, Metastability, and Superconductivity	81.112	DE-NA0004087		168,900	-
The Properties of Metallic Hydrogen	81.112	DE-NA0003917		3	-
Total for Assistance Listing Number 81.112				421,647	84,449
Developing advanced NMR techniques to predict and monitor CO2 storage and mineralization for enhanced mining exploration and operation	81.135	DE-AR0001705		625,163	-
GaN NMR Spectrometer Integrated Circuits Towards Broadly Distributed On-line Monitoring and Management of Subsurface Oil/Gas Reservoirs and Downstream	81.135	DE-AR0001063		782,191	-
Total for Assistance Listing Number 81.135				1,407,354	-
Flow Battery Chemistry and Engineering	81.RD	2534218		13,627	-
IC Postdoctoral Fellowship (A. Young): Practical quantum advantage in simulations of the Fermi-Hubbard	81.RD	No Award Number		2,126	-
WBS 3.5 Trigger Processor Maintenance and Operation	81.RD	412331		125,146	-
Total for Assistance Listing Number 81.RD				140,899	-
Total for Department of Energy Direct Award Research and Development Cluster				12,839,593	906,030
Department of Homeland Security					
Meta Leadership Training for US Coast Guard	97.RD	70Z02323PDCOX002		18,419	-
Total for Assistance Listing Number 97.RD				18,419	-
Total for Department of Homeland Security Direct Award Research and Development Cluster				18,419	-
Department of Housing & Urban Development					

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Enhancing equity in smoke-free housing: Evidence-based strategies to support implementation in Permanent Supportive Housing communities	14.906	MAHHU0069-22		260,013	-
Targeted Interventions to Reduce Environmental Exposures	14.906	MAHHU0068-21		310,479	50,835
Total for Assistance Listing Number 14.906				570,492	50,835
Total for Department of Housing & Urban Development Direct Award Research and Development				570,492	50,835
Department of Justice					
Augmenting, Analyzing, and Archiving Criminal Trajectories in Four Birth Cohorts from the Project on Human Development in Chicago Neighborhoods, 1995-2023	16.560	2020-JX-FX-0002		101,211	-
Evaluability Assessment and Development of Psychological and Behavioral Health Approaches to Prevent Terrorism and Facilitate Reintegration of Violent Extremists	16.560	15PNIJ-21-GG-02727-DOMR		473,311	-
The Final Stage Reentry Project: An RCT of Expungement and Its Effect on Recidivism, Housing, and	16.560	2019-RY-BX-0001		120,744	-
Total for Assistance Listing Number 16.560				695,266	-
Total for Department of Justice Direct Award Research and Development Cluster				695,266	-
Department of Veterans Affairs					
Assessing Quality of VA and Community Cancer Care in the MISSION Era	64.RD	36C24E23C0010		149,795	-
MAVERIC Project	64.RD	36C24E18D0048		856,843	29,315
		36C24E20N0129			
Total for Assistance Listing Number 64.RD				1,006,638	29,315
Total for Department of Veterans Affairs Direct Award Research and Development Cluster				1,006,638	29,315
Department of Health and Human Services					
Postdoctoral Training in General, Pediatric and Public Health Dentistry and Dental Hygiene	93.059	5 D88HP37552 05 00		555,214	139,961
Predocloral Oral Health Education and Training for an Aging America	93.059	5 D85HP45705 03 00		181,255	-
Total for Assistance Listing Number 93.059				736,469	139,961
Pre-disease biomarkers of persistent organic pollutants, immune system, and amyotrophic lateral	93.061	6R01TS000315-03-04		285,126	14,397
Serological profiling of the human virome and ALS risk in a military population	93.061	5R01TS000318-03-01		62,158	31,986
Total for Assistance Listing Number 93.061				347,284	46,383
Generating Reproducible Real-World Evidence with Multi-Source Data to Capture Unstructured Clinical	93.103	1U01FD007929-01		443,711	193,199
Total for Assistance Listing Number 93.103				443,711	193,199
Training Grant in Maternal and Child Health	93.110	5T76MC00001 69 00		349,362	-
Total for Assistance Listing Number 93.110				349,362	-
A national study on the effects of air pollution and temperature on children's neurodevelopmental outcomes	93.113	5R01ES034038-02REVISED		311,942	114,707
A nationwide population-based study investigating the cardiovascular effects of exposure to particulate matter α-, β-, and γ-activities and individual radionuclides	93.113	1R01ES035390-01A1		121,080	-
Air Particulate, Metals, and Cognitive Performance in an Aging Cohort- Roles of Circulating Extracellular	93.113	5R01ES027747-05		466,202	421,855
Assessing the effects of exposures to phthalates in both the female and male germlines	93.113	5F31ES032631-03		32,895	-
Causal machine learning methods for studying the effects of environmental exposures on childhood	93.113	5K01ES032458-03		78,915	-
Characterizing the link between multiple environmental exposures and Parkinson's disease exacerbation	93.113	5R01ES034373-03		642,678	37,875
Climate factors, racial/ethnic disparities, and menstrual cycle health	93.113	5R01ES035106-02		409,219	226,445
Data science tools to identify robust exposure-phenotype associations for precision medicine	93.113	3R01ES032470-04S1		769,861	101,758
Effects of Environmental Phthalates and Chemical Mixtures on Male Puberty and Semen Quality	93.113	5R01ES014370-15 REVISED		55,923	11,685

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Environmental Exposures and Sleep in the Nurses' Health Study 3	93.113	5F31ES035252-02REVISED		38,583	-
Environmental Obesogens and Weight Change in the POUNDS LOST Trial	93.113	5R01ES022981-09		498,730	223,891
Estimating acute impacts of unconventional oil and gas development on cause-specific hospitalization via satellite-based exposure assessment	93.113	5K99ES034459-02		110,393	-
Graduate Training in Biostatistics	93.113	2T32ES007142-41		561,813	-
Graduate Training in Biostatistics	93.113	5T32ES007142-40		10,450	-
Harvard Chan School NIEHS Center for Environmental Health	93.113	5P30ES000002-60		1,689,047	29,262
Identifying low dose measurement error corrected effects of multiple pollutants using causal modeling	93.113	3R01ES032418-04S1		483,990	-
Immune Tolerance Dysfunction in Pregnancy due to Ambient Air Pollution Exposure	93.113	3R01ES032253-05S1		478,070	50,775
Maternal and Paternal Preconception Environmental Exposures and Children's Health	93.113	5R01ES027408-05Revised		235,576	23,163
Metals and developmental origins of late life cognitive function	93.113	5R01ES031943-04		735,892	78,562
Multi-Pathway DNA Repair Capacity Measurements in Lung Cancer Patients and Healthy Controls	93.113	5U01ES029520-05REVISED		230,466	11,093
Nurses Health Study 3: A multiple exposure environmental epidemiology cohort of young adults	93.113	5R24ES028521-05REVISED		272,326	146,306
Per- and Polyfluoroalkyl substances mixtures and maternal cardiovascular disease risk across the	93.113	5R01ES031065-04		705,420	379,460
Pregnancy and postpartum as vulnerable exposure windows: phthalates and maternal cardiometabolic	93.113	5R01ES033185-03		549,724	375,692
Relationship Between Multiple Environmental Exposures and CVD Incidence and Survival: Vulnerability	93.113	5R01ES028033-05		161,584	54,513
SPP1, Oxidative Stress, and Lead Toxicity	93.113	5R01ES029097-05		219,254	107,144
The Impact of Maternal and Paternal Preconception Perfluoroalkyl Substance (PFAS) Exposure on	93.113	5R01ES031657-05REVISED		510,234	144,226
Reproductive and Perinatal Outcomes					
Training Program in Environmental Epidemiology	93.113	5T32ES007069-45		668,102	-
Total for Assistance Listing Number 93.113				11,048,369	2,538,412
Biology of cortical bone of long bones and calvarium Role of Sfrp4 in periosteal bone formation	93.121	5R01DE029615-05 REVISED		393,293	31,891
Cxcl12-Hedgehog signaling in cranial bone regeneration	93.121	5R01DE025866-07		511,621	-
Engineering Skeletal Muscle With Biodegradable Hydrogels	93.121	5R01DE013349-21		(2,770)	-
Fibrin-neutrophil interaction in periodontitis immunopathology	93.121	4R00DE030124-02 REVISED		179,304	-
Harvard School of Dental Medicine Collaborative Clinical Practice-based REsearch Program for DENTAl	93.121	5U01DE033239-02		546,006	46,293
Programming dendritic cells in concert with morphagen delivery for periodontal regeneration	93.121	5R01DE019917-05		(877)	(877)
Roles of neutrophil-sensory neuron interactions in dental pulp inflammation and pain	93.121	1K99DE033421-01		34,841	-
Total for Assistance Listing Number 93.121				1,661,418	77,307
Health Promotion and Disease Prevention Research Centers	93.135	6U48DP006376-05-01		1,374,804	132,987
Total for Assistance Listing Number 93.135				1,374,804	132,987
Metals and Metal Mixtures: Cognitive Aging, Remediation and Exposure Sources (MEMCARE)	93.143	3P42ES030990-05		1,380,754	411,949
Total for Assistance Listing Number 93.143				1,380,754	411,949
Military exposures and ALS in a large veteran population	93.161	5R01TS000338-03		312,423	175,093
Total for Assistance Listing Number 93.161				312,423	175,093
Advanced tools for using ancient DNA to study biology and history	93.172	5R01HG012287-12 REVISED		565,560	-

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Center for Genome Imaging	93.172	5RM1HG011016-04 REVISED		2,736,473	1,419,952
Coordinating Center for the Undiagnosed Disease Network Phase II	93.172	3U01HG007530-08S1 REVISED		600,340	138,200
Development and Application of Computational Methods for Single Cell DNA Sequencing Data	93.172	5R01HG012573-03		534,977	-
Direct sequencing of nascent RNA to uncover the functional impact of genetic variants on RNA	93.172	1R21HG011682-01A1		6,081	-
Fine-mapping causal tissues at disease-associated loci to infer disease subtypes	93.172	5F32HG012889-02		63,893	-
FLYBASE: A DROSOPHILA GENOMIC AND GENETIC DATABASE	93.172	5U41HG000739-30 (REVISED)		1,780,065	811,359
FlyBase: A Drosophila Genomic and Genetic Database	93.172	1U24HG013300-01 REVISED		84,240	-
Grammar-Driven Genomic Data Visualization	93.172	5R01HG011773-03 REVISED		809,866	-
HMMER and Infernal: Finding distant homologs of sequences and RNA structures	93.172	5R01HG009116-07		469,309	-
Leveraging functional data to predict disease risk in multi-ethnic populations	93.172	5R01HG006399-12		440,948	284,791
Light-Seq: Spatially targeted profiling of transcriptomic states in cells and tissue	93.172	5R01HG012926-02 REVISED		519,669	16,831
Mechanisms of Transcriptional Control Revealed by Nascent Transcript Sequencing	93.172	5R01HG007173-11		477,882	-
Methods for multi-ancestry and multi-trait fine-mapping and genetic risk prediction	93.172	1F31HG013040-01		33,673	-
Semi-permeable capsules for high-throughput single cell multi-omics	93.172	5R21HG012771-02		213,465	-
Statistical and high-throughput models of enhancer function and evolution	93.172	5R01HG011485-04		602,970	195,423
Structurally complex genome loci in human populations and human phenotypes	93.172	5R01HG006855-12		645,277	-
Systematic Exploration of the Human Interactome IV	93.172	5U24HG006673-13		729,983	-
Tagmentation-based Indexing for Methylation Sequencing as a novel method of high-throughput	93.172	1R21HG011850-01		9,272	-
The transcriptome-wide impact of biological perturbations	93.172	5F31HG013036-02		33,314	-
Training in Bioinformatics and Integrative Genomics	93.172	2T32HG002295-21 REVISED		649,433	-
Training in Bioinformatics and Integrative Genomics	93.172	5T32HG002295-20		66,407	-
Total for Assistance Listing Number 93.172				12,073,097	2,866,556
Development of Specializations Required for Temporal Coding in Octopus Cells	93.173	5F32DC020070-03 REVISED		75,938	-
Dissecting the neural substrates of interhemispheric integration in the larval Drosophila olfactory system	93.173	5F31DC020132-02		33,776	-
Elucidating the structural determinants of odor specificity in insect olfactory receptors	93.173	5R00DC019401-05		194,999	-
Emergence of valence coding in the ventral striatum	93.173	5R01DC017311-05		336,447	-
Gene Therapy for Hearing and Balance Disorders	93.173	5R01DC016932-05		(27,642)	-
Genetic Dissection of Auditory Circuit Assembly	93.173	3R01DC009223-14S1 REVISED		616,942	-
Investigating cortex-brainstem interactions in conditioned taste aversion	93.173	5F31DC020631-02		35,070	-
Language-specific and language-general mechanisms in bilingual aphasic individuals	93.173	1K99DC019973-01A1 (REVISED)		2	-
Measuring and Modeling the Effects of Reticular Lamina Flexibility on Outer Hair Cell Bundle Phase and Cochlear Amplification	93.173	5F31DC021079-02 REVISED		35,628	-
Molecular Mechanisms of Auditory Transduction	93.173	2R01DC000304-36A1		282,028	-

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Morphological and Molecular Development of Efferent Innervation of the Cochlea	93.173	5F32DC019009-03		46	-
Neuron-Glia Interactions in the Cochlea	93.173	5R01DC020182-03		562,236	-
Neuronal control of cochlear stress responses	93.173	1R01DC021692-01		139,327	-
Stability and flexibility of neural representations in the ventral striatum	93.173	2R01DC017311-06 REVISED		154,870	-
Synaptic and Circuit Mechanisms of Olfactory Processing	93.173	5R01DC008174-15		584	-
The Role of the Motor System in Speech and Language in Autism	93.173	5F31DC020864-02		33,006	-
Training for Speech and Hearing Sciences	93.173	5T32DC000038-33		492,145	-
What Causes Hearing Loss: Advancing the Methods	93.173	2R01DC017717-04A1		88,620	-
What Causes Hearing Loss: Advancing the Methods	93.173	5R01DC017717-		303,527	77,536
Total for Assistance Listing Number 93.173				3,357,549	77,536
Telehealth Technology Enabled Learning Program	93.211	6 U3IRH43510 03 01		665,666	-
Total for Assistance Listing Number 93.211				665,666	-
2022 Teaching Kitchen Research Conference	93.213	1R13AT011986-01		6,869	-
Inequities in Health Outcomes in the Twenty-First Century: Understanding New Causes and the Impact of Delivery System Reforms on Health Care Disparities	93.213	5DP5OD024564-05		38,730	-
Spinal Cord Nociceptive Circuits that Deliver Outputs to the Brain to Initiate Pain	93.213	1R01AT011447-01 REVISED		196,185	196,185
Spinal Cord Nociceptive Circuits that Deliver Outputs to the Brain to Initiate Pain	93.213	5R01AT011447-03		969,327	421,495
Total for Assistance Listing Number 93.213				1,211,111	617,680
Health Policy Training Grant	93.225	5T32HS000055-31		415,503	-
Total for Assistance Listing Number 93.225				415,503	-
Comparing Targeted and Non-Targeted Approaches to Improving the Value of Cancer Care Services	93.226	5R01HS026498-04		149,663	4,809
Deriving an Evidence Base for Emergency Management in U.S. Hospitals: Toward Resilience in the Midst of COVID-19	93.226	5R01HS028240-02 REVISED		107,034	10,339
Drug markets and the opioid epidemic	93.226	1R36HS029104-01		1,050	-
Engineering highly reliable learning lab	93.226	5P30HS024453-04 Revised		(13,063)	(13,063)
Evaluations of Increasing State Investments in Primary Care: Effects on Health Care Spending,	93.226	1R01HS029497-01A1		34,166	-
Examining payment and delivery model impacts on health equity using novel quasi-experimental causal	93.226	5R01HS028985-03		343,509	36,755
Health Policy Training Grant	93.226	5T32HS000055-29		(1,167)	-
Prescribing of opioids at hospital discharge and associated adverse patient outcomes	93.226	5R01HS026753-05 REVISED		515,105	122,184
Quality and Outcomes under Medicaid Managed Care: Evidence from Random Plan Assignment	93.226	5K01HS025786-05		3,491	-
R18 Closed Loop Diagnostics : AHRQ R18 Patient Safety Learning Laboratories	93.226	5R18HS027282-04		373,674	234,213
Risk Aversion, Fear of Malpractice, and Medical Decision Making in the Emergency Department	93.226	5R01HS026730-04		451,594	127,603
Scalable Digital Communication Intervention to Support Older Adults and Care-partners Transitioning	93.226	5R01HS029454-02		4,299	-
The Impact of Federal COVID-19 Provider Relief Funds on Patients, Hospitals, and Disparities	93.226	1R36HS029440-01 REVISED		22,620	-
Understanding the effect of increases in the minimum wage on access to health care and health	93.226	5F32HS029259-02		70,641	-
Total for Assistance Listing Number 93.226				2,062,616	522,840
Understanding the effects of sleep deprivation on the gut's cellular homeostatic process	93.233	5F32HL168844-02		69,541	-
Total for Assistance Listing Number 93.233				69,541	-

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2/4 Powering Genetic Discovery for Severe Mental Illness in Latin American and African Ancestries	93.242	5U01MH125045-04REVISED		717,102	-
A novel output pathway from the cerebellum for regulation of diverse non-motor behaviors	93.242	5R01MH122570-05 REVISED		651,873	-
A Tool for Synapse-level Circuit Analysis of Human Cerebral Cortex Specimens.	93.242	5UG3MH123386-02 REVISED		705,721	350,501
An intersectional approach to transgender and/or nonbinary college student mental health: The role of gender identity, race/ethnicity, socioeconomic status, and campus policy	93.242	1R36MH135609-01REVISED		16,312	-
Basal ganglia circuit mechanisms for threat coping	93.242	1R01MH133950-01		391,594	-
Behavioral and Neurocognitive Mechanisms Linking Peer Victimization to Adolescent Psychopathology	93.242	5K99MH126163-02 (REVISED)		3,561	-
Bidirectional Interactions of Cortex and Basal Ganglia During Action Selection	93.242	5F32MH125596-03		13,379	-
Biochemical and Biophysical Tuning of Presynaptic Function by the Clock Protein BMAL1	93.242	5F30MH132277-02		39,924	-
Biological/behavioral rhythms and suicidal behavior: A real-time monitoring study	93.242	5K23MH120439-04		172,393	4,147
Building a robust organoid platform to study the developmental potential and physiology of human	93.242	1RF1MH123948-01		12,939	-
Capturing the Structure and Dynamics of Suicidal Thinking	93.242	5F31MH130055-02		33,592	-
Characterizing pubertal and age mechanisms of neurodevelopment and association with rising	93.242	3R01MH129493-03S1		671,323	286,754
Clinician-Consumer Collaboration in Transdiagnostic, Modular Youth Psychotherapy	93.242	5F31MH127862-03		33,342	-
Comprehensive and multi-resolution mapping of cell morphology and wiring through X-ray holographic nano-tomography	93.242	1RF1MH128949-01 REVISED		595,853	27,895
Comprehensive single-cell atlas of the developing mouse brain	93.242	5U01MH130962-03		9,139,503	7,492,824
Computational and neural underpinnings of decision-making in social contexts	93.242	5K00MH125856-04 REVISED		6,984	-
Cortical interneuron subtypes adapt to signals from local pyramidal cells	93.242	5F32MH125464-03		81,329	-
Developmental origins of mental illness: evolution and reversibility	93.242	5P50MH094271-10 (REVISED)		588,943	-
Digital Implementation Support to Achieve Uptake and Integration of Task-Shared Care for Schizophrenia in Primary Care in India	93.242	1R01MH133230-01 REVISED		5,899	-
Dissecting Mechanisms of Striatal Acetylcholine Transmission in the Vertebrate Brain	93.242	5F32MH131232-02 REVISED		42,079	-
Dissecting the assembly of neurotransmitter release sites	93.242	5R01MH113349-08		467,114	-
Dissecting the assembly of vertebrate neurotransmitter release sites	93.242	5R01MH113349-05 REVISED		(72)	-
Distributed Neural Activity Patterns Underlying Practice-Based Learning	93.242	3K99MH127471-02S1		99,534	-
Early life stress and differential effects on the molecular maturation of specific subtypes of brain	93.242	1R21MH134020-01		207,309	-
Efficacy of a differentiated care intervention for adolescents transitioning to adult HIV care in Peru	93.242	3R01MH131414-03S1		568,924	222,631
Emotional Awareness: An integrative neural mechanism linking childhood trauma with psychopathology	93.242	5K99MH127248-02		57,101	-
Enhancing Clinical Decision-Making in Modular Youth Psychotherapy	93.242	5F31MH134555-02		37,512	-
ESSENCE (Enabling translation of Science to Service to ENhance Depression CarE)	93.242	3U19MH113211-05S1		407,144	104,960
Ethical and Policy Aspects of Cortical Visual Prosthetics Research: An Empirical Neuroethics Study	93.242	5F32MH127776-04		72,782	-
Event-related Neuroimaging of Human Memory Formation	93.242	5R01MH060941-23		362,924	-
Functional and molecular organization of lateral septum in threat processing	93.242	1R36MH136796-01 REVISED		5,277	-

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Functional and population genetic architectures of complex disease	93.242	5R01MH101244-13		1,120,251	361,677
Genomic mechanisms of firing rate homeostasis	93.242	5R01MH116223-05 REVISED		101,494	-
Gut Microbiome Contributions to Human Episodic Memory and the Role of Early Life Stress	93.242	1R21MH134157-01		174,493	-
Health Policy Training Program: Promoting Outcomes, Quality, and Diffusion of Medical Advances	93.242	5T32MH019733-28		11,452	-
High throughput assaying of circuit activity and connectivity in brain organoids	93.242	1RF1MH123977-01 (REVISED)		441,174	273,956
Implementing Evidence-Based Treatment for Common Mental Disorders in HIV Clinics in Ukraine	93.242	1K23MH133520-01A1REVISED		134,304	-
Improving Outcomes in Depression in Primary Care in a Low Resource Setting	93.242	5R01MH121632-03		966,824	458,151
Improving Recruitment, Engagement, and Access for Community Health Equity for BRAIN Next-Generation Human Neuroimaging and Beyond (REACH for BRAIN)	93.242	1R01MH134144-01 REVISED		38,415	-
Integrating common and rare genetic variation in autism spectrum disorder	93.242	5F30MH129009-03 REVISED		51,611	-
Intensive longitudinal study of suicidal behaviors and related health outcomes	93.242	5U01MH116928-04 (REVISED)		294,066	96,700
Interoception as a Novel Risk Factor for Suicidal Thoughts and Behaviors	93.242	1F31MH132231-01A1		29,200	-
Investigating the impact of chronic stress on distinct axes of dopamine signaling	93.242	1F30MH132298-01A1		30,237	-
Leveraging EHR data to evaluate key treatment decisions to prevent suiciderelated behaviors	93.242	5R01MH121478-04 REVISED		394,337	159,190
Maternal hair cortisol concentrations, prenatal psychopathology and offspring behavioral phenotypes	93.242	5R21MH128985-02		198,021	82,701
Mental Health Care for Disadvantaged Populations: The Role of the Provider Landscape	93.242	1R01MH135884-01 REVISED		35,512	-
Modeling ASD-linked genetic mutations in 3D human brain organoids	93.242	5R01MH112940-05 (REVISED)		17,363	13,265
Neural mechanisms of foraging decisions	93.242	5F32MH126505-03		55,079	-
Neurodevelopment In HEU Children Exposed In Utero To Dolutegravir Or Efavirenz	93.242	3R01MH121191-04S1Revised		438,832	196,636
Neurodevelopmental Mechanisms Underlying Stress Vulnerability during Adolescence	93.242	3R37MH119194-04S2		2,233,943	-
New Methodologies for Connectomics	93.242	5K99MH128891-02		61,991	-
Pathogenic mechanisms in post-bereavement psychopathology: Contributions of gene-environment interplay, psychosocial factors, and cognitive ability in two population-based cohorts	93.242	5K23MH117278-05		145,258	-
Ph.D. Training in Neuroscience	93.242	5T32MH020017-25 REVISED		66,407	-
Platform technologies for scalable highly multiplexed proteomic phenotyping of the brain	93.242	1RF1MH128861-01 (REVISED)		2,492,896	1,938,113
Post Traumatic Stress Disorder and Accelerated Aging in Women	93.242	5R01MH101269-08REVISED		261,496	238,257
Post-trial Access, Clinical Care, Psychosocial Support, and Scientific Progress in Experimental Deep	93.242	5R01MH133657-02		452,003	98,277
Precision Mapping the Human Cerebellum for Neuromodulation and Understanding of Brain Disorders	93.242	5R01MH124004-03		236,370	58,212
Pregnancy influences maternal immune cell function and fetal brain development	93.242	5R01MH119459-05		559,625	-
Resting-state functional connectivity mapping using Magnetic Particle Imaging (MPI)	93.242	5F30MH129062-02		51,249	-

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Robust Learning Approaches for Assessing Effects and Effect Heterogeneity of Real World Antipsychotic Treatment Regimes in Elderly Persons with Schizophrenia	93.242	5R01MH130213-02 REVISED		625,397	70,368
Scalable electron tomography for connectomics	93.242	1RF1MH129261-01 REVISED		1,058,106	561,141
Spatial genomics and cell atlas of the human brain	93.242	1R01MH134800-01		694,581	-
State-dependent and branch-specific neurotransmitter usage in a serotonergic/glutamatergic neural circuit regulating adaptation to seasonal photoperiod	93.242	5R21MH127341-02		310,010	-
Structural Stigma and HIV Prevention Outcomes	93.242	5R01MH112384-06 (REVISED)		124,064	18,494
Testing FIRST in Youth Outpatient Psychotherapy	93.242	5R01MH124965-04		854,098	192,428
The Impacts of County-Level COVID- 19 -Related Public Health and Social Policies on Racial/Ethnic and Socioeconomic Disparities in Mental Health and Healthcare Utilization	93.242	5UMH129968-02		436,427	280,168
The molecular and cellular basis of cortical interneuron divergence	93.242	5R37MH071679-19 REVISED		706,322	-
The molecular roles of RFX3 in neurodevelopment and Autism Spectrum disorder	93.242	5F30MH128995-02		52,562	-
The Optics of Health: Race Skin Tone Minority Health and Health Disparities in the U.S.	93.242	1DP2MH132941-01		129,686	12,312
Thermal-plex: fluidic-free, rapid sequential multiplexed imaging of RNA and protein in brain tissues	93.242	1RF1MH132599-01		701,229	-
Tools to broaden access to high-throughput functional connectomics	93.242	1RF1MH117808-01A1 REVISED		132,269	121,159
Training Program in Comparative Effectiveness Research for Suicide Prevention	93.242	5T32MH125815-03		168,275	-
Training Program in Psychiatric Genetics and Translational Research	93.242	5T32MH017119-38		386,321	-
Uncovering the genomic and transcriptomic variation due to mobile elements in the population and in Use of Telemedicine in the Treatment of Mental Illness	93.242	1F31MH136735-01		4,524	-
	93.242	5R01MH112829-07 REVISED		858,275	214,306
Violence Exposure and Perpetration in Black and Minoritized Youth	93.242	1R36MH133338-01A1 REVISED		20,145	-
Total for Assistance Listing Number 93.242				34,565,388	13,935,223
Loewenthal GACA	93.250	5 K01HP49053 02 00		54,616	52,616
Total for Assistance Listing Number 93.250				54,616	52,616
COVID-19: The Harvard TH Chan School of Public Health Center for Work, Health and Wellbeing	93.262	6 U19OH008861-17-		1,431,311	608,774
Harvard TH Chan Education and Research Center for Occupational Safety and Health	93.262	6T42OH008416-20-01		1,714,531	2,160
Lung Disease in Chinese Textile Workers	93.262	6R01OH002421-26-02		6,206	-
The HSPH Education and Research Center of Occupational Safety and Health	93.262	6T42OH008416-18M003		14,830	14,830
WTC-Work Study: World Trade Center Non-Traditional Responders' Employment and Mental Health	93.262	5R21OH012626-02-00		138,821	11,462
Total for Assistance Listing Number 93.262				3,305,699	637,226
Alcohol and Breast Cancer: Genetic Interactions and Effects on Aromatase Inhibitor Therapy	93.273	5K01AA027831-05		124,851	5,159
Medications for Alcohol Use Disorder: Unfilled Prescriptions and Treatment Trajectories	93.273	5R01AA029267-04 REVISED		565,492	242,148
Telehealth in the Treatment of Alcohol Use Disorders: Impact on Access, Disparities, and Quality of Care	93.273	5R01AA030539-02		506,730	40,291
Total for Assistance Listing Number 93.273				1,197,073	287,598
Dissecting the algorithmic and neural circuit basis of dopamine-driven learning in the striatum	93.279	1K99DA060290-01		13,833	-

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Mechanisms for somatodendritic dopamine release in the midbrain	93.279	5R01DA056109-02 REVISED		691,074	217,966
Neural Network Models Constrained by Multiscale Data to Infer Minimal Functional Motifs in the Brain	93.279	7RF1DA056403-03		332,203	-
Opioid Prescribing and Chronic Pain in the Primary Care Setting	93.279	5F30DA052116-03 REVISED		49,724	-
Precision pharmacology of the opioids	93.279	5DP1DA046586-05		312,404	-
Roles for dopamine signaling modes in striatal circuit modulation and behavior	93.279	1R01DA058777-01A1		23,194	-
Stress, Arousal and Mood: Affective Influences on Decisions under Uncertainty	93.279	5R01DA042855-05 (REVISED)		155,693	-
Telemedicine for Treatment of Opioid Use Disorder	93.279	5R01DA048533-04 REVISED		260,231	26,149
The Development and Validation of an Index to Measure Vicarious Trauma Exposure Among Substance	93.279	5R36DA055242-02		27,927	-
Tracking and regulation of nicotine dependence in the insular cortex	93.279	5F30DA057823-02 REVISED		40,311	-
Validated tools for identifying, characterizing, and targeting all non-neuronal cells in the brain and determining the neuro-glio-vascular connectome	93.279	1RF1DA048786-01 REVISED		670,972	-
Total for Assistance Listing Number 93.279				2,577,566	244,115
Brain-wide Neuronal Circuit Mapping with X-ray Nano-Holography	93.286	5K99EB032217-02 REVISED		5,536	-
Development of a Gene-Transfer-Resistant and Biocontained Next-Generation Bacterial Host for	93.286	1K99EB035165-01		80,701	-
Total for Assistance Listing Number 93.286				86,237	-
A culturally-tailored dietary trial for cardiometabolic health in Puerto Rico	93.307	5R01MD018750-02		291,308	35,156
Advancing novel methods to measure and analyze multiple types of discrimination for population health	93.307	5R01MD012793-05		356,824	83,467
DNA methylation and adversity: pathways from exposures to health inequities	93.307	5R01MD014304-04Revised		499,652	168,965
Evaluating an Intervention to Improve Medication Access and Quality of Care for Underserved	93.307	5R01MD017747-03		630,124	205,208
Field Experiment to Assess the Impact of Medicaid on Disparities in Dental Care Utilization	93.307	5R01MD017093-03		752,947	19,029
Health Reform and Oral Health Disparities: a Mixed Methods Evaluation	93.307	5R00MD012253-05 REVISED		343,913	-
Reducing oral health disparities in children using predictive analytics and mathematical modeling	93.307	4R00MD016895-03 REVISED		109,414	-
Reducing oral health disparities in children using predictive analytics and mathematical modeling	93.307	5K99MD016895-02 REVISED		54,915	-
Work Requirements and Health Care Disparities in Medicaid: A Randomized Controlled Trial	93.307	5R01MD014970-05 REVISED		227,371	27,325
Total for Assistance Listing Number 93.307				3,266,468	539,150
4D Nucleome Network Data Coordination and Integration Center	93.310	5U01CA200059-09 REVISED		2,291,041	169,859
Capturing, quantifying, and understanding combinatorial effects in small molecule signaling	93.310	1DP2GM154152-01		295,371	-
Constructing the nest - understanding the mechanisms of nidoviridae RNA genomes transcription and recombination	93.310	1DP2AI175475-01 Revised		699,435	-
Data Analysis Center for Somatic Mosaicism Across Human Tissues Network	93.310	5UM1DA058230-02		1,677,015	180,356
Data Exploration and Visualization Tools for HuBMAP and a Human Reference Atlas	93.310	3OT2OD033758-01S1		1,787,558	-

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Exploring the unknown protein universe using evolutionary information	93.310	5DP5OD026389-05 (REVISED)		155,617	-
High-throughput single-molecule protein identification via super-resolution imaging	93.310	5DP1GM133052-05		1,180,952	-
Identifying Principles of Protein Mechanics by Applying Force and Observing Motion	93.310	1DP2GM141000-01		582,976	-
Interoperability and Collaboration with the Common Fund Data Ecosystem to Improve Utility of 4DN Data	93.310	OT2 OD032119 01		441,971	-
Molecular Causes of Down Syndrome Associated Congenital Heart Disease and Other Phenotypes	93.310	1R01HL151257-01 REVISED		925,693	-
Research Training on Harnessing Data Science for Global Health Priorities in Africa	93.310	5U2RTW012140-03		362,302	159,803
Single-cell epigenomic and cellular plasticity	93.310	1DP2HL151353-01		146,312	-
Subcellular RNA-Proteome Mapping in Subtype- and Circuit-specific Growth Cones: Development, Cell Biology, Disease, and Regeneration	93.310	5DP1NS106665-05 (REVISED)		108,717	-
The Harvard Dataverse repository: A generalist repository integrated with a Data Commons	93.310	3OT2DB000004-01S3		551,372	-
The Molecular Basis of Caste Development and Evolution in Ants	93.310	5DP5OD029792-04		589,891	-
Toward mechanistic cognitive neuroscience: cell types, connectivity, and patterned perturbations	93.310	5DP1MH125776-04		1,699,089	-
Uncovering molecular effectors of mammalian aging	93.310	5DP1AG063419-05 REVISED		902,110	-
Visualizing mechanisms at the intersection of chromatin, transcription, and epigenetics	93.310	1DP2ES036404-01		456,020	-
Total for Assistance Listing Number 93.310				14,853,442	510,018
Harvard Clinical and Translational Science Center	93.350	5UM1TR004408-02		10,610,430	3,290,201
CTSA K12 Program at Harvard Medical School	93.350	5K12TR004381-02		1,407,819	1,269,659
Institutional Career Development Core	93.350	5KL2TR002542-05		57,445	57,445
NRSA Training Core	93.350	5TL1TR002543-05		332,292	-
SMART IRB Governance, Administration, and Operations Support	93.350	75N95023C00008		1,416,897	102,111
The Harvard Clinical and Translational Science Center	93.350	5UL1TR002541-05 REVISED		120,631	120,631
Total for Assistance Listing Number 93.350				13,945,514	4,840,047
Drosophila models of human mitochondrial diseases	93.351	1R24OD035556-01		569,509	218,224
Next-generation Drosophila cell lines to elucidate the cellular basis of human diseases	93.351	5R24OD019847-04 REVISED		57,392	-
Resources for functional studies in Drosophila	93.351	5R24OD031952-03 REVISED		433,861	6,824
TRiP resources for modeling human disease	93.351	5R24OD030002-04		645,582	-
Using CRISPR technology to study the function of paralogous genes	93.351	5R24OD026435-04 REVISED		327,528	-
XenCAT: Xenopus Single Cell Atlas	93.351	3R24OD031956-02S1		954,322	88,106
Total for Assistance Listing Number 93.351				2,988,194	313,154
Biomaterials to Create T Cell Immunity	93.353	1U54CA244726-01 REVISED		1,128,571	493,633
COVID-19: The Implementation Science Center for Cancer Control Equity	93.353	5P50CA244433-04REVISED		43,178	40,843
Integrative Visualization of Spatiotemporal Tumor Atlases	93.353	1R33CA263666-01 REVISED		301,089	-

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The Implementation Science Center for Cancer Control Equity	93.353	5P50CA244433-04REVISED		1,693,821	888,295
The pre-cancer atlases of cutaneous and hematologic origin (PATCH Center)	93.353	1U2CCA233262-01 REVISED		1,042,733	264,771
Total for Assistance Listing Number 93.353				4,209,392	1,687,542
Evaluating the Implementation and De-Implementation of Pandemic Era SNAP Expansion Policies on Diet and Health: A Mixed Methods Project	93.361	1R01NR021098-01Rev		444,632	166,897
Total for Assistance Listing Number 93.361				444,632	166,897
DARTS: Defeating Antibiotic Resistance through Transformative Solutions	93.384	1AY2AX000005-01		10,104,499	6,112,253
Total for Assistance Listing Number 93.384				10,104,499	6,112,253
CANCAN - Harvard	93.393	1OT2CA278689-01 REVISED		248,667	-
CANcer Cachexia Action Network/CANCAN	93.393	1OT2CA278654-01Revised		167,774	-
Cancer Epidemiology Cohort in Male Health Professionals	93.393	5U01CA167552-13		1,598,892	118,330
Cellular engineering to improve the efficacy and specificity of targeted immunotherapy	93.393	5F99CA264312-02 REVISED		4,392	-
Characterizing the effects of extracellular matrix viscoelasticity on dendritic cell activation	93.393	5K00CA253759-05		87,137	-
Comparative Modeling to Inform Cervical Cancer Control Policies	93.393	3U01CA253912-04S1		1,927,499	1,129,673
Illuminating the evolutionary history of colorectal cancer metastasis	93.393	5R37CA225655-08		540,514	-
Improving Mammography Completion and Follow-Up in Community Health Centers	93.393	5R03CA256233-02REVISED		35,149	-
Informing anti-tobacco communications with affective and decision science: Application of the Appraisal Life Course Cancer Epidemiology Cohort in Women	93.393	5R01CA224545-05		755,718	115,792
	93.393	2U01CA176726-11REVISED		1,303,294	654,907
Life Course Cancer Epidemiology Cohort in Women	93.393	5U01CA176726-10REVISED		876,830	669,801
Molecular Biology of Oncogenic Papillomaviruses	93.393	5R35CA197262-07 REVISED		(49,937)	-
Molecular mechanisms of pathway choice in DNA double strand break repair	93.393	5R01CA272436-03		445,523	-
Multifactoral breast cancer risk prediction accounting for ethnic and tumor diversity	93.393	5U01CA249866-03Revised		82,752	82,752
Single-molecule analysis of eukaryotic transcription activation	93.393	5R01CA246500-04		292,204	137,479
Statistical Methods for Analysis of Massive Genetic and Genomic Data in Cancer Research	93.393	5R35CA197449-09		975,704	36,787
Statistical methods for cancer genomics and cell-free DNA analysis	93.393	5R01CA240299-05		296,143	54,410
T Cell Receptor Forces: From Molecular Mapping to Cancer Therapeutic Triggering	93.393	5K00CA234959-05 REVISED		16,377	-
The Boston Lung Cancer Survival Cohort	93.393	5U01CA209414-06Revised		61,781	61,781
The Boston Lung Cancer Survival Cohort	93.393	5U01CA209414-08		1,252,780	353,673
The Gut Microbiome, Lifestyle, and Colorectal Neoplasia	93.393	5U01CA261961-03		934,744	133,893
The Impact of a Changing Health Care Delivery System on the Quality of Oncology Care	93.393	3R01CA255035-04S1		1,021,646	334,561

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Federal Grantor/Pass-through Grantor/Program or Cluster Title	Assistance Listing Number	Award Number	Pass-through Entity Identification Number	Federal Expenditures	Passed to Sub-Recipients
Theory and methods for mediation and interaction	93.393	5R01CA222147-05REVISED		232,471	38,480
Total for Assistance Listing Number 93.393				13,108,054	3,922,319
Advancing technologies for the collection and analysis of high dimensional immunoprofiles and tumor	93.394	5R50CA274277-02		174,021	-
Association between pre-diagnosis hepatic fat infiltration and risk of liver metastasis and mortality in a large cohort of stage I-III colorectal cancer survivors	93.394	5R01CA255184-02		745,520	525,044
Causal, Statistical and Mathematical Modeling with Serologic Data	93.394	4U01CA261277-02REVISED		776,352	43,473
COVID-19: Causal, Statistical and Mathematical Modeling with Serologic Data	93.394	1U01CA261277-01Revised		(92,518)	-
COVID-19: Causal, Statistical and Mathematical Modeling with Serologic Data	93.394	4U01CA261277-02REVISED		2,046	-
High dimensional digital pathology to investigate the tumor micro environment and its impact on	93.394	5R50CA252138-04		198,478	-
Total for Assistance Listing Number 93.394				1,803,899	568,517
Biomaterial Cancer Vaccines that Generate Patient-Specific Antigen In Situ	93.395	5R01CA223255-05 (REVISED)		(972)	-
Coffee and metabolites modulating the gut microbiome for improved colorectal cancer survival	93.395	5R01CA263776-03		588,157	290,208
Developmental regulation of apoptosis as a modifiable driver of radiotherapy-induced neurocognitive impairment in pediatric patients	93.395	3R37CA248565-05 REVISED		209,302	-
Identifying optimal dynamic strategies for prostate cancer control	93.395	5R00CA248335-05		113,814	-
Target MDM2/MDMX for reducing normal tissue toxicity induced by chemotherapy	93.395	5R01CA233558-03 REVISED		(96,961)	-
Tetraacylated lipid A enhancement of checkpoint blocking cancer immunotherapy	93.395	1R21CA287104-01		110,153	-
Total for Assistance Listing Number 93.395				923,493	290,208
Cellular and molecular mechanism of Hippo signaling in suppressing liver tumor formation	93.396	5R01CA222571-05		122,576	-
Chemical Genetic Approaches to Study Chromatin Complexes	93.396	5R01CA274437-02		612,349	62,984
Colorectal carcinogenesis and Fusobacterium nucleatum: oncomicrobe, oncometabolites, and oncoimmunology	93.396	5R01CA154426-12REVISED		456,262	-
Decoding and targeting the PI3K-mTOR signaling network in cancer	93.396	5R35CA197459-07		(192)	-
Decoding and targeting the PI3K-mTOR signaling network in cancer	93.396	5R35CA197459-		1,060,269	29,990
Defining mechanisms to promote antitumor immunity by modulating one-carbon metabolism	93.396	5R01CA276866-02 REVISED		625,960	10,272
Defining the role of seed and soil in peritoneal metastasis evolution	93.396	1R01CA279054-01A1		40,580	-
Dynamics of Notch Signaling	93.396	5R01CA272484-02		789,285	359,573
Highly multiplexed tissue imaging with high-plex in situ signal amplification	93.396	5R01CA283202-02		455,113	-
Micro-capsules for versatile multiplexed cytometry	93.396	5R33CA278392-02 REVISED		311,933	54,405
Mutational signature analysis: methods and applications to the clinic	93.396	5R01CA269805-03		363,319	-
Notch Signaling in Cancer	93.396	5R35CA220340-07		1,034,996	-
Preventing Melanoma Metastasis by Targeting Lipid Vulnerabilities in Lymph	93.396	1R01CA282202-01A1		42,514	-
Progenitor cell states contributing to aging and lung cancer	93.396	3U01CA267827-03S1		446,724	162,168
Single Cell Genome-Wide Myeloid Response Profiling in Immunotherapy	93.396	5R01CA218579-05		85,817	58,807
Sirtuins and Cancer	93.396	5R01CA273461-03		577,311	198,038

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Towards a complete characterization of the metastasis founder clones in colorectal cancer	93.396	7R01CA269281-02		91,387	-
Tracking the evolution of breast cancer through single cell analyses of premalignant breast tissues from women at high risk for cancer development	93.396	3R35CA242428-05S1		1,043,732	-
Understanding the Mechanism of a Gut Microbial Genotoxin Involved in Colorectal Carcinogenesis	93.396	5R01CA208834-09		338,454	36,750
Unraveling the Complexities of Risk and Mechanism in Cancer	93.396	5R35CA220523-06		992,871	54,829
Viscoelasticity and T Cell Production	93.396	5R01CA276459-02 REVISED		567,264	14,275
Visual Analytics for Exploration and Hypothesis Generation Using Highly Multiplexed Spatial Data of WebMeV: A Robust Platform for Intuitive Genomic Data Analysis	93.396	1U01CA284207-01		323,556	-
	93.396	5U24CA231846-05		571,532	-
Total for Assistance Listing Number 93.396				10,953,612	1,042,091
A new multi-pathway kinase activity assay applied to compound library screening in cancer biology	93.398	1K99CA273170-01 REVISED		18,656	-
Clinical trial data analysis to design novel treatment regimens in oncology	93.398	5F30CA260780-03		50,432	-
Deciphering the role of Six2 in regulating cancer stem cell properties and promoting late-stage	93.398	5K00CA223023-06		9,138	-
Defining the functional and spatial properties of tumor-specific tumor-infiltrating CD8 T cells	93.398	1F31CA287975-01 REVISED		4,704	-
Defining the role of the BCL7 subunit of mammalian SWI/SNF chromatin remodeling complexes in	93.398	5F31CA271427-03		35,448	-
Determining the role of LSD1 in multiple myeloma through a multi-omics approach at single cell resolution	93.398	5F31CA257625-04 REVISED		36,128	-
Developing and evaluating a decision support tool to disseminate tobacco control research and inform	93.398	5K99CA277135-02		120,758	-
Development of ubiquitin-specific protease 8 (USP8) inhibitors	93.398	5F31CA261127-03 (REVISED)		11,314	-
Dietary prevention for colorectal cancer: targeting the bile acid/gut microbiome axis	93.398	5K99CA283146-02		97,357	-
Dissecting the Execution Phase of BAK-Mediated Apoptosis in Cancer	93.398	5F30CA264846-03		52,694	-
Engineering tumor-targeting bacteria to sense and deliver therapeutics	93.398	5K00CA253756-04		86,026	-
Evaluating the impact of antigen selection on T cell responses to therapeutic cancer vaccination	93.398	1F31CA281128-01		19,896	-
Fibrotic remodeling of lymph nodes disrupts T cell function in fibrosis and cancer	93.398	4K00CA264411-03 REVISED		39,932	-
Functionally dissecting MECOM gene regulation in high-risk leukemia	93.398	1F31CA287658-01 REVISED		18,707	-
Harvard Education Program in Cancer Prevention Control	93.398	T32CA057711-30		477,343	-
Identifying gut bacterial molecules and mechanisms that promote an anti-tumor response to	93.398	5K22CA258960-03		172,128	-
Identifying optimal dynamic strategies for prostate cancer control	93.398	5K99CA248335-02 REVISED		360	-
Integrated Epidemiologic Study of Ultra-processed Foods and Colorectal Cancer Risk and Survival	93.398	4K00CA274714-02		79,799	-
Investigating how cancer cells maintain redox homeostasis to support biomass production	93.398	5F30CA268633-03 REVISED		52,161	-
Investigating splicing-derived antigens in the context of Rbm10-mutant lung adenocarcinoma	93.398	1F30CA278495-01		46,857	-
Investigating the role of apoptosis regulation in cancer therapy-induced vascular toxicities	93.398	5F31CA275321-02 REVISED		34,863	-
Learning about the effectiveness of lung cancer screening in real-world target populations	93.398	1K99CA287059-01		56,066	-
Machine Learning Methods to Predict Cancer Progression and Estimate Treatment Effectiveness	93.398	5F30CA268631-03		52,784	-

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Mechanically active artificial antigen presenting cells for cancer immunotherapy	93.398	4K00CA274690-03 REVISED		52,488	-
Metabolic regulation of the anti-tumor CD8+ T cell response to PD-1 by asparagine	93.398	5F31CA281090-02		41,923	-
Metabolomic signatures of inflammation and metabolic health in relation to colorectal cancer risk	93.398	5F30CA265012-02		39,679	-
Nanobodies for Dissecting the Structure and Function of Oligomeric BAX	93.398	5F30CA275293-02		40,123	-
Overcoming Tumor Resistance with Enzyme-Instructed Nanoscale Assemblies and Immunotherapies	93.398	5K00CA234746-06		48,716	-
Patient Administrative Burden in Cancer Care Delivery	93.398	5K99CA277367-02		130,529	-
Program for Training in Cancer Epidemiology	93.398	5T32CA009001-48		634,231	-
Racial disparities in advanced prostate cancer care: An analysis of treatment patterns and patient experience	93.398	5F30CA264965-03 REVISED		52,964	-
Regulation by mTORC1 of the lysosomal efflux of essential amino acids	93.398	5F30CA236179-06 REVISED		(417)	-
Role of a Two-Factor Genetic Circuit Regulating Stemness in Colorectal Cancer	93.398	5F30CA260739-04		50,432	-
Structural and biochemical characterization of VCP1P1 and VCP complex	93.398	5F31CA281197-02		41,923	-
Substrates and Functions of the Sideroflexin Mitochondrial Transporter Family	93.398	5R00CA241332-05		193,178	-
Targeting the E1 Control Point of Protein Ubiquitination in Cancer	93.398	1F30CA275160-01 REVISED		4,392	-
Training Grant in Quantitative Sciences for Cancer Research	93.398	5T32CA009337-43		702,180	-
Understanding and Exploiting Apoptotic Dysregulation in Ovarian Cancer	93.398	1F31CA281083-01A1 REVISED		6,786	-
Understanding the role of TWIST1 in colorectal cancer progression and metastasis	93.398	5F30CA260789-04		55,194	-
Total for Assistance Listing Number 93.398				3,667,872	-
A Culturally-Adapted Multicomponent Teaching Kitchen Intervention for Low-Income Latino Adults	93.837	1K01HL169414-01		127,720	-
A Novel Cognition-based Guidance System to Improve Surgical Safety	93.837	5R01HL126896-06 REVISED		197,687	197,687
Assessing the Implementation of US Programs and Policies for the Prevention of Food Insecurity and Obesity in Schools	93.837	1F31HL162250-01A1 REVISED		1,885	-
CVD Epidemiology Training Program in Behavior, the Environment and Global Health	93.837	5T32HL098048-15		531,080	-
Defining Genetic Architecture and Pathways of DCM	93.837	5R01HL080494-16 REVISED		561,422	-
Determining the Involvement in PERK in TMAO Induced Atherosclerosis	93.837	5F31HL163871-03		32,908	-
Dietary Etiologies of Heart Disease	93.837	5R01HL035464-33		925,971	556,413
Genetic Signals in Ventricular Hypertrophy	93.837	5R01HL084553-13		104,411	-
Integrating lifecourse approaches, biologic and digital phenotypes in support of heart and lung disease epidemiologic research.	93.837	5U01HL145386-06 REVISED		3,242,037	1,716,023
Leveraging a Natural Experiment to Estimate the Effects of School Racial Segregation on Cardiovascular Risk Factors among Youth and Young Adults	93.837	7R01HL151638-04		432,305	251,417
Mediterranean diet, Metabolites, and cardiovascular Disease	93.837	5R01HL118264-11 REVISED		488,757	272,966
Modern Analytics to Improve Quality and Outcome Assessments Following Congenital Heart Surgery	93.837	5R01HL162893-03 REVISED		574,729	222,200
Molecular Quiescence and Cardiomyocyte Maturation	93.837	5R01HL151684-04		161,919	-
Multi-scale modeling of inherited pediatric cardiomyopathies	93.837	3UH3HL141798-05S1		(25)	-

The accompanying notes are an integral part of this schedule.

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Myocardial Physiology of Growth Differentiation Factor Signaling	93.837	5R01HL169291-02		736,141	-
Neuronal and vascular interactions in the CNS	93.837	5R01HL153261-04		464,503	-
NHLBI Summer Training Experience to Increase Diversity in Health-Related Research	93.837	5R25HL121029-10		153,522	-
Novel pathways controlling macrophage inflammation and resolution in atherosclerosis	93.837	5R01HL148137-04		74,107	54,212
Precision Cardiovascular Medicine for Multi-Ethnic Populations	93.837	5K01HL138259-04		149,756	-
Project Title: PROSPECT: Puerto Rico Observational Study of Psychosocial, Environmental, and Chronic	93.837	2R01HL143792-06		21,120	-
Regulation of cardiomyocyte proliferation by the Reptin ATPase	93.837	1F31HL170493-01		26,220	-
Statistical Methods for Integrative Analysis of Large-Scale Multi-Ethnic Whole Genome Sequencing	93.837	5R01HL163560-03REVISED		602,542	-
Studies and Biobanks of Common Diseases					
Statistical methods to understand changes in dietary patterns over time and cardiovascular disease risk	93.837	5K01HL166442-02		123,877	-
The Effects of Early Psychosocial Deprivation on Cardiometabolic Risk in Early Adulthood	93.837	5R01HL151848-05REVISED		570,110	378,009
The role of mitochondrial DNA mutations in chemotherapy induced cardiomyopathy	93.837	3F32HL154644-04S2		49,566	-
Total for Assistance Listing Number 93.837				10,354,270	3,648,927
Air pollution disrupts Inflammasome Regulation in HEart And Lung Total Health (AIRHEALTH)	93.838	7P01HL152953-03REVISED		820,967	222,262
Function and application of lung surfactant proteins	93.838	5R01HL150520-04		524,576	201,948
Integrating polygenic and environmental risk factors for asthma in diverse populations	93.838	5F31HL167378-02		26,682	-
Investigating the effects of airway injury on the alveolar compartment of the lung.	93.838	5F31HL159919-02		4,097	-
Lung-on-a-Chip Disease Models for Efficacy Testing	93.838	5UH3HL141797-05 (REVISED)		(417)	-
Macrophage-Mediated Lung Repair Programs Following Injury	93.838	1F31HL172650-01 REVISED		16,891	-
Neural-Epithelial Encoding of Airway Senses	93.838	5F32HL156583-03 REVISED		49,508	-
Physics of bronchial epithelial unjamming	93.838	5R01HL148152-04		119,128	-
Predicting Pulmonary and Cardiac Morbidity in Preterm Infants with Deep Learning	93.838	5K01HL141771-06		148,600	-
The Hillock: A Newly Discovered Airway Epithelial Structure and its Relationship with Squamous	93.838	1F31HL165736-01A1		30,982	-
Training in Interdisciplinary Pulmonary Sciences	93.838	5T32HL007118-48 REVISED		673,528	-
Total for Assistance Listing Number 93.838				2,414,542	424,210
Self-Assembling Peptide Nanoparticles for in vivo Genome Editor Delivery to Hematopoietic Stem Cells	93.839	5F31HL167533-02		51,543	-
Cap-Dependency in Hematopoietic Stem and Progenitor Cell Translation	93.839	5F31HL158020-03		6,786	-
DNA Damage Repair Pathways Play a Critical Role in Myeloid Differentiation	93.839	5F31HL159913-02 REVISED		13,917	-
Erythrocyte maturation through global remodeling of the proteome	93.839	5R01HL153970-04 REVISED		466,157	167,407
Investigating the functional role of a degron in ASXL1 in hematopoiesis and disease	93.839	1F31HL174076-01		13,275	-
Mechanisms of DNA interstrand cross-link repair	93.839	5R01HL098316-12 REVISED		427,468	-
Molecular determinants of fetal hemoglobin induction by hydroxyurea to treat sickle cell disease	93.839	7F30HL156404-04		22,196	-
Recognition of Orphan Ribosomal Subunit Proteins by the Ubiquitin-Proteasome System	93.839	5F31HL157976-03		35,193	-
Single-Cell Profiling and Lineage Tracing of Zebrafish Hematopoiesis	93.839	5F30HL152628-05		50,522	-

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Structure and Function of the VWF Helical Tubule Required for Hemostasis	93.839	5F30HL162128-03		36,835	-
Understanding the role of Id2 in T cell differentiation and activation during GVHD	93.839	5F31HL156288-03 REVISED		21,575	-
Total for Assistance Listing Number 93.839				1,145,467	167,407
Comparing approval, adoption/de-adoption and outcomes for advanced cardiovascular procedures	93.840	1R01HL167887-01A1		14,305	-
PRIMECare Trial: Preventing Ischemic Heart Disease with mHealth, electronic decision support, and	93.840	5R01HL149912-04		584,735	362,722
Project Title: PROSPECT: Puerto Rico Observational Study of Psychosocial, Environmental, and Chronic Disease Trends	93.840	5R01HL143792-05REVISED		273,256	270,406
Sending and transducing Hedgehog and Wnt signals	93.840	1R35GM153357-01		39,182	-
Simulation Modeling and Disparities in Obesity and Chronic Disease	93.840	5R01HL146625-04		461,132	-
Total for Assistance Listing Number 93.840				1,372,610	633,128
Aging and Rejuvenation of Skin Stem Cells	93.846	1R01AR083416-01		205,024	-
BMP2 Regulation of Periosteal Function	93.846	5R01AR077432-05 REVISED		520,312	-
Characterization of the Insulin to Autophagy Pathway in Muscles	93.846	5R01AR057352-15		706,213	-
Defining key differences in mouse fibroblasts during digit regeneration and fibrosis	93.846	5F31AR082220-02		36,676	-
Development, Evaluation and Translation of Robotic Apparel for Alleviating Low Back Pain	93.846	4UH3AR076731-02 (REVISED)		347,360	158,825
Elucidation of the role of Creb5 in promoting the formation and patterning of the intervertebral disc	93.846	5R21AR081990-02		110,948	-
Elucidation of the Role of Creb5 in Synovial Joint Formation	93.846	5R01AR074385-05 REVISED		565,713	-
Interdependence of lineages within the mammalian skin	93.846	5R01AR070825-05 (REVISED)		31,054	-
Mechanism of action of PTH: New signaling components that regulate bone formation and bone marrow fat	93.846	5R01AR073774-05 REVISED		693,689	163,984
Mechanistic and Therapeutic Studies of Initiation and Expansion for Genetic and Acquired Heterotopic	93.846	3K99AR078929-02S1		171,805	-
Molecular architecture of the human knee joint and pelvis at single cell resolution	93.846	5R01AR081274-02		736,254	361,375
Molecular Mechanism of Wnt/Planar Cell Polarity Signaling	93.846	5R01AR070877-05 REVISED		528,803	-
Muscle Mass: a Critical but Missing Component in Muscle Modeling and Simulation	93.846	5R01AR080797-02		120,041	43,283
Muscle Tregs in health and disease	93.846	5R01AR070334-09 REVISED		262,271	-
Nerve-stem cell interactions during skin homeostasis and wound repair	93.846	5F32AR079252-03		65,773	-
Rapid functional genetics to study stem cell-niche interactions in the skin	93.846	5R01AR080110-03 REVISED		789,175	-
Real-time quantification of muscle-tendon dynamics for individualized and adaptive robot-assisted	93.846	5R21AR076686-02		8,753	-
Regulation and function of CCR2 on T cells in Rheumatoid Arthritis	93.846	5F31AR082658-02		35,448	-
The role of ALK4 signaling in skeletal homeostasis and pathogenesis	93.846	5R01AR081061-02 REVISED		528,607	-
The Role of Creb5 in Maintaining Synovial Joint Homeostasis	93.846	5R01AR076562-03		782,235	-
The role of GGPS1 and CYP1A1 mutations in atypical femoral fracture	93.846	5R21AR076687-02 REVISED		90,853	50,842
The role of notochord derived signaling, mechanical force generation and AF derived Tgfβ signaling on	93.846	5F32AR076226-03		(75)	-

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The tetraspanin CD151 and integrin $\alpha 3 \beta 1$ signaling complex in basement membrane adhesion	93.846	1F31AR083740-01 REVISED		13,275	-
Uncovering the Genetic Mechanisms Behind Joint-Specific Osteoarthritis	93.846	5R01AR070139-05 REVISED		2,798	(22,392)
Total for Assistance Listing Number 93.846				7,353,005	755,917
Adipose-tissue Tregs: important players in immunological control of metabolism	93.847	5R01DK092541-12		(24,320)	-
Adipose-tissue Tregs: important players in immunological control of metabolism	93.847	5R01DK092541-14		542,210	-
Aire, a zinc-finger protein that controls autoimmunity	93.847	5R01DK060027-23		493,721	-
Automated Glucose Regulation to improve Diabetes Control and Outcomes for Pregnant Women with Type 1 Diabetes and Fetus	93.847	5R01DK120358-03 (REVISED)		50,208	50,208
Bacterial metabolites controlling Th17 and Treg cells	93.847	5R01DK110559-09		701,085	-
BRAIN CONNECTS: Rapid and Cost-effective Connectomics with Intelligent Image Acquisition, Reconstruction, and Querying	93.847	1U01NS132158-01 REVISED		1,621,137	280,499
Characterization of a G Protein-Coupled Receptor Implicated in Intestinal Lipid Homeostasis of <i>Drosophila melanogaster</i> .	93.847	5F31DK130254-03 REVISED		35,298	-
Charting human islet maturation via combined soft nanoelectronics and single-cell spatial transcriptomics	93.847	5DP1DK130673-04		765,433	151,266
Control of Telomere Homeostasis by Nucleotide Metabolism in Hematopoiesis	93.847	5F30DK135340-02		40,221	-
Controlled release of RNA-targeting therapy to promote healing of diabetic ulcers	93.847	5F30DK130564-04		49,440	-
Deconstructing brainstem circuits for visceral senses	93.847	1K01DK132957-01A1 REVISED		89,128	-
Defining Mechanisms of Dynamic mTORC1 Regulation in the Liver with Fasting and Feeding	93.847	5F31DK128873-02 REVISED		37,441	-
Dietary Biomarkers Development Center at Harvard University	93.847	5U2CDK129670-		1,631,116	858,412
<i>Drosophila</i> as a model to study modifiers of Cystic Fibrosis	93.847	5F32DK130290-03 REVISED		73,199	-
Effect of Arrestin Domain-Containing 4 Protein on Glucose Metabolism	93.847	5F32DK126289-03 REVISED		76,010	-
Elucidating the role of the microbiome in inducing gut permeability and inflammation	93.847	5K99DK128503-02 REVISED		12,263	-
Engineering scalable collecting duct networks for functional kidney tissue	93.847	5F32DK131821-03		71,062	-
Ex Vivo Generation of Functional Kidney Tissues for Transplantation	93.847	5UC2DK126023-05		934,382	622,647
Examining the role of succinate-SUCNR1 signaling in skeletal muscle remodeling following exercise	93.847	5F31DK128924-03		14,772	-
FOOD-BASED BIOMARKERS, DIET QUALITY, AND CARDIOMETABOLIC HEALTH	93.847	5R01DK120870-05		593,809	166,468
Gating of Leptin Transport into the Cerebrospinal Fluid at the Choroid Plexus	93.847	5F30DK131642-03 REVISED		38,212	-
High-throughput dissection of transcriptional regulation in kidney disease	93.847	5K00DK126120-04 REVISED		84,328	-
Human Gut Microbiome and Incident Diabetes Risk in U.S. Populations	93.847	5R01DK126698-04 REVISED		478,130	171,702
Identifying an implementation strategy to maximize the public health nutrition impact of the Child and	93.847	5K01DK125278-04		157,326	-
Identifying targetable apoptotic vulnerabilities for the treatment of AL amyloidosis	93.847	5R01DK125263-04		177,125	-
Investigating mechanical regulation of nephrogenesis using viscoelastic biomaterials and kidney organoids	93.847	5F32DK134115-02 (REVISED)		74,700	-

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Investigating the role of PHD3 in lipid homeostasis	93.847	5R01DK127278-04		411,164	-
Investigation of the role of TMED9 in the accumulation of a mutant protein in MUC1 Kidney Disease	93.847	5F30DK127546-04		70,026	-
Lifestyle Interventions, Metabolites, Microbiome, and Diabetes Risk	93.847	5R01DK127601-04REVISED		663,128	402,595
Mapping protein communication between organs in homeostasis and disease	93.847	5R01DK121409-05 REVISED		797,494	621,195
Molecular Mechanisms of Arrestin-Domain Containing Proteins in Metabolism	93.847	5R01DK126688-04 REVISED		354,551	-
Nociceptor neuron regulation of gastrointestinal barrier protection and host defense	93.847	5R01DK127257-04 REVISED		481,401	-
Robust methods for missing data in electronic health records-based studies	93.847	5R01DK128150-04		626,135	138,555
Role of Adipokine FABP4 in Glucoregulation and Counter Regulatory Responses	93.847	5R01DK123458-04REVISED		287,155	-
Saliva and Plasma Metabolomic Signatures of Diabetes Progression in a Hispanic Cohort□	93.847	5R01DK120560-04Revised		439,027	90,944
Training Grant in Academic Nutrition	93.847	5T32DK007703-27		400,061	-
Training Program in Molecular Metabolism	93.847	5T32DK128781-04		120,356	-
Trpv1 nociceptor neurons modulate immune cells to regulate intestinal immunity in enteric infection	93.847	1F32DK137456-01		14,991	-
Total for Assistance Listing Number 93.847				13,482,925	3,554,491
microRNA-Regulated Mechanisms Essential for Structural Plasticity of Drosophila Glutamatergic	93.853	1R01NS135403-01		430,608	-
A comparative approach to uncovering the cellular and circuit basis of the role of the corticospinal tract in	93.853	1K99NS133031-01A1		24,604	-
A Facility to Generate Connectomics Information	93.853	5U24NS109102-05 (REVISED)		775,481	-
A new model system for adult neurogenesis	93.853	5R21NS127312-02		184,733	-
A quantitative framework for understanding endosomal trafficking networks in Alzheimer's disease	93.853	5R01NS110395-05		174,125	-
Action and interaction of ionotropic and metabotropic neurotransmission	93.853	5R37NS046579-20 REVISED		995,318	-
Action and interaction of neurotransmitters and neuromodulators	93.853	1R35NS137336-01		91,872	-
Activity-Dependent circuit integration of somatostatin interneuron subtypes in the developing neocortex	93.853	1F31NS135903-01 REVISED		18,577	-
Anatomical and Functional Characterization of Gastrointestinal to Spinal Cord Circuits	93.853	5F31NS129103-02		35,136	-
Architecture and function of striatal dopamine signaling machinery	93.853	5R01NS103484-07 REVISED		464,570	-
Area postrema neurons that mediate nausea-associated behaviors	93.853	5R01NS122767-03		415,707	-
Biological Novelty through Adaptive Protein Synthesis in the Octopus	93.853	1F31NS132412-01A1 REVISED		15,822	-
Biomarkers and risk factors for prodromal Parkinson's disease and its progression	93.853	5R01NS126260-		512,570	154,432
BRAIN CONNECTS: A Center for High-throughput Integrative Mouse Connectomics	93.853	1UM1NS132250-01 (REVISED)		7,504,981	2,030,978
Circuit specializations of cerebellar molecular layer interneurons	93.853	5F32NS133036-02		68,679	-
Development, Validation, and Application of a Stroke Policy Simulation Model	93.853	5R01NS104143-05		124,567	115,180
Diagnosing the Unknown for Care and Advancing Science (DUCAS)	93.853	5U2CNS132415-02 REVISED		4,958,464	2,817,685

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Dissecting the Forward Trafficking of Presynaptic Voltage Gated Calcium Channels	93.853	5F31NS127399-02 REVISED		35,808	-
Distributional reinforcement learning in the brain	93.853	1R01NS116753-01 REVISED		(130,177)	-
Distributional reinforcement learning in the brain	93.853	5R01NS116753-03		570,616	-
Distributional value coding and reinforcement learning in the brain	93.853	5F31NS124095-03		35,091	-
Divergence of tactile processing in the dorsal column nuclei	93.853	5F31NS124097-02		35,136	-
Dopaminergic regulation of spatial learning	93.853	5R01NS129647-02		526,676	-
Dynamics of cellular brain metabolism using mass spectrometry imaging	93.853	5R01NS126248-03 REVISED		362,229	138,990
Effects of abnormal early experience on IT circuitry	93.853	1R01NS123778-01		756,661	43,539
Electrical Stimulation of Immediate Early Genes	93.853	5R01NS028829-35 REVISED		639,986	-
Elucidating cutaneous mechanosensory circuits, from development to disease	93.853	3R35NS097344-08S1		776,180	-
Elucidating mechanisms of ATXN2 interaction with TDP-43 in human motor neuron models of Amyotrophic Lateral Sclerosis	93.853	5F31NS122138-02 REVISED		4,392	-
Functional analysis of whole-brain dynamics in learning	93.853	5R01NS115484-05 REVISED		387,146	144,455
Genetic and neural mechanisms underlying emerging social behavior in zebrafish	93.853	1R01NS124017-01		668,421	21,590
Genomic mechanisms of BDNF signaling in the brain	93.853	1F32NS134623-01 REVISED		33,296	-
Hippocampal sharp-wave ripple and replay mechanisms underlying long-term memory	93.853	5F32NS129560-02 REVISED		69,116	-
Identifying and Correcting Dementia-Associated Changes in the Blood-Brain Barrier	93.853	1R01NS117407-01		627,600	-
Investigating a role for dopamine in organizing behavioral sequencing	93.853	5F31NS122155-02 REVISED		10,248	-
Investigating descending control of walking	93.853	5K99NS129759-02		119,080	-
Ion Channel Pharmacology for Pain and Epilepsy	93.853	5R35NS127216-03		1,020,677	-
Mechanisms and functions of synapses and circuits	93.853	5R35NS097284-08 REVISED		886,538	-
Mechanisms of seizure resistance in a mouse genetic model with altered metabolism	93.853	5R37NS102586-07		372,114	-
Mechanisms Regulating the Specification and Differentiation of Unique Types of Cholinergic Neurons	93.853	3F32NS120936-03S1		53,823	-
Mechanisms underlying neuronal enhancer specification during postnatal CNS development	93.853	5R01NS115965-05 REVISED		657,547	-
Mechanosensory feature extraction for directed motor control	93.853	5R01NS101157-05		(1,006)	-
microRNA-Mediated Mechanisms Essential for the Structural Plasticity of Drosophila Glutamatergic	93.853	1R56NS124811-01A1		85,359	-
Mind The Gap: Addressing	93.853	5UE5NS128294-02		102,092	-
Molecular and circuit mechanisms of nausea-associated behaviors	93.853	1K99NS129758-01 REVISED		22,204	-
Molecular and genetic dissection of brain circuits controlling fever	93.853	5R01NS112399-05		338,067	-
Molecular Controls over Neurogenesis, Subtype Development, and Diversity of Cortical Output Projection Neurons	93.853	5R01NS045523-16 (REVISED)		15,230	-

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Molecular Development and Diversity of Callosal Projection Neurons	93.853	5R01NS104055-05 REVISED		309,985	-
Molecular Dissection of Active Zone Functions in Neurotransmitter Release	93.853	2R01NS083898-11		106,798	-
Molecular Dissection of Active Zone Functions in Neurotransmitter Release	93.853	5R01NS083898-10		445,912	-
Molecular mechanisms for co-assembly of endocytic and exocytic machineries at a synapse	93.853	5K99NS129959-02		107,061	-
Molecular mechanisms of neuron motility and axon guidance	93.853	2RF1NS069913-11A1		726,582	-
Molecular mechanisms of somatostatin interneuron diversity	93.853	5F31NS130915-02 REVISED		35,268	-
molecular mechanisms of the blood brain barrier function and regulation	93.853	5R35NS116820-05		1,355,124	-
Molecular principles of neuronal maturation and integration in the adult and aging brain	93.853	5R01NS103758-05		282,446	77,585
Motion Sequencing for All: pipelining, distribution and training to enable broad adoption of a next-generation platform for behavioral and neurobehavioral analysis	93.853	5U24NS109520-05		421,918	-
Neural circuits underlying the acquisition and control of motor skills	93.853	5R01NS099323-08		339,276	-
Neurodevelopmental Function of TBC1D7: A Core Component of the TSC Complex	93.853	1R21NS126952-01A1		261,785	-
Neuron-oligodendrocyte communication underlying myelin distribution in the neocortex	93.853	5R01NS128117-03		467,835	-
Odor trail tracking: a new paradigm to unveil algorithms and neural circuits underlying active sensation	93.853	1RF1NS128865-01		1,067,904	59,079
Parietal cortex networks for sensorimotor processing during navigation	93.853	5R01NS089521-10		742,886	-
Peripheral activity-dependent and molecular mechanisms that control somatosensory system development	93.853	5K99NS124993-02 - Revised		73,481	-
PiNBAC: The Program in Neuroscience Post-Baccalaureate Training Program	93.853	3R25NS130945-02S1		217,068	40,887
Precision Mapping of Midbrain and Striatum Networks	93.853	5K00DA058542-03 (REVISED)		76,932	-
Prospective study of vitamin D and MS risk in African Americans	93.853	5R01NS103891- 05REVISED		268,938	25,773
Regulation of PINK1 and PARKIN-dependent mitophagy	93.853	5R01NS083524-20		430,067	-
Sexual Dimorphism Among Glia in the Nervous System	93.853	5F31NS122139-03 REVISED		18,234	-
Single-cell computation in auditory brainstem and its impact on cortical coding and behavior	93.853	1R01NS118402-01 REVISED		24,646	24,646
Single-cell computation in auditory brainstem and its impact on cortical coding and behavior	93.853	5R01NS118402-03		772,073	394,934
State-dependent interaction of antiepileptic drugs with voltage-dependent sodium channels and differential regulation of excitatory and inhibitory central neurons	93.853	5R01NS110860-04 REVISED		300,583	-
Structural variation in neuronal circuits as a basis for functional and behavioral individuality	93.853	1R01NS121874-01		751,060	-
Structural variation in neuronal circuits as a basis for functional and behavioral individuality	93.853	4R01NS121874-02		80,297	-
Studying perceptual decision-making across cortex by combining population imaging, connectomics, and computational modeling	93.853	5R01NS108410-03 REVISED		1,050,379	218,860
Subcellular proteomic investigation of projection neuron growth cones in developing mouse cortex	93.853	5F31NS127518-02		31,792	-
Systematic and functional analysis of alternative mRNA splicing in an in vivo model of learning	93.853	1R21NS121825-01A1 REVISED		134,684	-
Systems-level and in situ transcriptomics deconstruction of neural circuits underlying sensorimotor	93.853	5R01NS116593-03		1,379,271	-
The Development and Integration of Early Born SST-Expressing	93.853	5R01NS081297-10 REVISED		1,832	-
The Development and Integration of Early Born SST-Expressing Interneurons in the Cortex	93.853	2R01NS081297-11A1		224,729	-

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The diversity of dopamine neurons: from connectivity and activity to functions	93.853	5R01NS108740-05		156,544	-
The encoding of uncertainty in the Drosophila compass system	93.853	1R34NS123819-01 REVISED		170,061	-
The Heart and the Mind: An Integrative Approach to Brain-Body Interactions in the Zebrafish	93.853	3U19NS104653-07S1 REVISED		3,403,755	448,630
The Impact of Telestroke on Patterns of Care and Long-Term Outcomes	93.853	3R01NS111952-04 REVISED		55,311	(1,194)
The role of mechanosensory activity in the transcriptional maturation of primary somatosensory neurons	93.853	5F32NS129589-02 REVISED		67,756	-
The role of sciatic nerve inflammation in diabetic neuropathy	93.853	5F31NS127357-02 REVISED		33,006	-
The virtual rodent: a platform to study the artificial and biological control of natural behavior	93.853	5F99NS125834-02		28,482	-
Towards a unified framework for dopamine signaling in the striatum	93.853	5U19NS113201-05		4,243,808	654,670
Two-photon all-optical electrophysiology in behaving mice	93.853	1RF1NS126043-01		602,577	-
Visuomotor coordinate transformation during Drosophila chasing behavior	93.853	5F31NS130782-02 REVISED		35,718	-
Voltage-Dependent Ion Channels Controlling Firing Patterns of Central Neurons	93.853	5R01NS036855-25 REVISED		135,021	-
Total for Assistance Listing Number 93.853				47,314,849	7,410,719
Molecular basis of antibiotic resilience in Mycobacterium tuberculosis	93.855	1R01AI184469-01		3,613	-
Sex differences in T cell metabolism	93.855	1F31AI176738-01A1 REVISED		4,524	-
Structural and functional studies of alphavirus receptors	93.855	1R01AI182377-01		106,836	-
Structural Basis for Translation Initiation in Leishmania Major	93.855	5R21AI156087-02		(8,155)	-
Using genetics and multi-scale imaging to understand the mechanisms underlying mycobacteriophage	93.855	5R21AI156772-02		32,245	(269)
A Clinical Trial of Three Broadly Neutralizing Antibodies and Analytic Treatment Interruption in Early-	93.855	5U01AI179561-02		551,591	105,048
A clinical trial to evaluate the impact of broadly neutralizing antibody VRC01 on HIV viral reservoir and maintenance of suppression in a cohort of early-treated children in Botswana	93.855	5U01AI135940-07 REVISED		765,149	486,806
An RNA Nanosensor for the Diagnosis of Antibiotic Resistance in M. Tuberculosis	93.855	1R01AI176498-01		185,532	-
Bacteria-Virus interactions in genital herpes infections	93.855	1R21AI180508-01		112,085	-
Biochemical and structural characterization of the cell wall synthesis complex required for bacterial	93.855	5F32AI178977-02		61,391	-
Biostatistics/Epidemiology Training Grants in AIDS	93.855	5T32AI007358-35		560,343	-
Botswana-Harvard T.H. Chan School of Public Health AIDS Initiative Partnership CTU	93.855	3UM1AI069456-18S1		1,856,535	899,526
Bridging Statistical Inference and Mechanistic Network Models for HIV/AIDS	93.855	5R01AI138901-05		264,762	29,500
Cell surface biogenesis in Streptococcus pneumoniae	93.855	5R01AI139083-05		186,435	-
Characterizing a novel Plasmodium cytoskeletal protein	93.855	1F31AI181256-01 REVISED		20,609	-
Characterizing a Serine-Threonine Phosphatase Essential for Asexual Replication in Plasmodium falciparum	93.855	5F31AI157041-03 REVISED		32,406	-
Characterizing the Genomic Basis of Immune-Mediated Resilience Against Tuberculosis in an Admixed	93.855	5F30AI157385-03		52,562	-
Characterizing the Plasmodium falciparum Subpellicular Network	93.855	5F31AI172110-02 REVISED		32,808	-

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CONTROL AND ACTIVATION OF THE TUMOR NECROSIS FACTOR RECEPTORS	93.855	5R01AI150709-05 REVISED		765,832	540,530
Coordinate Regulation of Virulence in <i>Vibrio cholerae</i>	93.855	4R37AI018045-44 REVISED		96,244	-
COVID-19: Defining regulators of immunity to acute infection using CRISPR screens	93.855	3U19AI133524-05S1 REVISED		7,502	7,502
COVID-19: Statistical and Data Management Center (SDMC), AIDS Clinical Trials Group	93.855	5UM1AI068634-18		-	-
Cytotoxic T Cell Mediated Immunity to Chlamydia	93.855	3R01AI039558-27S1		651,582	-
Deep sequencing of pathogens to precisely define transmission networks using rare variants	93.855	5R01AI128344-05 REVISED		324,080	27,855
Defining functional domains of a <i>P. aeruginosa</i> efflux pump using periplasmic nanobodies	93.855	5R21AI153471-02 REVISED		127,265	-
Defining regulators of immunity to acute infection using CRISPR screens	93.855	3U19AI133524-05S1 REVISED		259,169	259,169
Detection of transrenal <i>Mycobacterium tuberculosis</i> DNA in urine	93.855	5R03AI153554-02 REVISED		670	-
Determining the interactions between mosquito oogenesis and <i>Plasmodium falciparum</i> survival and	93.855	5R01AI153404-05		828,337	-
Developing a Barcoded Malaria Parasite Panel to Assess Broadly Neutralizing Antibodies	93.855	5R21AI171658-02		157,611	-
Discovery and characterization of new bacterial cell wall targets and inhibitors to treat resistant infections	93.855	5R01AI148752-05 REVISED		831,994	-
Discovery through chemical synthesis of antibiotics effective against modern bacterial pathogens	93.855	5R01AI168228-03 REVISED		754,438	-
Dissecting virulence gene regulatory pathways in <i>M. tuberculosis</i> clinical isolates	93.855	1F32AI174653-01A1 REVISED		35,519	-
Dynamic Strategies for the clinical management of HIV disease	93.855	5R37AI102634-10		(15,053)	-
Dynamic Strategies for the clinical management of HIV disease	93.855	5R37AI102634-12		947,153	37,538
Elucidating ligand-receptor interactions required for <i>Plasmodium vivax</i> blood-stage infection	93.855	5R01AI140751-05		65,021	-
Elucidating the Structural Requirements for Next-Gen Glycoconjugate Vaccines	93.855	5R01AI148273-05 REVISED		603,452	-
Epidemiology of Infectious Diseases	93.855	5T32AI007535-24		391,390	-
Epitope focusing using structure-based immunogen design approaches	93.855	5F30AI160908-02 REVISED		11,398	-
Evaluating host-directed therapeutics against blood-stage malaria parasites	93.855	5R21AI166478-02		247,963	-
Expansion of research and mentoring opportunities to reduce the burden of maternal and pediatric HIV in	93.855	5K24AI131924-07		176,287	14,037
Expansion of research and mentoring to improve birth outcomes and treatment outcomes among HIV-affected children in Botswana	93.855	5K24AI131924-05 REVISED		(15,080)	(15,080)
Exploiting membrane targets to overcome antibiotic resistance	93.855	5U19AI158028-03		2,735,938	-
Exploring the potential to improve azole efficacy against <i>Trypanosoma cruzi</i> by targeting glutamine metabolism	93.855	5R21AI166974-02 REVISED		10,894	-
Exploring the roles of acquired immunity and functional constraint in sculpting malaria antigenic diversity in a longitudinal cohort	93.855	5R01AI141544-05 REVISED		161,946	88,084
Fibroblast-mediated inflammatory resolution of rheumatoid arthritis	93.855	5F30AI174699-02 REVISED		40,738	-

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Follicular helper T cells as drivers of epitope spreading	93.855	5F30AI160909-03		52,562	-
From bench to bednet: Developing novel mitochondrial inhibitors for killing Plasmodium in the malaria mosquito	93.855	1R01AI179949-01REVISED		138,240	-
Functional characterization of the Plasmodium falciparum invasion ligand bindometion of the Plasmodium falciparum invasion ligand bindome	93.855	1R21AI180609-01		9,853	-
Genetic Analysis of Toxinogenesis in Vibrio Cholerae	93.855	5R37AI018045-43		658,392	-
Genetic modulators of serum resistance in Neisseria gonorrhoeae	93.855	5R21AI172369-02		196,900	13,370
Genetically-encoded fluorescent RNA sensors for measuring transport of antibiotics into the cytoplasm of Gram-negative pathogens and development of efflux pump inhibitors	93.855	5R01AI136789-05		16,529	-
Genome-wide pooled CRISPR cell screening for the deer tick Ixodes scapularis, a vector of Lyme and	93.855	5R21AI168592-02		284,361	111,130
Genomics approaches to elucidating pathways to antibiotic resistance in Neisseria gonorrhoeae	93.855	5R01AI132606-07		454,988	-
Harvard University Center for AIDS Research	93.855	3P30AI060354-20S1 REVISED		4,958,696	3,273,528
Hepatic survival and population dynamics of extraintestinal pathogenic Escherichia coli	93.855	5F31AI156949-03 REVISED		30,633	-
HLA risk alleles cause Type 1 Diabetes by modifying the selection of T cell receptors that recognize pancreatic beta cell antigens	93.855	1F30AI176724-01A1 REVISED		20,686	-
Identification and analysis of compensatory mutations that support the evolution of antibiotic resistance in	93.855	5R01AI153521-05		832,270	591,301
Identification and characterization of a comprehensive set of factors required for sporulation and germination in Bacillus anthracis	93.855	5R21AI171308-02 REVISED		149,000	-
Identifying Chlamydia trachomatis factors that mediate PD-L1 upregulation	93.855	5R21AI178272-02		360,586	-
Illuminating the immune system's genomic dark matter: functionally annotating the hidden translome	93.855	1DP2AI169979-01		620,959	-
ImmGen: Gene Expression and Regulation in Immune Cells	93.855	5R24AI072073-15		12,868	-
ImmGen: Gene Expression and Regulation in Immune Cells	93.855	5R24AI072073-17		2,088,006	196,652
Infant blood epigenome and risks of IgE sensitization, obesity, and asthma: MARC-35/43 cohorts	93.855	5R01AI148338-04		910,545	671,389
Integrated Development and Discovery of Diagnostics for Drug Resistant Tuberculosis	93.855	5U19AI142793-05 REVISED		2,261,765	739,153
Integrating protein structure and genomic data to predict antibiotic resistance in Mycobacterium tuberculosis	93.855	5F32AI161793-02 REVISED		13,038	-
Interactions between trichomonasviruses, their parasite host, and the human superhost	93.855	5F31AI176739-02		30,744	-
Intravascular Immune Surveillance by Anti-viral T Cells	93.855	5R01AI155865-04 REVISED		772,083	-
Investigating bacterial contributions to TB treatment response: a focus on in-host pathogen dynamics	93.855	3R01AI155765-04S1		790,855	392,733
Investigating the regulation of outer membrane homeostasis in Pseudomonas aeruginosa	93.855	5F32AI164630-02 REVISED		4,044	-
Linking metabolite sensing and gene expression in malaria parasites	93.855	5R21AI168806-02REVISED		124,278	-
Malaria parasite determinants of host cell tropism	93.855	5R01AI165755-03		750,379	243,885
Malaria transmission blocking through mosquito contact with treated surfaces	93.855	5R01AI148646-05 REVISED		621,819	-
Mechanisms regulating vimentin-dependent invasion of the brain by Listeria monocytogenes	93.855	5R01AI146102-04		94,294	67,500
Molecular basis of antimalarial drug resistance in Plasmodium vivax	93.855	5R01AI168163-03 REVISED		717,373	-

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Molecular Basis of Spore Germination	93.855	5R01AI164647-03		865,351	-
Molecular Basis of Viral Infectivity	93.855	5T32AI007245-40		427,292	-
Molecular biology of trichomonasviruses	93.855	5R01AI132445-05		17,086	-
Molecular mechanisms of inherent drug resistance in non-tuberculous mycobacteria	93.855	5R01AI179642-02		419,229	149,853
Neutrophil Dynamics in Nasal Mucosa	93.855	5R01AI175379-02 REVISED		782,962	-
NK killing of coronavirus-infected cells	93.855	5F31AI176618-02 REVISED		38,743	-
Nuclear Sensing of Herpesviral DNA	93.855	5R01AI106934-08		39,393	-
Optimal targeting for individual and population-level TB prevention	93.855	5R01AI146555-05 REVISED		681,844	93,834
Outer Membrane Biogenesis: New Antibiotic Targets	93.855	2R01AI081059-16A1		63,180	-
Outer Membrane Biogenesis: New Antibiotic Targets	93.855	5R01AI081059-15		111,636	-
Peptidoglycan Biogenesis in Escherichia Coli	93.855	5R01AI083365-15 REVISED		581,197	41,620
Pinpointing how single-cell states affect genetic regulation of HLA expression in autoimmune diseases	93.855	5F30AI172238-03		52,694	-
Proline homeostasis: a novel mediator of drug tolerance in Plasmodium falciparum	93.855	5R01AI143723-05		647,695	273,931
Receptor-Guided Discovery of Environmental Phages	93.855	1F31AI178993-01A1 REVISED		6,786	-
Recording the role of persisters in infection relapse	93.855	5R21AI168524-02 REVISED		231,961	-
Release of Extracellular DNA during Biofilm Formation in Staphylococcus aureus	93.855	5R01AI139011-05		(57,061)	-
Ribosome structure determination from Apicomplexan parasites	93.855	5R21AI178196-02		272,622	-
RNA polymerase and oxidative stress mediate ceftriaxone resistance in Neisseria gonorrhoeae	93.855	5F30AI160911-03		48,170	-
SDMC - IMPAACT Leadership Group	93.855	5UM1AI068616-		12,580,718	6,224,934
SEAL (Stopping Atopic dermatitis and Allergy) Study: Prevent allergy by enhancing the skin barrier	93.855	3U01AI147462-05S1		1,279,506	696,190
Spatiotemporal Regulation of Protrusion Dynamics During Intracellular Bacterial Dissemination	93.855	5R21AI173602-02		229,180	-
Specification of Treg cells: learning from FoxP3 deficiencies	93.855	5R01AI165697-03		564,995	-
Staphylococcus aureus induced Itch and neuro-immune signaling in skin infections	93.855	5R01AI168005-02		738,348	221,044
Statistical and Data Management Center (SDMC), AIDS Clinical Trials Group	93.855	5UM1AI068634-18		19,155,094	9,507,740
Statistical Methods for Improving Real-Time Public Health Surveillance and Integrated Outbreak	93.855	5F31AI172187-02		36,180	-
Strengthening evidence on optimal multidrug-resistant tuberculosis treatment regimens through	93.855	5R01AI146095-04		792,332	327,730
Structural understanding of the HIV-1 reverse transcription initiation process	93.855	5R01AI167684-03		543,148	211,714
Structure and Function of Tetraspanin Complexes	93.855	5R01AI172846-03		788,105	41,096
Structure-based design of neuraminidase immunogens for next-generation influenza vaccines	93.855	1F30AI181355-01 REVISED		20,686	-
Studies on the Biological Mechanisms of Antibiotics	93.855	5R01AI149778-21 REVISED		451,849	-
T Cell Costimulatory Pathways: Functions and Interactions	93.855	5P01AI056299-20		2,642,990	1,390,971
Targeting Membrane Transport Steps in Cell Envelope Assembly	93.855	5R01AI153358-05		670,358	-
The Dynamics of DNA in Salmonella Persists in Macrophages	93.855	5F31AI176589-02 REVISED		35,448	-
The Graduate Program in Tropical Infectious Diseases (GPITID)	93.855	5T32AI049928-20		200,589	-

The accompanying notes are an integral part of this schedule.

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The molecular mechanism of Aire	93.855	2R01AI088204-11		266,853	-
The molecular mechanism of Aire	93.855	5R01AI088204-10 REVISED		25,461	-
The physiological activation and consequences of Toxin-Antitoxin systems in Salmonella	93.855	5R01AI155552-04		547,686	-
Treg cell diversity and homeostatic control	93.855	5R01AI150686-05 REVISED		363,277	-
Trial of Zinc Supplements for Young Infants with Clinical Severe Infection in Tanzania	93.855	5R01AI175348-02 REVISED		222,033	118,291
Understanding the mediating role of adherence in risk factors for unfavorable outcomes from tuberculosis treatment	93.855	1R03AI180576-01 REVISED		10,047	-
Understanding the Regulation and Biological Roles of Peptidoglycan Hydrolases in Staphylococcus aureus	93.855	5F30AI156972-03 REVISED		26,818	-
Validating a potential interaction between error-prone polymerases and SSB as a therapeutic target for	93.855	5R03AI159062-02		(1,019)	-
Viral and host mechanisms that tilt the HSV lytic/latent balance	93.855	5P01AI098681-10		2,673,501	703,066
Total for Assistance Listing Number 93.855				83,095,270	28,782,901
Mechanistic Analysis of the Ubiquitin-Proteasome System	93.859	5R35GM127032-07 REVISED		593,828	-
The genetic control of neuronal number and behavior	93.859	5K99GM146243-02 REVISED		117,167	-
A novel and simple mechanism by which cells can sense enzymatic flux	93.859	5R01GM148497-02 REVISED		417,291	-
A system for long-term high-resolution 3D tracking of movement kinematics in freely behaving animals	93.859	5R01GM136972-04 REVISED		427,623	125,489
Advancing Multiplexed Isobaric Tag-based Strategies for Proteome Profiling	93.859	5R01GM132129-05		298,007	-
Aggression in Drosophila: circuitry involved; learning and memory accompanying aggression; and establishing the circuitry of high-level aggression in the brain	93.859	5R35GM118137-07 - REVISED		117,236	-
An all-in-one web server for RNA structure prediction using evolutionary information	93.859	5R21GM148902-02 REVISED		131,951	36,822
Analysis of conserved eukaryotic transcription elongation factors	93.859	5R01GM135251-04 REVISED		323,172	-
Anion Abstraction From Hypervalent Silanes: Enantioselective Synthesis of Compounds Bearing Carbon and Silicon Stereogenic Centers	93.859	5F32GM143919-03		70,378	-
Assembly and Maintenance of the Bacterial Cell Envelope	93.859	5F32GM146400-03 REVISED		71,457	-
Asymmetric Nucleophilic Aromatic Substitution Enabled by Hydrogen-Bonding Catalysis	93.859	5F32GM136042-03 (REVISED)		1,442	-
BIOPHYSICAL CUES SHAPING MACROPHAGE AND T-CELL FUNCTIONS	93.859	1K99GM151568-01		89,071	-
Biophysical foundations of evolutionary dynamics	93.859	5R35GM139571-04		580,755	-
Catalytically Generated Amidyl Radicals for Site-Selective Intermolecular C-H Functionalization	93.859	5F32GM147975-02 REVISED		70,570	-
Cell and Chemical Biology of Microtubules	93.859	2R35GM131753-06		76,591	-
Cell and Chemical Biology of Microtubules	93.859	3R35GM131753-05S1		911,333	-

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Characterization of silencer element-associated chromatin	93.859	5F31GM145107-03 REVISED		34,668	-
Characterization of the TBCEL-dependent Tubulin Degradation Mechanism	93.859	5F31GM142156-03		35,136	-
Chiral Complexes Designed to Catalyzed Organic Reactions	93.859	5R01GM043214-33 (REVISED)		24,352	-
Chromosome Dynamics in Bacillus Subtills	93.859	5R01GM086466-12		(1,169)	-
Chromosome organization and function in time and space: meiosis, mitosis and E.coli	93.859	5R35GM136322-05 REVISED		1,020,316	-
Complementary Activation of Hydroxylamine Derivatives by Hydrogen-Bond Donor Catalysts to Enable Enantioselective Nitrogen-Atom Transfer Processes	93.859	5F32GM137576-03 (REVISED)		(132)	-
Continuing Education for Structural Biology Mentors	93.859	1R25GM151273-01		251,252	35,875
Deciphering the logic of glycolipid signaling at the host-microbiome interface	93.859	5R00GM130964-05		226,680	-
Decoding chromosome structure with multiplexed super-resolution microscopy	93.859	5R01GM124401-04		(29,520)	-
Decoding ribosome-triggered quality control mechanisms	93.859	1DP2GM137415-01		596,810	-
Defining OGT's Essential Functions to Guide Therapeutic Approaches	93.859	5R01GM094263-12 REVISED		388,360	-
Determine the mechanism of recognition of ubiquitin configurations by the 26S proteasome	93.859	5R01GM134064-05		386,562	-
Development, Elucidation, and Application of New Principles in Stereoselective Catalysis	93.859	5R35GM149244-02 REVISED		801,699	-
Discovery of structural RNAs involved in human health and disease	93.859	5R01GM144423-02		354,865	-
Dissecting metabolic control by cytosolic-mitochondrial NAD compartmentalization	93.859	5R35GM151097-02		541,082	-
Diversity in Biomedical Sciences Via Personalized Research and Education Programs for Post-DNA-corrallated nanodiscs for study of large membrane proteins and their complexes	93.859	5R25GM109436-08		467,833	-
Drosophila Transgenic RNAi Resource Project	93.859	5R01GM131401-04		46,870	-
	93.859	5R01GM084947-12 REVISED		12,113	-
Dynamic mechanisms of transcriptional coactivator function in Notch signaling	93.859	5K99GM144750-02 REVISED		68,087	-
Dynamic regulatory mechanisms of robust pattern formation in the neural tube	93.859	5R01GM107733-08		(5,680)	-
Dynamics, Regulation and Function of p53 in Single Cells	93.859	5R35GM139572-04 REVISED		1,136,994	-
Elucidating physiology of dormant bacteria to combat antibiotic persistence	93.859	3R35GM137895-04S1		456,073	-
Elucidating the Functional Role of Post-translational Aminoacylation in Chromatin Regulation	93.859	5F31GM143896-03 REVISED		33,938	-
Engineering fluid dynamics of cryo-plunging for improved vitrification	93.859	5R21GM146127-02		225,345	-
Epigenetic Inheritance of Heterochromatin	93.859	5R01GM072805-19 REVISED		384,114	-
Evolutionary Tradeoffs in Antibiotic Resistance	93.859	5R35GM133700-05		426,188	-
Federated and transfer learning methods for cross-ancestry and cross-phenotype integration of genomic	93.859	5R01GM148494-02		454,669	45,304
Feedback Control of the Cell Cycle	93.859	5R01GM043987-32		409,197	-
Functional genomics resources for the Drosophila and broader research communities	93.859	5P41GM132087-05 REVISED		1,478,917	-
Furshpan and Potter Native American High School Summer Program	93.859	5R25GM129830-05		257,549	-
Gene targeting driven natural product discovery and biosynthetic pathway elucidation in human pathogen	93.859	5F32GM151795-02		71,411	-

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Genome-wide Mapping of Ribosome Occupancies with Inhibitor-Induced mRNA Covalent Labeling	93.859	1R21GM148899-02		188,511	-
Global control of co-transcriptional splicing	93.859	5R01GM136794-04 REVISED		685,771	-
Growth and differentiation in <i>Bacillus subtilis</i>	93.859	5R35GM145299-03		641,848	-
Harnessing intrinsic cell clocks to control growth and regeneration	93.859	5F32GM140779-02 (REVISED)		17,987	-
Harvard Chemical Biology PhD Program	93.859	5T32GM139775-03 REVISED		490,404	-
Harvard Systems Biology Graduate Program	93.859	5T32GM135014-05 REVISED		300,761	-
High-throughput disulfide and FRET scanning to reveal protein conformational ensembles in vitro and in	93.859	5K99GM141459-02		23,342	-
High-throughput optimization of genetically-encoded fluorescent biosensors	93.859	5R01GM124038-07		318,036	-
HPF-X: High-pressure freezing with buffer exchange	93.859	5R01GM146791-02		488,862	-
Human microbiome metabolites in health and disease	93.859	3R35GM128618-07S1		445,661	-
Human microbiome metabolites in health and disease	93.859	5R35GM128618-05		(342)	-
Identifying the sequences and factors that govern the fate of elongating RNAPII	93.859	5R01GM139960-04 REVISED		418,675	-
Information Integration and Energy Expenditure in Eukaryotic Gene Regulation	93.859	5R01GM122928-08		569,957	-
Information Processing by Post-translational Modification	93.859	5R01GM105375-08 REVISED		26,077	17,715
Integrating Chemical Genetic Approaches with Precision Genome Editing	93.859	1R35GM153476-01 REVISED		75,384	-
Interdisciplinary training: Statistical Genetics/Genomics and Computational Biology	93.859	5T32GM135117-04		420,772	-
Investigating DNA end-processing during non-homologous end joining	93.859	1F32GM143844-01A1 REVISED		138	-
Investigating how bHLH circuits integrate signals for cell fate decisions	93.859	5K99GM151398-02		111,128	-
Investigating molecular mechanisms and cellular functions of genomic imprinting	93.859	5R35GM146921-03		422,093	-
Investigating neofunctionalized alpha-carbonic anhydrases as an emerging class of biosynthetic enzyme	93.859	5R35GM150908-02		466,010	-
Joint Program in Molecules, Cells, and Organisms	93.859	5T32GM135143-05 REVISED		586,572	-
Limits and trade-offs of feedback control	93.859	2R01GM081563-10		505,923	-
Linking a prominent gut microbiome-derived metabolite to host proteostasis	93.859	5F32GM149112-02		61,283	-
Macrophage-mediated regulation of inflammation and tissue repair	93.859	5R35GM150816-02		475,386	-
Mapping Structure-Activity Relationships of Chemical Inhibitors via Genome- Editing	93.859	1DP2GM137494-01		305,533	-
Measuring and modeling the dynamics of patterning in human stem cells	93.859	5R01GM131105-06		586,688	-
Mechanism of Divalent Metal Transport by Nramp-Family Transporters	93.859	5R01GM120996-08 REVISED		342,228	-
Mechanism of yeast gene regulation	93.859	5R35GM131801-05 REVISED		801,588	-
Mechanisms of Heterochromatic Transcriptional Gene Silencing	93.859	1F31GM150195-01A1 REVISED		18,347	-
Mechanistic dissection of eukaryotic protein biogenesis and degradation pathways	93.859	5R35GM127136-07		500,773	-

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Mechanoregulation of Ciliary Motility	93.859	5R01GM141109-04 REVISED		513,413	-
Medical Scientist Training Program	93.859	3T32GM144273-03S1 REVISED		2,788,328	-
Microbial Adaptation and the Statistics of Epistasis and Pleiotropy	93.859	5R01GM104239-12		344,700	-
Mitochondrial coordination of gene expression across complex cellular states using mitochondria profiling	93.859	5F32GM139244-03		14,567	-
Molecular Biophysics Training Grant	93.859	5T32GM008313-35		604,209	-
Molecular mechanisms of cell fate determinant assembly	93.859	5R01GM143611-03 REVISED		513,735	-
Molecular Mechanisms of Integrative Signal Transduction	93.859	5R35GM142697-04		438,006	-
Molecular tuning of sensory systems in octopus	93.859	5F32GM148163-03		69,440	-
Molecular, Cellular, and Developmental Mechanisms	93.859	5T32GM145407-03		997,018	-
mRNA Capping Enzyme	93.859	5R01GM056663-24 REVISED		354,737	2,140
Multi-nuclear Iron Clusters as Biomimics of Nitrogenase Enzyme Metallocofactors	93.859	5F32GM145088-02		70,411	-
New eras of catalysis: Towards the development of pseudotransition metal organocatalysts for metal-	93.859	5F32GM151794-02		59,477	-
New Sample Multiplexing Technologies to Identify Chemical Probes and Illuminate Ubiquitin Biology	93.859	5R01GM067945-21		581,544	-
Non-Coding RNAs in Gene Regulation, Genome Defense, and Epigenetic Inheritance	93.859	5R35GM148206-02		775,673	-
Novel strategies for high-specific multiplexed imaging of genomic interactions by signal amplification	93.859	3F32GM140783- 01A1S1 REVISED		55,697	-
Photoelectrocatalytic Trifluoromethylation of Arenes via Trifluoroacetate Decarboxylation	93.859	1F32GM153089-01 REVISED		17,059	-
Prions in the bacterial domain of life	93.859	5R35GM136247-05 REVISED		442,541	-
Probing the specificity and activity of the metazoan Integrator complex	93.859	5R01GM134539-04		196,191	41,558
Program in Genetics and Genomics PhD Training Grant	93.859	5T32GM141745-04		493,985	-
Protein Transport Across Membranes	93.859	5R01GM052586-30		340,297	-
Regulation of Proteasome Activity	93.859	5R35GM145246-02		560,356	-
Regulation of translesion synthesis by the bacterial replisome	93.859	5R01GM114065-09 REVISED		392,921	-
RNA Processing Machines in Biology and Disease	93.859	5R35GM122524-07		13,743	-
Robust, Generalizable, and Fair Machine Learning Models for Biomedicine	93.859	5R35GM142879-04		337,354	-
Selective Oxidation of Primary C-H Bonds Using Late-Transition-Metal-Oxo Catalysts	93.859	5F32GM145065-03 REVISED		74,352	-
Sending and receiving Hedgehog and Wnt signals	93.859	5R01GM122920-06 REVISED		621,850	-
Small regulatory RNA functions in the nucleus	93.859	5R01GM088289-13		(17,235)	-
Stem cell regulation during development and whole-body regeneration	93.859	1R35GM153252-01		84,863	-
Stereoselective Transition Metal Catalysis Enabled by Hydrogen-Bond Donor Mediated Electrophile	93.859	1F32GM149151-01		58,046	-
Structural characterization of single, double and triple-headed axonemal dyneins	93.859	5R01GM143183-03		347,951	-
Structural understanding of 7SK-snRNP mediated transcriptional regulation	93.859	5R01GM144374-02		403,582	55,436
Structure-Function Studies of Ribonucleotide Reductase	93.859	5R01GM047274-32 REVISED		381,721	-

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Synaptonemal complex assembly and function in meiosis	93.859	3R01GM072551-17S1 REVISED		(7,355)	-
Synaptonemal complex assembly and function in meiosis	93.859	3R01GM072551- 18A1S1		299,044	-
Systematic elucidation of allele specific proteome at Imprint Control Regions	93.859	5R01GM135377-05 REVISED		419,227	-
The biosynthesis of N–N bond-containing natural products	93.859	5R01GM132564-04 (REVISED)		326,719	-
The dynamics and underlying mechanisms controlling cell size and canonical Wnt signaling	93.859	3R35GM145248-02S1		821,349	-
The genetics and genomics of reinforcement	93.859	5R35GM142742-04		371,537	-
The origin, the function and the phenotypic impact of human alleles	93.859	2R35GM127131-07		748,429	-
The origin, the function and the phenotypic impact of human alleles	93.859	5R35GM127131-06 REVISED		316,004	-
The RNA polymerase II transcription initiation complex	93.859	5R01GM046498-33		489,895	-
Training in Pharmacological Sciences	93.859	5T32GM132089-05		418,124	-
Transcriptional Activator Complex of the Mammalian Circadian Clock	93.859	5R01GM129275-04		416,551	-
Transducing Hedgehog signals across the plasma membrane	93.859	5R01GM135262-04		492,149	-
Trapping reactive intermediates and their application towards catalysis	93.859	5R01GM145752-03		463,987	-
Uncovering the substrate recognition mechanisms of the E3 ligase adaptor cereblon	93.859	5R01GM141406-03		203,345	-
Understanding the link between sleep deprivation and oxidative stress	93.859	5R01GM138872-04		427,976	-
Using a new regenerative model system to elucidate mechanisms for stem cell regulation	93.859	5R35GM128817-05 REVISED		27,543	-
Visualizing DNA break repair: single-molecule studies of non-homologous end joining	93.859	5R01GM115487-08		343,264	-
Total for Assistance Listing Number 93.859				44,656,167	360,339
A child's best friend: Behavioral, neural, and endocrinological mechanisms of longitudinal social bond formation and stress buffering effects in children and pet dogs	93.865	5F32HD111327-02		66,891	-
A population-based online study of the transition of young adults with perinatal HIV infection to adult	93.865	5R01HD089853-		(3,191)	-
Bidirectional Influences Between Adolescent Social Media Use and Mental Health	93.865	1R21HD115354-01 REVISED		66,029	18,512
Botswana Birth Outcomes Surveillance Extension	93.865	5R01HD095766-		283,005	177,821
Closing Research Gaps in Antiretroviral Treatment for Pregnant Women and Infants Living with HIV	93.865	5P01HD107670-03		1,668,329	710,332
Comparative Safety of Non-Insulin Agents in Pregnant Women with Pregestational Diabetes	93.865	5R01HD097778-05		444,239	126,783
Determining lineage decisions and gene regulatory networks governing the generation of key progenitor cell types during early human brain development	93.865	5R01HD100036-05 REVISED		886,845	-
Development of a Modular Soft Exosuit Platform Suitable for Community-Based Neurorehabilitation	93.865	5R01HD088619-06 (REVISED)		305,111	32,335
Developmental mechanisms of posterior axis termination in vertebrates	93.865	5F31HD104316-03		32,895	-
Does neurotransmitter plasticity of para-serotonergic neurons augment autoresuscitation following	93.865	5R01HD100823-04		583,937	102,077
Employing biologics to probe GPCR signaling in maternal and fetal health	93.865	5K99HD110612-02		101,970	-
Engaging and Supporting Fathers: A Parenting Intervention to Improve Early Child Development in	93.865	5K99HD105984-02		3,269	-
Enhancing Assisted Reproductive Technologies with Deep Learning and Data Visualization	93.865	5R01HD104969-04 REVISED		375,480	16,201

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Examining distinct and shared mechanisms underlying arithmetic and reading development through behavioral and neural measures: a longitudinal investigation	93.865	5R01HD103358-04		914,385	27,377
Health Outcomes around Pregnancy and Exposure to HIV/ARV (HOPE): Extending the Reach of PHACS to Examine Women's Health	93.865	5R01HD101351-04 REVISED		2,523,869	1,724,915
Human iPSC-derived ovarian follicles as a model of female reproduction	93.865	5F31HD108898-02		35,887	-
IDENTIFYING ROADBLOCKS TO LIMB REGENERATION	93.865	5R01HD095494-05		167,520	-
Illuminating the distribution of extreme evolutionary constraint in the human genome from fetal demise to severe developmental disorders	93.865	5F31HD111109-02 REVISED		43,659	-
Intergenerational impact of maternal trauma history on preschoolers' behavioral health outcomes: Assessing links with caregiving sensitivity and DNA methylation	93.865	5R01HD102342-04		903,380	225,106
Leveraging Causal Inference and Machine Learning Methods to Advance Evidence-Based Maternal Care and Improve Newborn Health Outcomes	93.865	5F30HD111284-02 REVISED		40,237	-
Life history of the menstruating uterus	93.865	1DP2HD111708-01 (REVISED)		506,718	-
Linguistic, Social, and Cognitive Determinants of Early Work Learning	93.865	5R01HD107285-03		470,054	-
Long-term health consequences of birth by cesarean section	93.865	5R01HD093761-05 REVISED		202,883	99,388
Mapping the signaling landscape of vertebrate development at single cell resolution	93.865	5R01HD096755-05		19,305	-
Maternal Exposure to Childhood Abuse and Disparities in Offspring Neurodevelopment: Identifying Mechanisms	93.865	5R01HD094725-05 REVISED		711,286	350,199
Mechanisms modulating cell identity in regenerative mammalian epithelia	93.865	5R00HD101021-05 (REVISED)		69,057	-
mHealth-Community Health Worker tool for comprehensive post-cesarean follow-up in rural Rwanda	93.865	4R33HD103052-03 REVISED		75,371	5,758
mHealth-Community Health Worker tool for comprehensive post-cesarean follow-up in rural Rwanda	93.865	5R21HD103052-02 REVISED		88,040	41,938
Microcircuits underlying murine parental behavior	93.865	5R01HD082131-09		296,675	-
Neurocognitive Mechanisms of Positive Intervention Response in Reading Disability	93.865	1F31HD111139-01A1 REVISED		26,220	-
Non-coding RNA regulation of neuronal protein translation and appetite control	93.865	1F31HD113399-01		35,137	-
Pediatric HIV/AIDS Cohort Study (PHACS) 2020	93.865	5P01HD103133-		16,497,592	11,324,099
Pediatric HIV/AIDS Cohort Study (PHACS) Data and Operations Center	93.865	5U01HD052102-15 REVISED		(1,877)	(1,877)
Roles of body-wide injury responses in axolotl limb regeneration	93.865	1R01HD115272-01		107,807	-
Sex, Physiological State, and Genetic Background Dependent Molecular Characterization of Circuits	93.865	5K99HD108801-02		98,415	-
Signals and mechanical forces controlling radial gut morphogenesis	93.865	5R01HD087234-08		524,363	-
Subcellular investigation of molecular programs responsible for corticospinal neuron development and	93.865	5F30HD113352-02		35,680	-
Systems Analysis of cell type differentiation in Xenopus development	93.865	3R01HD073104-10S1		(14,695)	-
The Role of Hypothalamic Pituitary - Adrenal Axis Dysregulation in Preterm Birth	93.865	5R21HD102822-02 REVISED		8,604	-
The role of neurovascular interactions in the development and regulation of the blood-brain barrier	93.865	5K99HD103911-02 REVISED		47,199	-
The Training Program in Reproductive, Perinatal, and Pediatric Life Course Epidemiology	93.865	5T32HD104612-04		296,705	-

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Total for Assistance Listing Number 93.865				29,544,285	14,980,964
A National Analysis of the Extent and Value of Medicare Advantage Physician Networks	93.866	5R01AG068122-03		298,527	85,689
A novel method to identify regulators of biological aging based on high-throughput sequencing of epigenetic clocks.	93.866	4K00AG073499-03 (REVISED)		57,630	-
A Research Mentoring Program in Geriatric Rehabilitative Care	93.866	5K24AG069176-10		143,318	21,951
Aging Memory	93.866	5R01AG008441-30 REVISED		206,198	-
Alteration of sleep and cortical parvalbumin interneurons in mouse model of Alzheimer's disease	93.866	5K01AG068366-04		121,053	-
Apoptotic Regulation and Neuroinflammation in Alzheimer's Disease	93.866	1F32AG077861-01		10,259	-
Assessment of Health-Related Work Capacity to Improve Independence of Older Adults	93.866	5R01AG046290-09		654,789	395,729
Behavioral, molecular, and functional dissection of corticospinal neurons in motor performance deficits of physiological and pathological aging	93.866	5F30AG074598-02		52,694	-
Cell Non-autonomous Regulation of Aging via Neuronal TORC1	93.866	5R01AG059595-05		133,848	-
Cellular reprogramming to promote longevity, resilience and repair in motor unit degeneration	93.866	4K00AG079815-02		92,289	-
Characterizing the landscape of cell-type specific changes associated with Alzheimer's disease before	93.866	5F30AG069446-04		50,300	-
Child and adult Metal exposures, gene expression and neuropathologically confirmed Alzheimer's Disease	93.866	1R56AG083897-01REVISED		332,566	182,743
Circulating Plasma Metabolites, Lifestyle Factors, and Mortality Risk	93.866	5R21AG070375-02 REVISED		50,893	5,675
Cis proline directed proteotoxicity in the early development and therapy of traumatic brain injury and	93.866	5K99AG076739-02		114,329	-
Cognitive Function, Alzheimer's Disease and Related Disorders in the HAALSI Cohort	93.866	5R01AG054066-05		871,351	235,077
Comparing hospitalization rates, outcomes, and treatment intensity for elderly patients across OECD countries	93.866	5R01AG058878-05 REVISED		340,498	60,735
Controlling oscillations to treat Alzheimers disease targeting the basal forebrain parvalbumin system	93.866	5K99AG066819-02 REVISED		36,394	-
COVID-19 and the Health and Wellbeing of Vulnerable Service Sector Workers across the Life Course	93.866	1R56AG081273-01		492,643	30,156
Deciding about Dialysis: Improving Decision-Making Among Older Adults with ESRD	93.866	3K23AG049088-05S1		6,480	-
Defining the pathogenic relationship of TDP-43 inclusions and cytoplasmic double stranded RNA in AD and FTD	93.866	1RF1AG078377-01 REVISED		996,143	394,447
Direct and Indirect Effects of GDF11 in the Aging Central Nervous System	93.866	5R01AG072086-05		775,830	-
Disrupted Communication Between Blood Cells and Non-blood Organs as a Mediator of Aging	93.866	1U01AG086163-01		11,951	-
Dissecting the modulatory functions of interleukin-17 in Alzheimer's Disease	93.866	1RF1AG080738-01		1,130,837	441,357
Effects of Job Quality in the Service Sector on Health-Related Outcomes Across the Life Course	93.866	5R01AG066898-04 REVISED		728,108	74,079
Epidemiologic, imaging and pathological studies of the role of blood pressure variability in dementia	93.866	5R00AG071742-04		320,071	-
Epigenetic Reprogramming to Counteract Neuronal Aging and Degeneration	93.866	3K99AG068303-02S1 REVISED		(1,156)	-
Exploration of MRI measures of neurodegeneration within individuals over short intervals	93.866	5R01AG067420-05 REVISED		434,341	65,677
Health and Aging in Africa: Longitudinal Studies of an INDEPTH Community	93.866	5P01AG041710-08 REVISED		124,897	109,238
Health, Aging and Dementia in South Africa: A Longitudinal Study (HAALSI)	93.866	2P01AG041710-09		3,259,513	1,422,953

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Identifying Targets for Interventions to Improve Functional Ability to Work over the Life Course	93.866	5R01AG078301-02 REVISED		268,467	14,274
Impact of social cohesion on functional recovery after earthquake and tsunami	93.866	5R01AG042463-10 REVISED		400,595	94,383
Improving Healthcare Quality and Equity For Older Adults with HIV Under Value-Based Care Models	93.866	5R01AG081151-02		282,537	120,962
Improving Medicare in an Era of Change	93.866	5P01AG032952-15 REVISED		2,252,249	211,361
Improving the quality of care provided through bundled payments for patients with Alzheimer's Disease or Other Forms of Dementia or Frailty	93.866	5R01AG060935-03 Revised		442,020	101,484
Intimate Partner Violence and Dementia Risk: Applying Lifecourse and Gender Analysis	93.866	5F31AG080869-02 REVISED		32,093	-
Investigating GDF11 and MSTN as candidate circulating geronic factors	93.866	5R01AG057428-04 (REVISED)		(9,646)	-
MD-PhD Training Program in Aging and the Social/Behavioral Sciences	93.866	5T32AG051108-09 REVISED		169,681	-
Mechanisms of Aging Regulation by Neuronal mTORC1 in C. elegans	93.866	5F31AG076296-03		33,926	-
Mechanisms of stem cell aging that contribute to clonal outgrowth in head and neck tissues	93.866	5F32AG071208-03		54,443	-
Mechanisms Specific to the Beneficial Effects of Dietary Restriction	93.866	5R01AG044346-10		374,556	-
miRNA Control of Synaptic Stability and Structural Plasticity	93.866	8K00AG089852-03		17,241	-
Muscle regulatory T cells in exercise and aging	93.866	5F32AG072874-03		52,514	-
National Cohort Studies of Alzheimer's Disease, Related Dementias and Air Pollution	93.866	5R01AG066793-04 REVISED		786,804	71,203
Neurobehavioral phenotyping of AD model mice using Motion Sequencing	93.866	1RF1AG073625-01		335,386	-
Novel Age-Dependent DNA Modifications	93.866	5R01AG063341-05		72,582	69,438
Nuclear transport as a molecular and cellular vulnerability in AD	93.866	1R21AG072516-01		15,176	11,644
Physician Subspecialization and the Health and Health Care of Older Americans	93.866	5R01AG076580-03		851,254	37,228
Post-Acute Care Referral and Outcomes for Patients with Alzheimer's Disease and Related Dementias	93.866	1R56AG062544-01A1 REVISED		(20,550)	-
Private Medicare Plans and Health Outcomes for Older Adults	93.866	5K01AG073583-03		35,438	-
Quality control of mislocalized membrane proteins	93.866	5R01AG073277-03 REVISED		276,746	-
Rapid Longitudinal MRI to Detect Hippocampal Neurodegeneration in Early-Stage Alzheimer's	93.866	5K00AG068432-04		68,190	-
Regulation of cortical circuit formation by subcellular compartmentalization of mRNA translation	93.866	5F32AG067661-02		535	-
Reverse Engineering of Cell Senescence	93.866	5R01AG073341-03 REVISED		745,800	-
Reversing Loss of Metabolic Homeostasis to Ameliorate Alzheimer's Disease Pathogenicity	93.866	5R01AG067106-05		508,256	-
RNA Splicing Regulation of Lipid Metabolism and Longevity in C. elegans	93.866	1F31AG077729-01A1 REVISED		10,140	-
Selective neuronal autophagy in phosphorylated tau degradation and Alzheimer's disease	93.866	5F31AG082393-02		41,766	-
Slow-wave activity as a modifier of the progression of neurodegeneration in Alzheimer's disease	93.866	1RF1AG061774-01 REVISED		(1,849)	-
Subcellular mechanisms of subtype-specific neuron vulnerability in ALS and FTD: dysregulation of synapse-localized RNA, protein, and translation in mouse models and human cortico-spinal assembloids	93.866	1RF1AG083085-01		654,790	-

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Targeting Mechanisms of Organelle Remodeling to Promote Healthy Aging	93.866	1K99AG078343-01A1		91,445	-
Targeting REST in Alzheimer's Disease	93.866	5R01AG069042-04		708,690	40,945
The confluence of extreme heat cold on the health and longevity of an Aging Population with Alzheimers and related Dementia	93.866	3RF1AG074372-01A1S1		934,060	355,909
The Longitudinal and Dynamic Effects of Food Insecurity on Cognitive Impairment and Dementia Risk	93.866	5R01AG079286-03		300,964	147,488
The role of gasdermins in microglial activation and neurodegeneration in ALS/FTD	93.866	1F32AG084174-01		49,320	-
The role of mitochondrial dysfunction in age-related disease: a human genetic approach	93.866	5F30AG074507-03 REVISED		46,827	-
The Use of Telemedicine in the Care of Nursing Home Residents with Alzheimer Disease and Related Dementias During and After the COVID-19 Pandemic	93.866	5R01AG075507-03Rev		466,146	-
Training in the Molecular Biology of Neurodegeneration and Alzheimer's Disease	93.866	5T32AG000222-30 REVISED		45,619	-
Training in the Molecular Biology of Neurodegeneration and Alzheimer's Disease	93.866	5T32AG000222-32		699,986	-
Ubiquitin-mediated proteolysis and cell cycle control	93.866	5R01AG011085-29		9,813	9,813
Ubiquitin-mediated proteolysis and cell cycle control	93.866	5R01AG011085-31		465,899	215,962
Uncovering the Human Secretome	93.866	5DP1AG058605-05		(35,870)	-
Understanding Roles for Protein Homeostasis Machinery in Aging Brain Vasculature	93.866	5F32AG079593-02		70,389	-
Using a Natural Experiment to Evaluate the Long-Term Effects of Neighborhood Deprivation on Alzheimer's Disease and Vascular Risk Factors	93.866	7R01AG063385-06REVISED		162,143	-
Using cellular co-biosis and age programmable mice to derive a global interaction map of aging	93.866	5R01AG082737-02		602,246	-
Writing and erasing O-GlcNAc on target proteins in the brain	93.866	1RF1AG081475-01		515,241	148,138
Total for Assistance Listing Number 93.866				25,730,652	5,175,738
AAV Induced Toxicity in the Eye	93.867	5R01EY029348-05		334,539	-
Cognitive and Neural Representations of Reachable Environments	93.867	5R21EY031867-02 REVISED		47,665	-
CORE GRANT FOR VISION RESEARCH	93.867	2P30EY012196-26		594,637	111,382
CORE GRANT FOR VISION RESEARCH	93.867	5P30EY012196-25 REVISED		41,703	41,703
Defining mechanisms for natural vision in the primate brain with machine learning	93.867	1DP2EY035176-01 REVISED		466,560	-
Determination of Cone Photoreceptor Fate	93.867	5R01EY029771-05 REVISED		318,191	-
Development of domains in inferotemporal cortex	93.867	5R01EY025670-08		572,027	37,638
Elucidating Host Responses to AAV Ocular Gene Therapy Vectors	93.867	1F31EY035867-01 REVISED		21,059	-
Prohibiting Cell Death in Human Keratocytes: New Insights for Non-surgical Keratoconus Treatment	93.867	1K99EY035260-01 REVISED		60,924	-
Protein ticker-tapes for brain-wide neural recordings	93.867	5R21EY033669-02		221,853	-
Research Training in Visual Neuroscience	93.867	5T32EY007110-35		124,951	-
Structure and Interactions of Conformational Intermediates in gamma-D Crystallin Aggregation, and Their Targeting for Cataract Prevention	93.867	5R01EY030444-05		462,251	-
The role of lineage in the temporospatial genesis of retinal bipolar cell subtypes	93.867	5K99EY034603-02		124,430	-

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The stability of visual representations in the primate ventrolateral prefrontal cortex	93.867	1F31EY034784-01A1 REVISED		27,006	-
Total for Assistance Listing Number 93.867				3,417,796	190,723
Biases introduced by filtering electronic health records for patients with complete data	93.879	5R01LM013345-04		420,321	37,120
BIC TRAIN - Biomedical Informatics COVID-19 Training	93.879	5T15LM007092-30 REVISED		451	-
Biomedical Informatics and Data Science Research Training Program (BIRT)	93.879	5T15LM007092-33		408,583	-
Methods for generalizing inferences from cluster randomized controlled trials to target populations	93.879	5R01LM013616-03 REVISED		257,476	111,304
SCH: AI-driven Flexible Electronics for Cardiac Organoid Maturation	93.879	5R01LM014465-02		326,651	52,921
Semi-supervised Approaches to Denoising Electronic Health Records Data for Risk Prediction	93.879	5R01LM013614-04 REVISED		383,052	139,975
Total for Assistance Listing Number 93.879				1,796,534	341,320
Dietary Patterns and Risk of Cardiovascular Disease	93.897	5R01HL060712-19 REVISED		5,474	3,520
Total for Assistance Listing Number 93.897				5,474	3,520
HRSA-Ryan White DRP 2023	93.924	1T22HA49957 01 00		21,746	-
Total for Assistance Listing Number 93.924				21,746	-
2/2-GEOHealth Health Effects of Selected Environmental Exposomes Across the Life CourSe (HEALS)-US	93.989	5U2RTW010108-08 REVISED		171,434	-
Ethiopia Global Infectious Diseases Training Program	93.989	5D43TW011386-05		338,640	130,334
Feasibility of a community-engaged social marketing strategy to reduce HIV-related stigma and improve	93.989	5R01TW012394-02		168,138	52,428
Identifying genetic determinants of Rotavirus Vaccine Failure in Malawian Children	93.989	5K01TW010853-05		96,060	22,907
Launching Future Leaders in Global Health (LAUNCH) Research Training Program	93.989	5D43TW010543-08 REVISED		1,390,752	127,612
Partnership for Global Health Research Training Program	93.989	5D43TW010543-05 REVISED		4,157	-
Training in HIV Genomics, Treatment, and Cure Research in Botswana	93.989	5D43TW009610-12		274,613	124,418
Training in HIV/AIDS Prevention and Treatment Research in Botswana	93.989	5D43TW009610-10		45,835	45,835
Training Tanzanian Researchers for HIV/AIDS Implementation Science	93.989	5D43TW009775-08		336,524	97,061
Total for Assistance Listing Number 93.989				2,826,153	600,595
Detection of Cryptic RNA in Extracellular Vesicles	93.RD	75N95024P00263		34,860	-
Digital storytelling to reduce the personal care product associated EDCs exposure and hormonally mediated disease risks for Black or African American Women	93.RD	No Award Number		27,955	-
Doulas as Environmental Health Educators: A Health Intervention to Reduce Endocrine Disrupting Chemical Exposure in Pregnancy and Associated Environmental Health Disparities	93.RD	No Award Number		21,209	-
Harvard School of Public Health (HSPH)/United States Population Longitudinal Data and Specialized Analytic Support: Research on energy drinks/other dietary intakes/health outcomes over time	93.RD	75F40121C00195		81,087	-
Human Organ Chip Enabled Development of Radiation Countermeasures	93.RD	75A50123D00004		3,231,424	496,659
Human Organ Chips for Radiation Countermeasure Development	93.RD	75F40119C10098		636,890	277,395
Immune Mechanisms of Protection against Mycobacterium tuberculosis Center (IMPAC-TB)	93.RD	75N93019C00071		9,423,869	7,688,915
Total for Assistance Listing Number 93.RD				13,457,294	8,462,969
Total for DHHS Direct Award Research and Development Cluster				447,554,366	118,442,745

The accompanying notes are an integral part of this schedule.

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EPA					
Improving chemical mechanisms for regional/global models in support of US air quality management: application to the GEOS-Chem model	66.509	84001401		236,071	-
Total for Assistance Listing Number 66.509				236,071	-
Total for EPA Direct Award Research and Development Cluster				236,071	-
Institute of Museum and Library Services					
Software Citation Implementation: Action Plan Development	45.312	LG-246387-OLS-20		15,853	-
Total for Assistance Listing Number 45.312				15,853	-
Total for Institute of Museum and Library Services Direct Award Research and Development				15,853	-
NASA					
Improved understanding of oxygenated volatile organic compounds (OVOCs) in polluted and remote atmospheres using KORUS-AQ and ATom data: implications for interpreting satellite observations of forma	43.001	80NSSC21K1443		110,724	-
Longwave and shortwave stratospheric aerosol radiative forcing from models and satellite observations	43.001	80NSSC23K1001		40,676	-
21-XRP21-0010; MINERVA: A Dedicated, Global, Precise Radial Velocity Machine for Follow-up	43.001	80NSSC22K0233		271,475	155,701
A Homogeneous, Global Analysis of all Kepler and K2 Planets	43.001	80NSSC19K1014		103,145	-
A New Metric of Stratospheric Mixing from Trace Gas Interrelationships	43.001	80NSSC23K1005		111,225	-
Application of continuous ground-based remote sensing to analysis of OCO-2/3 XCO2 and SIF data in	43.001	80NSSC21K1069		44,425	-
Aura Science Team activities and GEOS-Chem support	43.001	80NSSC23K0926		127,595	-
Ca, K, Nd and Mg isotopic heterogeneities in the Solar System	43.001	80NSSC20K0346		52,377	-
Combining Satellite and In Situ Trace Gas Observations to Quantify the Stratospheric Circulation	43.001	80NSSC21K0943		63,745	-
Constraining Terrestrial Biosphere Model Predictions of Current and Future Carbon Fluxes with GEDI	43.001	80NSSC21K0197		51,629	27,744
Waveform Lidar Measurements of Above-Ground Ecosystem Structure					
Continued development and application of a prototype system for exploiting satellite data to improve knowledge of methane emission fluxes with focus on North America	43.001	80NSSC21K1057		272,838	-
Cosmic Storytelling with NASA Data: Tools for Exploring Data Science	43.001	80NSSC21M0002		852,793	44,113
Decoding the Isotopic Fingerprints of Solar System Volatiles: A Laboratory Investigation of Isotopic Fractionation Chemistry in Interstellar Ice Analogs	43.001	80NSSC21K0382		124,731	-
Development and deployment of an Autonomous Biogeochemical Instrument for In Situ Studies (the	43.001	NNX17AB31G		(8,525)	-
Development of a Through Silicon Via (TSV)-enabled HREXI Detector Module (HDM)	43.001	80NSSC22K1892		378,163	57,327
Dynamics and Chemistry of the Summer Stratosphere	43.001	80NSSC19K0326		805,016	-
Fine-Tuned Search for Kilonova Emission in a Short Gamma-Ray Burst: Implications for the Progenitors, GW Sources, and r-Process Nucleosynthesis	43.001	HST-GO-15964.001-A		26,986	-
Improving sub-seasonal temperature, precipitation, and hydrological forecasts over North America	43.001	80NSSC22K1837		272,954	-
Knitting Together the Milky Way: An Integrated Model of the Galaxy's Stars, Gas, and Dust	43.001	80NSSC21K0634		117,810	-
Laboratory Kinetics and Spectroscopic Studies of Halogens and Nitrogen Oxides in Support of the NASA	43.001	80NSSC18K1063		88	-
Laboratory Kinetics, Photochemistry, and Data Evaluation in Support of the NASA Data Panel	43.001	80NSSC21K1052		100,111	-
Measurements of atmospheric trace species and greenhouse gases (CO2 , CH4 , CO , N2O) from	43.001	80NSSC21K1200		140,311	-
Metasurfaces for Compact, Next-Generation Polarimetric Remote Sensing of Aerosols and Clouds	43.001	80NSSC20K0318		325,263	-
MoSeq in space: analyzing pre-, in-, and post-flight mouse behavior using machine learning	43.001	80NSSC23K1430		68,717	-
Reassessing Martian dynamo history using high-resolution paleomagnetic imaging and updated orbital	43.001	80NSSC22K0135		87,687	-
Red Supergiant Binaries on the Path to Becoming Gravitational Wave Events	43.001	HST-HF2-51516.001-A		10,315	-

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Support, development, and applications of the GEOS-Chem atmospheric chemistry module in the GEOS	43.001	80NSSC23K0489		115,141	-
The 10th International GEOS-Chem Meeting (IGC10)	43.001	80NSSC22K0698		10,313	-
The Chemistry of Planet Formation: A JWST-ALMA Survey of 4 Planet-Forming Disks	43.001	JWST-GO-02025.001-		28,627	-
The Milky Way in a Bottle: Realizing the promise of Galactic surveys	43.001	80NSSC20K1536		4,285	-
The Physical Origin Of The Rocky/Enveloped Transition Around Mid-To-Late M Dwarfs	43.001	80NSSC22K0296		38,433	-
UV to NIR Study of the First Robust Pulsational or Pair Instability Supernova Candidate and its Low	43.001	HST-GO-15863.002-A		37,804	-
Total for Assistance Listing Number 43.001				4,786,877	284,885
Accelerated Computational Design of Multifunctional Polymeric Materials with Machine Learning	43.012	80NSSC20K1189		50,834	-
Aerobot Mounted Vine Robots for Surface Mobility and Confined Space Exploration	43.012	80NSSC23K1226		70,329	-
Developing a multi-scale understanding of the kinetics of dehydration and rehydration in a model cellular	43.012	80NSSC19K1146		(11,319)	-
Sole Source, NASA Open Innovation Research	43.012	80NSSC23M0003		169,440	-
Suborbital measurements of wildfire smoke to advance multi-sensor coordination observations	43.012	80NSSC23K0883		362,198	158,526
Total for Assistance Listing Number 43.012				641,482	158,526
Anatomy of an ionized bubble at z equals 6.6: Which galaxies reionized the Universe	43.RD	JWST-GO-01933.002-		(39,243)	-
Confirming the Host Star of a Second Planet in the LTT 1445ABC System	43.RD	HST-GO-16503.001-A		23,625	-
Data-Driven Wisp Templates and Flat Fields for NIRCarn	43.RD	JWST-AR-03905.002-		51,915	-
Far-UV spectroscopy of 22 early-type galaxies: testing for IMF variation and a legacy dataset	43.RD	HST-GO-16678.002-A		23,842	-
The ever-changing face of SN 1987A	43.RD	HST-GO-16265.002-A		9,215	-
The Role of Physical Processes and the Environment in Star Formation	43.RD	HST-HF2-51506.001-A		18,063	-
The Stellar and Gas Content of Galaxies at Cosmic Noon	43.RD	JWST-GO-01810.002-		143,687	-
The volatile inventory of the terrestrial planet forming zone: a study of transport from the outer to the	43.RD	JWST-GO-03228.006-		10,853	-
UDF medium band survey: Using H-alpha emission to reconstruct Ly-alpha escape during the Epoch of	43.RD	JWST-GO-01963.009-		36,536	-
Unveiling the Redshift Frontier with JWST	43.RD	JWST-GO- 03215.001-A		64,694	-
Using Chemical Kinetics to Constrain the Timeline of Mars' Redox Dichotomy	43.RD	HST-HF2-51523.001-A		85,718	-
Where Cosmic Dawn Breaks First: Mapping the Primordial Overdensity Powering a z~9 Ionized Bubble	43.RD	JWST-GO-02279.001-		(74,917)	-
White dwarfs in 3D: lenses into distant worlds	43.RD	HST-HF2-51527.001-A		96,459	-
Total for Assistance Listing Number 43.RD				450,447	-
Total for NASA Direct Award Research and Development Cluster				5,878,806	443,411
National Endowment for the Arts					
Connecting contemporary art and children's play: A curriculum and professional development collaboration between Project Zero and Boston Public Schools' Early Childhood Programs	45.024	1909534-38-23		50,158	-
Total for Assistance Listing Number 45.024				50,158	-
Total for National Endowment for the Arts Direct Award Research and Development Cluster				50,158	-
National Endowment for the Humanities					
Conservation Junior Fellowship Program	45.149	PE-284340-22		110,328	-
Total for Assistance Listing Number 45.149				110,328	-
Annotated Translation of Peach Blossom Fan (1699), a Classic of the Chinese Stage written by Kong	45.160	FEL-282569		(2,210)	-
Total for Assistance Listing Number 45.160				(2,210)	-
Computational Methods for Historical Psychology: A case-study in Latin ca. 200 BCE - 1700 CE	45.161	RZ-292726-23		5,212	-
Total for Assistance Listing Number 45.161				5,212	-
The Amendments Project: Rewriting the U.S. Constitution	45.164	MT-284709-22		33,238	-
Total for Assistance Listing Number 45.164				33,238	-

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Total for National Endowment for the Humanities Direct Award Research and Development				146,568	-
National Science Foundation					
Collaborative Research: CDS and E: Generalizable RANS Turbulence Models through Scientific Multi-	47.041	CBET-2347423		6,263	-
Collaborative Research: Droplet-based selection to improve aflatoxin detoxification	47.041	CBET-2103538		23,635	-
Collaborative Research: Programming non-linear waves in compliant mechanical metamaterials	47.041	CMMI-2041440		152,203	-
Collaborative Research: Use of Wearable Sensors to Track Muscle-Tendon Loading during Exosuit	47.041	CBET-2019580		676	-
CPS: Medium: An AI-enabled Cyber-Physical-Biological System for Cardiac Organoid Maturation	47.041	ECCS-2038603		24,759	7,815
EAGER: Moiré Cavity Single Emitter Lasers (MOCSELS)	47.041	ECCS-2234513		189,919	-
EFRI C3 SoRo: Textile Robotics: Integrative Design, Modeling, Manufacture, and Control of Soft Human-	47.041	EFMA-1830896		5,209	5,209
EFRI NewLAW: Topological Mechanical Metamaterials Science	47.041	EFMA-1741685		126,852	126,852
FW-HTF: Collaborative Research: The Next Mobile Office: Safe and Productive Work in Automated	47.041	CMMI-1839870		6,285	-
I-Corps Teams: Tough Adhesive Hydrogels	47.041	IT-2040400		1,661	-
I-Corps: Algorithm-Hardware Co-Design for Large-Scale Machine Learning	47.041	TI-2137080		8,889	-
I-Corps: Soft Robotic Toolkit for Students and Researchers	47.041	TI-2121958		47	-
Mid-infrared reconfigurable pulse generators	47.041	ECCS-2221715		111,917	-
NNCI: The Center for Nanoscale System (CNS) at Harvard University	47.041	ECCS-1541959		155	-
NNCI: The Center for Nanoscale System (CNS) at Harvard University	47.041	ECCS-2025158		1,283,366	-
NRI: INT: Wearable Robots for the Community: Personalized Assistance using Human-in-the- loop	47.041	CMMI-1925085		152,592	152,592
Rapid: Levels of PM, VOCs, and PAHs in Residences Post-2023 Maui Wildfire: Exposure and Mitigation	47.041	2348410		113,018	-
Total for Assistance Listing Number 47.041				2,207,446	292,468
2020 Waterman Award	47.049	CHE-2038059		264,539	-
2021 Alan T. Waterman Award	47.049	DMS-2140043		155,092	-
A Theory of Learned Representations in Artificial and Natural Neural Networks	47.049	DMS-2134157		442,064	-
Applications of homotopy theory to algebraic geometry and physics	47.049	DMS-2305373		182,040	-
ATD: Collaborative Research: Causal Inference with Spatio-Temporal Data on Human Dynamics in	47.049	DMS-2124463		40,361	-
Bifurcations in complex algebraic dynamics	47.049	DMS-2246630		149,689	-
CAREER: Beyond Conditional Independence: New Model-Free Targets for High-Dimensional Inference	47.049	DMS-2045981		90,825	-
CAREER: Epitaxial stabilization of non-perovskite oxide quantum materials	47.049	DMR-2339913		34,723	-
CAREER: Extreme climate perturbations by meteorite impacts and volcanism on terrestrial planets	47.049	AST-1847120		98,988	-
CAREER: Learning Probabilistic Factor Models	47.049	DMS-1943902		68,599	-
CAREER: Manipulating Barocaloric Effects in Two-Dimensional Perovskites	47.049	DMR-2238113		158,489	-
CAREER: Nanobody technology to decipher the essential roles of O-GlcNAc in cells	47.049	CHE-1942574		5,983	-
CAREER: Observing topological magnetoelectric effects by magneto-optics and quantum transport	47.049	DMR-2143177		187,064	-
CAREER: Randomness in Number Theory and Beyond	47.049	DMS-2052036		7,300	-
CAREER: Statistical Inference in High Dimensions using Variational Approximations	47.049	DMS-2239234		44,065	-
CAREER: Stochastic effects in the microbial cell cycle: from single-cell level variability to population	47.049	PHY-1752024		199,629	-
CAREER: Towards Particle Physics Discoveries With Double Cascades In IceCube and Beyond	47.049	PHY-2239795		194,351	-
CAS: Collaborative Research: Electronic Structure/Function Relationships Underpinning Atom Transfer	47.049	CHE-2247817		129,295	-
CDS and E: AAG: Glupyter: Enabling multi-dimensional linked data visualization with glue in the browser	47.049	AST-1908419		27,337	-
CDSE: Collaborative Research: Development and Application of Machine Learning Classification of	47.049	AST-2108531		35,516	-
Center for Integrated Quantum Materials	47.049	DMR-1231319		2,459,186	1,255,082
Collaborative Research: Bayesian and Semi-Bayesian Methods for Detecting Relationships in High	47.049	DMS-2015411		3,430	-
Collaborative Research: Beyond Standard Model Searches Using the IceCube Neutrino Telescope	47.049	PHY-2310050		37,282	-

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Collaborative Research: DMREF: Design of Superionic Conductors by Tuning Lattice Dynamics	47.049	DMR-2119351		160,261	-
Collaborative Research: DMREF: Discovery of unconventional superconductors by design	47.049	DMR-2323970		257,520	-
Collaborative Research: Elements: Enriching Scholarly Communication with Augmented Reality	47.049	OAC-2209623		251,968	-
Collaborative Research: Formation of a High Flux Student Research Network (HF-SRN) as a Laboratory for Enhancing Interaction in the PoLS SRN	47.049	PHY-1806818		132,297	-
Collaborative Research: Imaging the Beginning of Time from the South Pole: Completing the BICEP	47.049	OPP-2220446		573,214	-
Collaborative Research: MFB: Deciphering the Logic of PTM Crosstalk via Novel Chemical Technology:	47.049	2127882		589,273	296,724
Collaborative Research: MINERVA - A dedicated, global, precision radial velocity machine for TESS	47.049	AST-2007811		211,132	-
Collaborative Research: Multiscale engineering of active stress in biomaterials	47.049	DMR-2004380		(17,005)	-
Collaborative Research: The Heavy Metal Survey: Stellar Metallicities and Chemical Abundance Patterns of Massive Galaxies out to z~2.3	47.049	AST-1908748		72,087	-
Collaborative: Isotopologue Synthesis and Use for Elucidating Important Chemical Mechanisms of Organic Condensation Reactions in Atmospheric Particles	47.049	CHE-2003368		13,655	-
Complex Dynamics and Diophantine Geometry	47.049	DMS-2050037		9,598	-
Complex Dynamics and Moduli Spaces	47.049	DMS-1903764		173,814	-
Conference: A Celebration of Algebraic Combinatorics	47.049	DMS-2408960		10,556	-
Conference: Amplituhedra, Cluster Algebras and Positive Geometry	47.049	DMS-2412346		3,948	-
Conference: Arithmetic quantum field theory	47.049	DMS-2400553		33,351	-
Conference: Current Developments in Mathematics	47.049	DMS-1933415		7,561	-
Distribution of the Hodge and the Tate locus	47.049	DMS-2302388		47,340	-
DMREF: Collaborative Research: Digital Magnetic Handshake Materials, Structures, and Machines	47.049	DMR-1921619		127,118	-
DMREF: Collaborative Research: The Search for Novel Superconductors in Moire Flat Bands	47.049	DMR-1922172		17,048	-
DMREF: Hydrogel-actuated cellular soft robotic materials with programmable mechanical properties	47.049	DMR-1922321		105,125	57,644
DMS-EP SRC Collaborative Research: Advancing Statistical Foundations and Frontiers for and from Emerging Astronomical Data Challenges	47.049	DMS-2113615		81,336	-
EAGER-QAC-QCH: Hybrid Quantum-Classical Algorithm for NMR Inference	47.049	CHE-2037687		11,293	-
EAGER: Coherent Manipulation and Quantum Entanglement in Ultracold Reactions	47.049	CHE-2332539		200,439	-
EAGER: Collaborative K-12 Outreach at the Interface between Biology and Imaging Science	47.049	PHY-2333466		79,379	-
EAGER: Physics of Living Systems Teacher (PoLST) Network: Increasing Student Conceptual	47.049	PHY-2016294		26,352	-
EAGER: Researching Team-Based Learning in High-School Physics Classes	47.049	PHY-2333904		41,165	-
EAGER: SUPER: Optically-enhanced superconductivity in hydrogen-based materials	47.049	DMR-2132338		25,485	11,235
Emerging Statistical and Quantitative Issues in Genomic Research in Health Sciences	47.049	DMS-1833416		15,265	-
Foundations of Data Science Institute	47.049	DMS-2023528		47,813	-
FRG: Collaborative Research: Definability and Computability over arithmetically significant fields	47.049	DMS-2152149		58,030	-
FRG: Collaborative Research: Dimers in Combinatorics and Physics	47.049	DMS-1854316		(3,654)	-
FRG: Collaborative Research: Geometric and Topological Methods for Analyzing Shapes	47.049	DMS-1760471		23,498	-
Fukaya categories of complex symplectic manifolds	47.049	DMS-2305257		43,262	-
Fundamental Physics from Astronomy and Cosmology	47.049	PHY-1915071		15,670	-
Geometric Langlands Correspondence: Further Directions	47.049	DMS-2005475		83,164	-
Heavy binary black holes in the making: constraining the physics of chemically homogeneous evolution using gravitational waves and electro-magnetic surveys of local analogues	47.049	AST-2009131		62,819	-
Hodge Filtration, Singularities, and Complex Birational Geometry	47.049	DMS-2040378		129,472	-
Inference for Functionals in High-Dimensional Regression	47.049	DMS-2113426		48,269	-

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Instanton Homology in Low-Dimensional Topology	47.049	DMS-2005310		51,640	-
Instanton homology in low-dimensional topology	47.049	DMS-2304877		78,704	-
Institute for Theoretical, Atomic, Molecular and Optical Physics	47.049	PHY-1521560		11,268	-
Institute for Theoretical, Atomic, Molecular and Optical Physics (ITAMP)	47.049	PHY-2116679		778,124	519,887
Interactions of combinatorics and physics	47.049	DMS-2152991		110,208	-
Interactions of Particles, Fields, and Strings	47.049	PHY-2013858		88,857	-
Investigating fundamental chemical and physical processes affecting gas-particle partitioning using	47.049	CHE-1808084		46,274	-
Investigating Laser-Activation of Structured Polymer Materials for Drug Delivery	47.049	PHY-1806434		165,346	-
Materials Research Science and Engineering Center	47.049	DMR-2011754		2,905,979	-
Metallic Properties of the Isotopes of Hydrogen	47.049	DMR-1905943		130,187	-
MRI: Development of a Scanning 4-Probe Microscope for Discovery and Characterization of Quantum	47.049	DMR-1828569		191,389	-
Multi-Wavelength Observations and Modeling of Magnetic Fields in Ultracool Dwarfs and Giant	47.049	AST-2007411		61,110	-
New and Refurbished Directions Beyond the Standard Model	47.049	PHY-2310717		113,266	-
New Frontiers in Homotopy Theory	47.049	DMS-1810917		56,825	-
New Paradigms of Quantum Criticality	47.049	DMR-2002850		6,177	-
NSF BSF: Nonlinear Photon Interactions in Cooperative Quantum Optical Systems	47.049	PHY-2207972		119,617	-
NSF-ANR: Developmental Mechanics Of Brain Evolution	47.049	PHY-2204058		90,485	-
NSF-BSF:Transport, fluctuation, and Nonequilibrium phase transition in atomically thin crystalline van der	47.049	DMR-1809188		42,492	42,492
NSF-Simons Center for Mathematical and Statistical Analysis of Biology	47.049	DMS-1764269		260,192	-
Partially Wrapped Fukaya Categories and Functoriality in Mirror Symmetry	47.049	DMS-2202984		177,865	-
Photoactivation of Stable Bonds for Chemical Conversions	47.049	CHE-2243724		215,896	-
Photoactivation of Stable Bonds for Energy Conversion and Photoredox Catalysis	47.049	CHE-1855531		44,072	-
Physics and Applications of Quantum Nanophotonics Systems	47.049	PHY-2012023		350,290	-
Positive vector bundles in combinatorics	47.049	DMS-2246518		47,330	-
QII-TAQS: Majorana Nanomanipulation for Topological Quantum Computing	47.049	OSI-1936246		387,520	198,131
Quantum Noir: A conference series focused on Faculty, Researchers, and Students of Color (+) in the	47.049	DMR-2306216		49,124	-
QuIC-TAQS: Integrated Lithium Niobate Quantum Photonics Platform	47.049	OMA-2137723		778,059	325,982
Random Matrices, Random Schrödinger Operators and Applications	47.049	DMS-2153335		105,549	-
Screening for Generality in Asymmetric Catalysis	47.049	CHE-2247494		164,730	-
Shimura Varieties and Abelian Varieties	47.049	DMS-2200449		139,184	-
Simulating Spins with an Array of Single Molecules	47.049	PHY-2110225		174,152	-
Spindle Self-Organization and Bioenergetics in Vivo	47.049	PHY-2013874		63,999	-
Strange metals and the phases of quantum materials	47.049	DMR-2245246		141,623	-
Synthesizing and harnessing ultracold single molecules for quantum simulations	47.049	PHY-1806595		(212)	-
The Evolution of Evolvability in Microbial Populations	47.049	PHY-1914916		91,206	-
The H3 Spectroscopic Survey and the Origin of the Galaxy	47.049	AST-2107253		125,852	-
The Tierras Observatory: An Ultra-precise Time-series Photometer to Characterize Nearby Low-mass	47.049	AST-2308043		133,334	-
Stars and Their Terrestrial Exoplanets					
Topics In General Relativity	47.049	PHY-2207659		138,789	-
Topological order and Anyons in and out of Equilibrium	47.049	DMR-2220703		209,677	-
Topology, Geometry and Physics	47.049	DMS-2002771		5,817	-
Transport in van der Waals Superconductor Heterostructures	47.049	DMR-2105048		210,218	-
Ultracold Triatomic Molecules	47.049	PHY-2109995		(10,450)	-

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Understanding the Formation and Utilization of Halogenated Metabolites in Natural Product Biosynthesis	47.049	CHE-2003436		(413)	-
Unlikely Intersections in Diophantine Geometry and Dynamics	47.049	DMS -2200981		34,356	-
WoU-MMA: The Electromagnetic Counterparts of Gravitational Wave Sources	47.049	AST-2206110		131,715	-
QuSeC-TAQS: Quantum Sensor Networks for Metrology, Chemistry and Astrophysics	47.049	OMA-2326787		86,925	3,180
Total for Assistance Listing Number 47.049				18,089,112	2,710,357
AGS-FIRP Track 3: Methane Emissions Quantification at scales from 20 m to 200 km using the MethaneAIR Imaging Spectrometer on the NSF Gulfstream-V (MAIR-E)	47.050	AGS-2202113		292,042	90,693
Belmont Forum Collaborative Research: Climate change, pollinator declines and the human diet	47.050	2020681		11,110	-
Belmont Forum Collaborative Research: ARMS to reefs: A new tool to restore coral reef biodiversity, fisheries yields, and human health in Madagascar	47.050	RISE-2022717		185,505	-
Belmont Forum Collaborative Research: Climate-Induced Migration in Africa and Beyond: Big Data and Belmont Forum Collaborative Research: Governance of Sociotechnical Transformations	47.050	RISE-2310908		157,285	-
CAREER: Developing novel biomarker proxies to constrain Neogene changes in African woody cover and paleoecological contexts of hominin evolution	47.050	RISE-1856215		95,272	-
CAREER: Ecological turnover at the dawn of the Great Ordovician Biodiversification Event - quantifying the Cambro-Ordovician transition through the lens of exceptional preservation	47.050	EAR-2426448		15,584	-
CAREER: Ecological turnover at the dawn of the Great Ordovician Biodiversification Event - quantifying the Cambro-Ordovician transition through the lens of exceptional preservation	47.050	EAR-2047192		123,379	-
CAREER: Habitability of the Hadean Earth - A South African perspective	47.050	EAR-2336044		11,457	-
CAREER: Using Tracer Interrelationships to Understand Large-Scale Geophysical Flows and their	47.050	AGS-2239242		154,979	-
CAREER:Exploring the early Earth with high-resolution paleomagnetism	47.050	EAR 1847042		67,414	-
Characterization of Oceanic Storm Systems using Microseism	47.050	EAR-2243407		96,959	-
Clumped Oxygen Isotope Signature of Marine Dissolved Oxygen	47.050	OCE-2049298		187,548	-
Collaborative Research: An analysis of 150 years of sea surface and subsurface observations to map whole-ocean temperature and detect circulation change	47.050	OCE-2123295		60,247	-
Collaborative Research: Coupled flow-geomechanical models applied to assess earthquake triggering in tectonically active regions - The Los Angeles basin, CA	47.050	EAR-2141382		104,355	-
Collaborative Research: Development and Applications of GEOS-Chem Atmospheric Chemistry in	47.050	AGS-2228359		208,338	-
Collaborative Research: EAGER--Novel Sampling and Isotopic Characterization of Upper Strato- to	47.050	AGS-2204475		23,144	-
Collaborative Research: Illuminating the Cenozoic Alkenone pCO2 Record	47.050	OCE-2100537		113,122	-
Collaborative Research: Imaging the Beginning of Time from the South Pole: The next Stage of the	47.050	OPP-1638957		108,245	-
Collaborative Research: P2C2--Constraints on Last Interglacial and Late Holocene Global Mean Sea Level and Fingerprinting Polar Ice Mass Flux from Broadly Distributed Coastal Caves	47.050	AGS-2202698		(10,278)	-
Collaborative Research: The influence of climate and tectonics on Miocene ecosystems and faunal evolution in the East African Rift, Kenya	47.050	EAR-2420088		97,245	-
Collaborative Research: The Lake Superior basin: Natural geomorphic experiment, deepwater-terminating ice stream, and isostatically adjusting rift	47.050	EAR-2218460		116,658	-
Collaborative Research: Unlocking the Cenozoic/Cretaceous seawater sulfate record via inclusion of	47.050	OCE-1946137		13,930	-
Controls on ground surface deformation in thrust and reverse fault earthquakes	47.050	EAR-2207119		129,638	-
CoPe: EAGER: Collaborative Research: Development of A Novel, Mobile Coastal Observatory for Quantifying Coastal Carbon Cycling by Professional and Citizen Scientists	47.050	RISE-1940100		(504)	-
CSEDI Collaborative Research: The nature and timing of Earth's accretion	47.050	EAR-2054912		83,161	-
Development of a simple, low-cost device for sample collection and on-site preservation using a common oceanographic deployment platform	47.050	OCE-1924214		124,837	-

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DISES: Environmental tipping points of cultural identity extinction in integrated human-ecological systems represented by small fishing nations	47.050	ICER-2108452		528,363	149,756
Explaining the Surprising Simplicity of Continental Evapotranspiration	47.050	AGS-2129576		163,595	-
High spatial resolution assessment of the speleothem magnetization proxy	47.050	AGS-2202772		52,783	-
Integrating the fossil record with computer simulation to reconstruct posture and locomotor evolution in	47.050	EAR-2122115		199,979	-
NSF/GEO–NERC collaborative research: Dynamics of warm past and future climates	47.050	AGS-1924538		3,485	-
NSFGEO-NERC: Collaborative Research: The first actinopterygian 'adaptive radiation': integrating fossils, function and phylogeny to illuminate innovation in a post-extinction world	47.050	EAR-2219069		138,735	-
Postdoctoral Fellowship: OCE-PRF: Reconstructing CO2 Levels for the Late Cretaceous through Paleocene using Sedimentary Compositions of Molecular and Isotopic Proxies	47.050	OCE-2308272		90,341	-
RAPID: Ongoing Impacts of the Extraordinary Hunga Tonga Volcanic Eruption on the Stratosphere	47.050	AGS-2426145		6,177	-
REU Site: Summer Program at Harvard in Earth and Environmental Research (SPHEER): Investigating a changing planet across multiple timescales	47.050	AGS-2150290		108,169	-
Terrestrial Organics since The Oligocene (TOTO): The Rains Down in Africa	47.050	OCE-2425776		42,585	-
The Tenth (10th) International GEOS-Chem Meeting (IGC10); Saint Louis, Missouri; June 7-10, 2022	47.050	AGS-2218241		3,531	-
Using hothouse climates to generalize understanding of convection, clouds, and circulation	47.050	AGS-2210757		99,963	-
Warm Pliocene mid-latitude upwelling sites, with implications to future southwestern North America	47.050	OCE-2303486		286,462	-
Collaborative Research: Ideas Lab: Smarter Microbial Observatories for Realtime Experiments	47.050	DEB-2321651		81,479	-
Total for Assistance Listing Number 47.050				4,376,319	240,449
AF: Small: A Computational Lens on Participatory Democracy	47.070	CCF-2007080		125,844	-
AF: Small: Algorithms and Data Structures with Predictions	47.070	CCF-2101140		99,494	-
AF: Small: Streaming Complexity of Constraint Satisfaction Problems	47.070	CCF-2152413		197,462	-
CAREER: Complexity of quantum many-body systems: learnability, approximations, and entanglement	47.070	CCF-2238836		92,476	-
CAREER: Defining how the primate visual system works under naturalistic conditions	47.070	2143077		115,747	-
CAREER: Developing Neural Network Theory for Uncovering How the Brain Learns	47.070	IIS-2239780		106,335	-
CAREER: Generative Models for Targeted Domain Interpretability with Applications to Healthcare	47.070	IIS-1750358		176,329	-
CAREER: Information-Theoretic Foundations of Fairness in Machine Learning	47.070	CCF-1845852		117,792	-
CAREER: Multi-Agent Decision Making and Optimization using Communication as a Sensor	47.070	CNS-2114733		85,188	-
Career: Towards a Systematic Characterization of Model Explanations for High-Stakes Decision Making	47.070	IIS-2238714		18,233	-
CIF: Medium: Collaborative Research: Information-theoretic Guarantees on Privacy in the Age of	47.070	CCF-1900750		68,691	-
CNS Core: Medium: Approximation and Randomization in the Programmable Data Plane	47.070	CNS-2107078		150,958	-
Collaborative Research: CHS: Medium: Code demography: Addressing information needs at scale for programming interface users and designers	47.070	IIS-1955699		(11,735)	-
Collaborative Research: CIF: Medium: Fundamental Limits of Privacy- Enhancing Technologies	47.070	CCF-2312667		42,634	-
Collaborative Research: CIF: Small: Approximate Coded Computing - Fundamental Limits of Precision,	47.070	CCF-2231707		124,627	-
Collaborative Research: CNS Core: Medium: A Stateful Switch Architecture for In-Network Compute	47.070	CNS-2211383		42,640	-
Collaborative Research: CNS Core: Medium: Cross-Layer Design of Video Analytics for the Internet of	47.070	CNS-1955422		17,620	-
Collaborative Research: Conference: DESC: Type III: Eco Edge - Advancing Sustainable Machine	47.070	CCF-2342497		3,065	-
Collaborative Research: DESC: Type 2: Delphi: Life-time aware design frameworks for sustainable edge	47.070	CCF-2324862		47,793	-
Collaborative Research: FET: Medium: Efficient Compilation for Dynamically Reconfigurable Atom	47.070	CCF-2313084		138,994	-
Collaborative Research: FMitF: Track I: Usable Synthesis-based End-User Programming with Rich	47.070	CCF-2123965		49,742	-
Collaborative Research: III: Medium: Situated Visual Information Spaces	47.070	IIS-2107328		147,012	-

The accompanying notes are an integral part of this schedule.

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Collaborative Research: MLWiNS: Distributed Learning over Multi-Access Channels: From Bandlimited Coordinate Descent to Gradient Sketching	47.070	CNS-2003111		80,614	-
Collaborative Research: RI: AF: Small: Wisdom of Crowds with Machines in the Loop	47.070	IIS-2007887		16,289	-
Collaborative Research: RI: Small: Post hoc Explanations in the Wild: Exposing Vulnerabilities and	47.070	IIS-2008461		87,401	-
Collaborative Research: SaTC: CORE: Medium: Foundations of Trust-Centered Multi-Agent Distributed	47.070	CNS-2147694		111,463	-
Collaborative Research:PPoSS:Planning: Streamware - A Scalable Framework for Accelerating	47.070	CCF-2118985		(2,338)	-
CRCNS Research Proposal: Learning by Looking: Modeling visual system representation formation via	47.070	IIS-2309041		121,471	-
Elements: FLARE infrastructure for reproducible active learning of Bayesian force fields for ex-machina	47.070	OAC-2003725		(6,513)	-
FAI: Foundations of Fair AI in Medicine: Ensuring the Fair Use of Patient Attributes	47.070	IIS-2040880		217,292	-
HCC: Medium: Improving Human-AI Collaboration on Decision-Making Tasks	47.070	IIS-2107391		444,605	-
III: Medium: Visually Interactive Neural Probabilistic Models of Language	47.070	IIS-1901030		203,913	131,715
NCS-FO: Empowering Data-Driven Hypothesis Generation for Scalable Connectomics Analysis	47.070	IIS-2124179		520,001	-
NRI: FND: Robust Grasping by Integrating Machine Learning with Physical Models	47.070	IIS-1924984		39,829	-
Phase II I/UCRC Harvard: Center for Spatiotemporal Thinking, Computing and Applications (STCA)	47.070	CNS-1841403		116,176	-
QCIS-FF: Quantum Computing and Information Science Faculty Fellow at Harvard University	47.070	CCF-2013303		230,213	-
RI: Medium: End-to-end Computational Sensing	47.070	IIS-1900847		259,024	-
RI: Small: Human Validation in Batch Reinforcement Learning	47.070	IIS-2007076		117,624	-
SHF:Medium:A Cloudless Universal Translator	47.070	CCF-1704834		169,351	-
SHF:Small: Extensible Models and Proofs via Family Polymorphism	47.070	CCF-2303983		175,523	-
SLER: A Theoretical Lens on Generative AI Safety: Near and Long Term	47.070	IIS-2331831		32,776	-
Untangling Inter-Area Communication in the Brain Using Multi-Region Neural Networks	47.070	2427124		29,274	-
Total for Assistance Listing Number 47.070				4,920,929	131,715
Collaborative Research: DASS: Co-design of law and computer science for privacy in sociotechnical	47.RD	CCF-2217680		85,119	-
Collaborative Research: DASS: Enabling Standards- and Disclosure-Based Regulations in and through	47.RD	CCF-2217722		87,036	-
Software Systems: Making Algorithmic Work Management Software Accountable to Law					
FAI: A Normative Economic Approach to Fairness in AI	47.RD	IIS-2147187		176,269	-
HNDS-I: Bringing Differential Privacy to Social Science Data Repositories	47.RD	BCS-2218803		292,987	-
Total for Assistance Listing Number 47.RD				641,411	-
1000 species and counting: Harnessing the power of herbarium digitization, crowdsourcing, and	47.074	DEB-1754584		12,795	-
phylofloristics to assess and predict phenological responses					
BBSRC-NSF/BIO: Integrative analysis and Visualisation of Fly Cell Atlas datasets to enable cross-	47.074	DBI-2035515		174,954	-
CAREER: Integrating brain-behavior evolution with real-world science impacts through working dog	47.074	IOS-2238071		460,698	-
CAREER: Linking systemic stem cell activation to vertebrate limb regeneration	47.074	IOS-2145925		307,354	-
CAREER: Microbial Mediation of Temperate Tree Responses to Climate Change	47.074	DEB-2339621		14,945	-
CAREER: Testing the contributions of selection, gene-flow, and recombination to reinforcement	47.074	DEB-1844906		236,249	-
CAREER: The evolution of gene regulatory networks for regeneration	47.074	IOS-1652104		(9,066)	-
CNH-L: Social-ecological traps and interactive dynamics of reef fisheries and human health	47.074	1826668		36,942	27,458
Collaborative Proposal: Redefining the ecological memory of disturbance over multiple temporal and	47.074	DEB-1945910		140,530	-
Collaborative Proposal: Redefining the ecological memory of disturbance over multiple temporal and	47.074	DEB-2231681		9,407	-
Collaborative Research: Convergent evolution and diversification of the crab body plan over 200 million	47.074	DEB-1856679		17,129	-
Collaborative Research: Digitization and Enrichment of U.S. Herbarium Data from Tropical Africa to	47.074	DBI-2223880		72,189	-
Enable Urgent Quantitative Conservation Assessments					
Collaborative Research: Digitization TCN: Extending Anthophila research through image and trait	47.074	DBI-2101908		40,703	-

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Collaborative Research: EDGE FGT: Transformation and Genomic Resources to Advance Diverse,	47.074	IOS-2128195		61,720	-
Collaborative Research: Enabling control of Bacillus subtilis growth using non-standard amino acids	47.074	MCB-2027074		146,157	-
Collaborative Research: Evolving the mammalian forelimb: modeling musculoskeletal transformation in	47.074	DEB-1754459		13,082	-
Collaborative Research: Feedbacks among Ecosystem Engineers and their Influence on Ecosystem	47.074	DEB-2303835		6,612	-
Collaborative Research: Higher-order processing in a peripheral neural structure of a nudibranch mollusc	47.074	IOS-2227964		168,953	-
Collaborative Research: Ideas Lab: Discovery of Novel Functional RNA Classes by Computational	47.074	MCB-2243704		70,668	-
Integration of Massively-Parallel RBP Binding and Structure Data					
Collaborative Research: LightningBug, An Integrated Pipeline to Overcome The Biodiversity Digitization	47.074	DBI-2104150		49,585	-
Collaborative Research: MRA: Modeling and forecasting phenology across spatiotemporal and	47.074	DEB-2105903		228,906	-
taxonomic scales using ecological observatory and mobilized digital herbarium data					
Collaborative Research: NSF-BSF: Under Pressure: The evolution of guard cell turgor and the rise of the	47.074	IOS-2333888		84,871	-
Collaborative Research: PurSUIT: Understanding the Neotropical Velvet Worms (Onychophora,	47.074	DEB-2154245		269,616	-
Peripatidae, Neopatiada), a Cretaceous Radiation of Terrestrial Panarthropods					
Creating a Novel Museum-Based Resource for Neuroscience: Mass whole-slide imaging of the R. Glenn	47.074	DBI-2122620		107,841	-
Northcutt Collection of Comparative Vertebrate Neuroanatomy and Embryology					
CSBR: Natural History: Preserving the genomes of the type specimens in the Museum of Comparative	47.074	DBI-1946857		121,197	-
DESIGN: Culture Change - Building a Relational and Inclusive Discipline through Genetics Engagement	47.074	2334984		6,361	-
Designing a Minimized Genome Cyanobacterial Chassis for Efficient Bioproduction	47.074	MCB-2037995		191,943	-
Digitization TCN: Collaborative Research: Bringing Asia to digital life: mobilizing underrepresented Asian	47.074	DBI-2101884		368,665	37,503
herbarium collections in the US to propel biodiversity discovery					
Digitization TCN: Collaborative Research: Documenting marine biodiversity through Digitization of	47.074	DBI-2001540		45,097	-
Digitization TCN: Collaborative Research: Enhancing Access to Taxonomic and Biogeographical Data to	47.074	DBI-1902188		147	-
Stem the Tide of Extinction of the Highly Imperiled Pacific Island Land Snails					
Digitization TCN: Collaborative Research: Mobilizing Millions of Marine Mollusks of the Eastern	47.074	DBI-2001536		38,650	-
Dimensions US-BIOTA-Sao Paulo: Collaborative Proposal: Traits as predictors of adaptive diversification	47.074	DEB-1831560		201,233	-
along the Brazilian Dry Diagonal					
EDGE FGT: MUSH-IT: Multi-Species Hemimetabolous Insect Tools	47.074	IOS-2220747		344,232	-
Examining the correlated molecular mechanisms of self and heterospecific pollen-pistil recognition	47.074	IOS-1906113		71,631	-
Expanding the functions of a 57 codon recoded E.coli genome	47.074	2123243		854,424	-
Identifying the genetic determinants of plasmid-dependent phage host range	47.074	2331228		161,841	-
IntBIO COLLABORATIVE RESEARCH: Deep Time, Development, and Design: Evolution of shark skin	47.074	IOS-2128033		82,832	-
teeth from genotype to phenotype to prototype.					
Investigating the Rotation of Stator Units of the Bacterial Flagellar Motor	47.074	MCB-2146519		342,426	-
LTER: From Microbes to Macrosystems: Understanding the response of ecological systems to global	47.074	DEB-1832210		987,535	166,379
change drivers and their interactions					
MRI: Development of a Microelectromagnetic, Laser Ablation Instrument for Biomechanics	47.074	DBI-1919834		(25,856)	-
Remote homology detection with evolutionary profile HMMs	47.074	MCB-2151294		191,137	-
REU Site: Evolution, Ecology, Environment	47.074	DBI-1757780		17,499	-
REU Site: Genes, Ecosystems, Organisms	47.074	DBI-2150058		95,203	-
REU Site: Summer Research Program in Ecology at Harvard Forest	47.074	DBI-1950364		148,752	-
REU Site: Summer Research Program in Ecology at Harvard Forest	47.074	DBI-2348924		55,163	-
Revitalizing a field wireless network for research, education and outreach at the Harvard Forest	47.074	DBI-2129580		88,381	-
Sustaining Flybase: The Drosophila genomic and genetic database	47.074	DBI-2039324		95,313	-

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Transitions: Spatiotemporal Behaviors of Metabolic Fluxes in Cell Biology	47.074	MCB-2052305		(36,731)	-
Total for Assistance Listing Number 47.074				7,169,915	231,340
2022 Cooperative Election Study	47.075	SES-2148907		174,390	69,793
A Robust and Reliable Resource for Accessing, Sharing, and Analyzing Confidential Geospatial	47.075	BCS-2025783		44,801	-
CAREER: Experimental pragmatics and semantics in visual language	47.075	BCS-1844186		130,639	-
CAREER: Global Transport Markets: impact on trade and efficiency	47.075	SES-1847555		194,872	-
CAREER: The AI Revolution and Autocratic Institutions	47.075	SES-2143343		156,825	-
CAREER: The Tuning and Topography of the Ventral Visual Stream	47.075	BCS-1942438		185,970	-
CAREER: Understanding Early Language: Evidence from Blind Infants and Deaf Infants	47.075	BCS-2337766		42,591	-
Collaborative research: Emirical Evidence of the Tax Administration Production Function	47.075	SES-1919073		139	-
Collaborative Research: Examining Pyrotechnology and Ecosystem Change in the Archaeological	47.075	BCS-2413996		7,700	-
Collaborative Research: How Events are Conceptualized by Users of Homesign and by Users of an	47.075	BCS-2116702		193,582	-
Collaborative Research: Loopholes as a window into the learning of meaning	47.075	BCS-2118096		129,235	-
Collaborative Research: NCS-FO: Foundations of learning: individual variation, plasticity, and evolution	47.075	DRL-2219739		67,456	-
Collaborative Research: Reconstructing Classic Genetic and Social Kinship Networks	47.075	BCS-2150813		215,813	-
Collaborative Research: State Health, Institutions, and Politics Survey (SHIPS)	47.075	SES-2241885		30,800	-
Collaborative Research: The Economics of Port Infrastructure	47.075	SES-2315533		18,928	-
Collaborative Research: Understanding the Evolution of Political Campaign Advertisements over the Last	47.075	SES-2148928		74,157	-
COMPCOG: Intuitive Physics without Intuition or Physics: Leveraging Deep Neural Networks to Model	47.075	BCS-1946308		65,595	-
Conference: Toward a Holistic Developmental Science: Catalyzing Transdisciplinary Multi-Sector	47.075	BCS-2218351		13,385	-
Collaborations to Understand and Support Human Development					
COVID-19: Collaborative Research: U.S. Institutions after COVID-19: Trust, accountability, and public	47.075	SES-2116458		40,854	-
COVID-19: RAPID: Collaborative Research: A Comparative Study of Expertise for Policy in the COVID-	47.075	SES-2028585		24,478	-
Doctoral Dissertation Research in Economics: Belief Formation and Adaptation to Climate Change	47.075	SES-2242263		4,246	-
Doctoral Dissertation Research: Cellular Senescence in Human Age-Related Mortality and Lifespan	47.075	BCS-2116277		1,525	-
Doctoral Dissertation Research: Evolutionary mismatch and variation in physical activity and function	47.075	BCS-2235529		18,545	-
Doctoral Dissertation Research: Exploring the Origins of Malaria Using Ancient DNA	47.075	BCS-2141896		5,088	-
Doctoral Dissertation Research: Identifying Individuals' Causal Effects (Peer Effects) on Participation in	47.075	SES-1647325		7,296	-
Doctoral Dissertation Research: Investigating the genomic underpinnings of the human hand and foot	47.075	BCS-2337516		61	-
Doctoral Dissertation Research: Physiological tradeoffs arising from early-life disruption of the gut	47.075	BCS-2142073		15,450	-
Doctoral Dissertation Research: Prefixal Agreement, Verb Classes, and Serialization	47.075	BCS-2141097		1,008	-
Doctoral Dissertation Research: The Not-So-Inexhaustible Sea: Fisheries Science and Management	47.075	SES-2043610		6,200	-
Doctoral Dissertation Research: The Role of Language in Human Capital and Entrepreneurial	47.075	BCS - 2016625		10,847	-
EAGER: Talk of the Town App for Research	47.075	BCS-2121842		3,109	-
Evaluating the Impacts of Machine Learning Algorithms on Human Decisions	47.075	SES-2051196		73,620	-
Evolved changes to neural systems for reactive aggression in humans and other primates	47.075	BCS-2234308		47,896	-
Financing the Trans-Atlantic Slave Trade	47.075	SES-2116150		34,877	12,045
HNDS-I: A global seafood trade network database for sustainable food systems, human health, and	47.075	2121239		65,934	-
Identifying novel memory traces that improve action precision	47.075	BCS-2218427		168,407	-
Measuring and Reducing Algorithmic Discrimination with Quasi-Experimental Data	47.075	SES-2119849		157,626	12,919
Optimal Public Transportation Networks: Theory and Evidence.	47.075	SES-2049784		121,683	11,250
Our Inner Neandertal: Interrogating Positively Selected Introgressed Variants in Modern Human	47.075	BCS-2020205		186,637	-
Outsourcing Property Tax Re-Assessments: Empirical Evaluation	47.075	SES-2315488		100,803	-

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Social Structure Learning	47.075	BCS-2116543		164,444	-
Speech and Communicative Timing Across Languages and Linguistic Contexts	47.075	BCS-2306149		175,230	26,287
Urbanization and Economic Growth	47.075	SES-2117534		(13)	-
Total for Assistance Listing Number 47.075				3,182,729	132,294
AGEP Research Universities Alliance Model: Advancing Minority Math, Physical Science, Environmental Science, and Engineering PhD Candidates and Postdoctoral Scholars to Faculty	47.076	EES-2014755		23,606	-
Cognitive Mechanisms of Guided Instruction in the Early Elementary Years	47.076	DRL-2301180		183,361	5,788
Collaborative Research: Developing an Online Game to Teach Middle School Students Science	47.076	DRL-1907398		72,629	-
Collaborative Research: Investigating Gender Differences in Digital Learning Games with Educational	47.076	DRL-2201799		27,752	-
Collaborative Research: Promoting Math Skills through Playful Communication in the Home Environment	47.076	DRL-2301246		58,668	-
Collaborative Research: Supporting Teachers to Develop Equitable Mathematics Instruction Through	47.076	DRL-2100961		465,013	-
Conference: Broadening Participation in an Astrosociology Curriculum	47.076	DUE-2320886		23,856	-
Crowd-Sourced Online Nexus for Developing Assessments of Middle-school Physical Science	47.076	DRL-2101493		197,026	40,545
Graduate Research Fellowship Program	47.076	DGE-2140743		12,546,146	-
Instrument Development: Racially and Ethnically Minoritized Youths' Varied Out-Of-School-Time Experiences and Their Effects on STEM Attitudes, Identity, and Career Interest	47.076	DRL-2215050		456,080	126,784
NCS-FO: Dynamic computational phenotyping of human cognition and brain function	47.076	DRL-2024462		260,564	-
Reconstructing Research in Teacher Education to Provide Usable Knowledge and Support Teacher	47.076	DUE-1920616		12,955	-
Researching Pre-College Factors that Lead to Persistence in Computer Science	47.076	DRL-2029256		21,569	9,951
Study of Preservice Teachers' Science Content Knowledge and Pedagogical Content Knowledge	47.076	DUE-2013263		429,546	48,610
When Teachers Aren't There: Detecting, Evaluating, and Learning from Rote Teaching Across	47.076	DGE-2327447		118,762	-
Total for Assistance Listing Number 47.076				14,897,533	231,678
Collaborative Research: Bridging the scale gap between local and regional methane and carbon dioxide	47.078	OPP-1848620		316,366	72,240
Collaborative Research: Bridging the scale gap between local and regional methane and carbon dioxide	47.078	OPP-2427291		307,529	-
Collaborative Research: Imaging the 3D Viscosity Structure of the Antarctic Mantle with Existing Observations from GPS and Relative Sea Level	47.078	OPP-2142593		18,902	-
Collaborative Research: Impacts of Global Change on Terrestrial Mercury in the Arctic	47.078	OPP-2210173		201,215	-
Total for Assistance Listing Number 47.078				844,012	72,240
Equipment: MRI: Track No.1 Acquisition of Photonic Wirebonding Tool for Quantum and Nanophotonics	47.083	ECCS-2320265		886,092	-
FW-HTF-P: Future of Work for Strength and Movement Training Professionals	47.083	OIA-2129012		9,376	-
Total for Assistance Listing Number 47.083				895,468	-
I-Corps: Photophoretically levitating platforms for atmospheric sensing and communications	47.084	TI-2345244		10,313	-
NSF Convergence Accelerator Track L: Intelligent Nature-inspired Olfactory Sensors Engineered to Sniff	47.084	ITE-2344256		152,412	25,406
NSF Convergence Accelerator: Track H: Restoring Arm Function with Connected Assistance and	47.084	ITE-2236157		580,459	135,186
NSF Convergence Accelerator: Track H: Restoring Arm Function with Connected Assistance and	47.084	ITE-2345107		711,652	62,762
PFI-TT: Soft robotic educational kits for recruiting a more diverse group of students into science, technology, engineering and mathematics (STEM) fields	47.084	TI-2213926		138,049	-
POSE: Phase II: Building the Differential Privacy Ecosystem through OpenDP	47.084	TI-2303681		597,869	-
Total for Assistance Listing Number 47.084				2,190,754	223,354
Total for National Science Foundation Direct Award Research and Development Cluster				59,415,628	4,265,895
U.S. Institute of Peace					
Why it Worked: A Comparative Study of Resolved Conflicts and Research-Based Model for Hope	91.005	2303-27616		23,921	-
Total for Assistance Listing Number 91.005				23,921	-

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Total for U.S. Institute of Peace Direct Award Research and Development Cluster				23,921	-
U.S. Office of Personnel Management					
OPM Meta Leadership Development	27.RD	24322623P0008		23,309	-
Total for Assistance Listing Number 27.RD				23,309	-
Total for U.S. Office of Personnel Management Direct Award Research and Development Cluster				23,309	-
Total for Research and Development Cluster Direct Awards				580,668,092	137,766,258
Research and Development Cluster					
Subaward Received					
Agency for International Development					
Concern Worldwide U.S. Inc - NNPHL Phase III	98.001		NNPHL3-HHI-001	249,076	-
EngenderHealth - EngenderHealth-Co-designing a Safe Cesarean Checklist to Enhance Safety and	98.001		GGP0005	118,273	-
International Medical Corps - Building a Better Response: Strengthening Non-governmental organization Capacity and Engagement in the International Humanitarian Architecture	98.001		104035.100.51	(17,213)	-
International Medical Corps - Building a Better Response: Strengthening Non-governmental organization Capacity and Engagement in the International Humanitarian Architecture	98.001		UNVDZNFA8R29	749,449	-
International Republican Institute - Advanced Negotiation and Leadership Program	98.001		No Award Number	30,407	-
Population Reference Bureau - MOMENTUM Round 2C	98.001		2020-030AL	732,890	36,985
Tufts University - Feed the Future Innovation Lab for Food Systems for Nutrition	98.001		PO EP0231392	20,193	-
Total for Assistance Listing Number 98.001				1,883,075	36,985
Catholic Relief Services Foundation - Climate Monitoring and Health and Agricultural Surveillance: Efforts to Develop a Quantitative Early Warning Forecast System to Predict Food System Failures	98.RD		No Award Number	54,904	-
PATH - President's Malaria Initiative	98.RD		AID.574718-01706921-	5,772	-
Regents of the University of California - Davis - Credit for Social Change: Water Access and Improved	98.RD		A20-1825-S012	1,372	1,372
Total for Assistance Listing Number 98.RD				62,048	1,372
Total for Agency for International Development Subaward Received Research and Development				1,945,123	38,357
Department of Agriculture					
CRDF Global - Randomised trial of an intervention to increase tuberculosis notifications by private practitioners in Indonesia, plus sequencing and susceptibility sub studies□	10.001		DAA3-19-64909-2	(4,130)	-
Total for Assistance Listing Number 10.001				(4,130)	-
Community Outreach and Patient Empowerment - Navajo Fruit and Vegetable Prescription Program	10.331		AVA0417.HMS.05012019	698	-
Total for Assistance Listing Number 10.331				698	-
Family Health Council of Central Pennsylvania, Inc. - Evaluation of Family Health Council of Central	10.557		No Award Number	109,660	-
Total for Assistance Listing Number 10.557				109,660	-
University of Vermont - Integrating field and Landsat data to Monitor Forest Conditions in the New York	10.664		AWD00000334SUB000003	505	-
Total for Assistance Listing Number 10.664				505	-
Total for Department of Agriculture Subaward Received Research and Development Cluster				106,733	-
Department of Commerce					
Massachusetts Institute of Technology - 2022-2023 Sea Grant OMNIBUS - Data Driven, Causal Discovery of the Effects of Climate Change, Ocean Acidification and Management in Fish Stocks	11.417		s5966	30,841	-
Total for Assistance Listing Number 11.417				30,841	-
Trustees of Boston University - Towards an End-to-End Approach to Formal Privacy for Sample Surveys	11.609		4500003717	267,131	-
Total for Assistance Listing Number 11.609				267,131	-
Total for Department of Commerce Subaward Received Research and Development Cluster				297,972	-

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Department of Defense					
California Institute of Technology - Data-Driven Closure Models and Constitutive Relations: The Development of Principled Methodologies for Complex Multi-Physics Applications (White Paper Tracking	12.300		S619765	101,596	-
Columbia University - Reengineering the Nervous System of a Cnidarian	12.300		1(GG016259-01)	80,283	-
Drexel University - Biologically derived approaches and prototypes for the control and propulsion of swimming vehicles for riverine environments	12.300		940026	36,724	-
Johns Hopkins University - Navigating in a Complex and Noisy Environment as a Group	12.300		2005184246	69,527	-
Lehigh University - Revealing the hydrodynamic principles of three-dimensional fish schools: from	12.300		544655-78002	170,217	-
Massachusetts Institute of Technology - Hybrid Encoding for Singed Expressions (HESE) and Direct	12.300		S5181	117	-
Purdue University - Meta-Cavity-Mediated Strong Light-Matter Coupling in Two-Dimensional Materials	12.300		13001182-040	68,675	-
Regents of the University of California - A Computational Cognitive Neuroscience Approach to Understanding Event Representation and Episodic Memory	12.300		A17-0260-S004	100,891	-
Regents of the University of California - Berkeley - Carbon-based Hierarchically Integrated Synthetic	12.300		9294	(584)	-
Regents of the University of California - San Diego - Sea-Level Rise in the Indo Pacific Region: Building a Framework for Interdependent Resilience	12.300		706404	26,744	-
San Diego State University Research Foundation - Coral Reef Arks: a cost-effective and high-return tool for restoration and conservation of coral reef resources on DoD submerged lands	12.300		D11286-04 SA736 A5 5A070D 7801	59,244	-
Trustees of Boston University - Fundamental studies on the influence of angular momentum on light-	12.300		4500003518	142,761	-
University of Pittsburgh - Topological Qubits based on Graphene Nanoribbons	12.300		AWD00003971 (417688-1)	85,207	-
University of Texas - Austin - Extraordinary Electronic Switching of Thermal Transport	12.300		UTA21-000332	176,193	-
University of Washington - High Dimensional Causal Model Search	12.300		UWSC11180	(16,322)	-
Total for Assistance Listing Number 12.300				1,101,273	-
Los Alamos National Laboratory - The Rapid Assessment of Platform Technologies to Expedite	12.351		C3272	21,445	-
Regents of the University of California - Los Angeles - uED HITS – High-Throughput, Disruptive Technology to Accelerate Design of Broad-Spectrum Countermeasures and Vaccines	12.351		1445 G LC360	38,327	-
Total for Assistance Listing Number 12.351				59,772	-
Beth Israel Deaconess Medical Center - Defining Intraglomerular Mechanical Stresses and Podocyte Response in Focal Segmental Glomerulosclerosis	12.420		1063986	34,298	-
Brigham and Women's Hospital, Inc - Design Microbiome-Based Therapies to Prevent and Ameliorate	12.420		129650	124,413	-
Henry M. Jackson Foundation for the Advancement of Military Medicine, Inc. - Combat Ready Exposure Device (CRED): Validation of a Portable in vivo Exposure Biomarker Device for Lead and Other Heavy	12.420		5488	11,736	-
Research Institute of the McGill University Health Centre - Precision nutrition increases efficacy of DNA-damaging therapies in prostate cancer	12.420		10554	103,068	-
Total for Assistance Listing Number 12.420				273,515	-
Board of Regents of the University of Wisconsin System - OPTION 1: Qubits in Gate-Defined Silicon	12.431		752K205	30,376	-
Curators of the University of Missouri - Quantum State Control of Molecular Collision Dynamics	12.431		C00064278-1	168,372	-
Massachusetts Institute of Technology - A Framework for Universal Generalization via Memory-Based	12.431		S6122	83,668	-
Massachusetts Institute of Technology - Ab-Initio Solid-State Quantum Materials: Design, Production, and Characterization at the Atomic Scale	12.431		S4667-PO 226099	197,768	-
Massachusetts Institute of Technology - Efficient light-matter interfaces for Rydberg arrays and entanglement in topological quantum networks	12.431		S4963 - PO 420751	13,264	-
Massachusetts Institute of Technology - Quantum Heterostructures at Solid State and High Freq	12.431		s6014	214,468	-

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Regents of the University of California - Los Angeles - Dissecting microbiome-gut-brain circuits for microbial modulation of host cognition in response to diet and stress	12.431		0845 G XA622	1,900	-
Regents of the University of Michigan - MultiScale Network Games of Collusion and Competition	12.431		SUBK00012224	15,105	-
Stanford University - Robust Entanglement-Enhanced Metrology with Atoms and Solid-State Spins	12.431		63307516-163612	195,617	-
Technische Universiteit Delft - High-fidelity operation in spin-qubit registers	12.431		TUD 22.006 Harvard	590,025	-
University of Pittsburgh - Adaptive Self-assembled Systems: Exploiting Multifunctionality for Bottom-up Large-scale Engineering (ASSEMBLE)	12.431		CNVA00056411 (413469-1)	207,084	-
University of Southern California - Closed-Loop Multisensory Brain-Computer Interface for Enhanced	12.431		79575749	10,666	-
University of Southern California - Realizing Cyber Inception: Towards a Science of Personalized	12.431		123811799	75,433	-
Total for Assistance Listing Number 12.431				1,803,746	-
Henry M. Jackson Foundation for the Advancement of Military Medicine, Inc. - Army Study to Assess Risk and Resilience in Service Members (STARRS 3)	12.750		5732	(6,468)	-
Henry M. Jackson Foundation for the Advancement of Military Medicine, Inc. - Predictors of Treatment Response – PTSD Related Sleep Disturbances: Usage of Large Datasets	12.750		5905	(10,637)	-
Henry M. Jackson Foundation for the Advancement of Military Medicine, Inc. - Study to Assess Risk and Resilience of Service Members (STARRS LS)	12.750		5919	(21,062)	-
Henry M. Jackson Foundation for the Advancement of Military Medicine, Inc. - Study to Assess Risk and Resilience of Service Members (STARRS LS)	12.750		6156	2,049,612	-
Total for Assistance Listing Number 12.750				2,011,445	-
Columbia University - Ensembles of Molecules in Controlled Quantum States for Quantum Simulations, Ultracold Reactions, and Precision Metrology	12.800		5(GG016303-01)	120,894	-
Cornell University - Plant-inspired thermal metamaterials with tunable properties	12.800		139783-21204	53,575	-
Duke University - Meta-imaging: Sensing, Processing and Computing with Dynamic Metasurfaces	12.800		313-1118	177,732	-
Henry M. Jackson Foundation for the Advancement of Military Medicine, Inc. - Study of prevention and treatment of hypoxic damage using engineered therapeutic proteins	12.800		6115	49,053	-
Massachusetts Institute of Technology - Multiplexed Quantum Repeaters for High-Speed Quantum	12.800		S5090 - PO 473660	28,559	-
Massachusetts Institute of Technology - MURI: A synthetic biology programming language and foundational control theory with application to guided multicellular mammalian 3D shape shifters	12.800		s6150	260,568	-
Massachusetts Institute of Technology - Prediction, Statistical Quantification and Mitigation of Extreme Events Caused by Exogenous Causes or Intrinsic Instabilities	12.800		S5203	118,116	-
Stanford University - ANSRE: ANalysis and Synthesis of Rare Events	12.800		62455257-159327	239,188	-
Tufts University - Computer-controlled fluidic delivery system and multiplexed microelectrode array for research in basal cognition in cells and tissues	12.800		EP0240016	43,690	-
University of Colorado at Boulder - Quantum Phononics to Advance Quantum Information Processing	12.800		1563927	531,590	-
University of Notre Dame - Long-coherence high-fidelity electron qubits on quantum solids	12.800		204833HC	98,679	-
University of Texas - Austin - ATOMIC-SCALE MANIPULATIONS OF INTERBAND OPTICAL	12.800		UTAUS-SUB00000688	338,736	-
Total for Assistance Listing Number 12.800				2,060,380	-
Carnegie Mellon University - RECTIFY: Rechargeability Enabled by Coated inTerfaces and dIFferentable	12.910		1190068-455964	16,791	-
International Business Machines Corporation - Harvard-IBM RFP for DARPA HR001117S0055 (DSSoC)	12.910		CW2914640	61,677	-
Regents of the University of California - Berkeley - Driven Quantum Matter for Metrology (DQM2)	12.910		9965	(186)	-
Stottler Henke Associates, Inc. - Pathogen Classification Tool	12.910		7872192-01	36,754	-
University of Pennsylvania - PIPES	12.910		588097	44,427	-
Total for Assistance Listing Number 12.910				159,463	-

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International Business Machines Corporation - Artificial Mental Models for Machine Common Sense	12.RD		CW3013552	113,658	-
Leidos Biomedical Research, Inc - Robust Advanced Quality Protein Manufacturing On-Demand	12.RD		P010285370	370,783	-
Perceptronics Solutions - Topology-Agnostic Resource Management and Control (TARMAC)	12.RD		No Award Number	165,702	-
RallyPoint Networks, Inc. - Evaluation and Improvement of a Peer-to-Peer Social Support Platform for Military Service Members and Veterans	12.RD		No Award Number	123,609	-
University of Rochester - Optimizing digital behavioral treatment for co-occurring insomnia and depression	12.RD		SUB00000456AM1 /URFAO GR533512	155,466	-
Total for Assistance Listing Number 12.RD				929,218	-
Total for Department of Defense Subaward Received Research and Development Cluster				8,398,812	-
Department of Education					
Omega Community Development Corporation - Hope Zone Promise Neighborhoods	84.215N		No Award Number	22,749	-
Total for Assistance Listing Number 84.215N				22,749	-
American Institutes for Research - Building and Sustaining the Capacity of Local Math Coaches to Support College- and Career-Ready Mathematics Instruction	84.305		482000001	55,804	-
Florida State University - Efficacy of the Core Knowledge Language Arts Listening and Learning Read Aloud Program in Kindergarten through Second Grade Classrooms	84.305		R01972	(765)	-
Manpower Demonstration Research Corporation - Identifying Best Practices for Estimating Average Treatment Effects in Cluster Randomized Trials	84.305		1475-HU-2000-01	86,496	-
Regents of the University of California - Berkeley - Improving methods for policy impact evaluation with group panel data in education research	84.305		10415	134,345	-
SRI International - Initial Efficacy Study of Data Wise	84.305		PO50657	26,000	-
Total for Assistance Listing Number 84.305				301,880	-
Guilford Public Schools - Supporting Controversial Issues Discussions: Phase 3	84.424A		No Award Number	10,751	-
Total for Assistance Listing Number 84.424A				10,751	-
Boston After School and Beyond - Boston After School and Beyond School Year 2023/24	84.425		No Award Number	15,698	-
Boston After School and Beyond - Boston After School and Beyond Summer 2023	84.425		No Award Number	19,060	-
Boston After School and Beyond - School Year 2022-23 OIF Program Details for BoSTEM	84.425		No Award Number	(219)	-
Ohio Department of Education - Proving Ground: Ohio Attendance Network	84.425		No Award Number	1,073,035	-
Total for Assistance Listing Number 84.425				1,107,574	-
Total for Department of Education Subaward Received Research and Development Cluster				1,442,953	-
Department of Energy					
Lawrence Berkeley National Lab - Center for Novel Pathways to Quantum Coherence in Materials	81.000		7677901	81,621	-
Lawrence Berkeley National Lab - Conceptual Engineering Design and Prototype of Small Aperture	81.000		7590651	320,067	-
Lawrence Berkeley National Lab - Operation of the Harvard Forest Core Site in the AmeriFlux Network	81.000		7549117	279,817	-
Lawrence Berkeley National Lab - Quantum Systems Accelerator	81.000		7568717	2,982,401	-
Total for Assistance Listing Number 81.000				3,663,906	-
California Institute of Technology - Quantum Communication Channels for Fundamental Figures Physics	81.049		S490356	146,216	-
Dana-Farber Cancer Institute - Optimizing enzymes for plastic upcycling using machine learning design	81.049		4805803	159,435	-
Northwestern University - Center for Bio-Inspired Energy Science (CBES)	81.049		SP0027267-PROJ0007138	6,023	-
University of Illinois at Urbana-Champaign - EFRC Regenerative Energy-Efficient Manufacturing of Thermoset Polymeric Materials (REMAT)	81.049		110904-19218	188,609	-
University of Texas - Arlington - QPix: Achieving kiloton scale pixelated readout for Liquid Argon Time	81.049		2019GC5293	26,083	-

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Yale University - The Mechanisms, Impacts and Predictability of Extreme El Niño events in E3SM and Other Earth System Models: Quantifying the Role of Westerly Wind Bursts	81.049		CON-80003942(GR118053)	139,295	-
Total for Assistance Listing Number 81.049				665,661	-
Massachusetts Institute of Technology - Micro-mechanically guided high-throughput alloy design exploration towards metastability-induced hydrogen embrittlement resistance Technical	81.087		S5045	155	-
Quino Energy, Inc. - Flow Battery Systems Manufacturing	81.087		QE-SC-2022-02	165,819	-
Total for Assistance Listing Number 81.087				165,974	-
Trustees of Boston University - A New Risk Assessment and Management Paradigm (NewRAMP) in	81.135		4500003690	63,000	-
University of Houston - MINI-PULPS: Miniaturized Pulsed Power Systems for Mission Critical	81.135		R-23-0002	191,467	-
University of Maryland, College Park - New Environmental-Thermal Barrier Coatings for Ultrahigh	81.135		98476-Z7130202	(7,221)	-
University of Maryland, College Park - New Environmental-Thermal Barrier Coatings for Ultrahigh	81.135		130611-Z7185201	136,619	-
Total for Assistance Listing Number 81.135				383,865	-
Brookhaven National Laboratory - ATLAS NSW Front-end Electronics Commissioning and Maintenance	81.RD		415554	105,131	-
Brookhaven National Laboratory - Co-design Center for Quantum Advantage (C2QA)	81.RD		390035	462,951	-
Brookhaven National Laboratory - Dynamics and Control of Magnetic and Charge Order in Complex	81.RD		411807	81,025	-
Brookhaven National Laboratory - Inorganic-Polymer-Composite Electrolyte with architecture design for Lithium Metal Solid State Batteries	81.RD		414652	71,899	-
Fermi National Accelerator Laboratory - Designing efficient edge AI with physics phenomena	81.RD		702158	9,828	-
Iowa State University - EFRC: Center for the Advancement of Topological Semimetals (CATS)	81.RD		SC-23-578	561,660	-
Lawrence Berkeley National Lab - AIDE-QC: Advancing Integrated Development Environments for Quantum Computing through Fundamental Research	81.RD		7721986	125,058	-
Lawrence Livermore National Laboratory - Shape Changing of Responsive Elastometer Structures	81.RD		B650176	56,257	-
Oak Ridge National Laboratory - Abisko Codesign in the Wild	81.RD		CW34496	454,018	-
Oak Ridge National Laboratory - Quantum Science Center	81.RD		CW7492	513,873	-
Pacific Northwest National Laboratory - Design Space Exploration of Tiled Architectures for	81.RD		672868	25,000	-
Pacific Northwest National Laboratory - Developing a Supervised Machine Learning Language Processing Tool for Universities to Detect Problematic Research and Partnerships	81.RD		677295	40,959	-
Pacific Northwest National Laboratory - Long Lifetime Aqueous Soluble Organic Flow Battery	81.RD		535264	(187)	-
Pacific Northwest National Laboratory - Long Lifetime Aqueous Soluble Organic Flow Battery	81.RD		654799	136,534	-
Pacific Northwest National Laboratory - Remodeling Practices and the Energy Retrofit Challenge: Identifying and Addressing Remodeling Industry Factors	81.RD		632548	44,338	-
Pacific Northwest National Laboratory - Two Truths - Multi-Project Wafer (MPW)	81.RD		712386	17,444	-
Total for Assistance Listing Number 81.RD				2,705,788	-
Total for Department of Energy Subaward Received Research and Development Cluster				7,585,194	-
Department of Homeland Security					
Rand Corporation - At the Vanguard: The Future of Emergency Management Executive Leadership	97.RD		SCON-00000563	1,513	-
Rand Corporation - Monkeypox Study	97.RD		SCON-0000642	196,417	-
Rand Corporation - Vanguard: The Future of Emergency Management Executive Leadership seminar	97.RD		SCON-00000570	(1,512)	-
Total for Assistance Listing Number 97.RD				196,418	-
Total for Department of Homeland Security Subaward Received Research and Development				196,419	-
Department of Housing & Urban Development					
Columbia University - The Impact of Housing Assistance on Residential Environmental Exposures	14.RD		2(GG014981-01)	49,006	-
Total for Assistance Listing Number 14.RD				49,006	-

The accompanying notes are an integral part of this schedule.

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Total for Department of Housing & Urban Development Subaward Received Research and Department of State				49,006	-
International Legal Foundation - Reducing Unnecessary and Prolonged Pretrial Detention	19.703		SINLEC23CA0442	87,228	-
Total for Assistance Listing Number 19.703				87,228	-
CRDF Global - Foreign Interference Countermeasures Training and Outreach Study Tour for the	19.RD		PO23-00062	49,953	-
Total for Assistance Listing Number 19.RD				49,953	-
Total for Department of State Subaward Received Research and Development Cluster				698,105	-
Department of the Interior					
Southern California Earthquake Center - 2022 SCEC-USGS Research Collaboration at Harvard	15.808		SCON-00003728	32,259	-
Total for Assistance Listing Number 15.808				32,259	-
Total for Department of the Interior Subaward Received Research and Development Cluster				32,259	-
Department of the Treasury					
COVID-19: Boston Public Health Commission - The Family Van's Multimedia Mental Health Awareness and Education Campaign for Youth of Color in Boston	21.027		No Award Number	114,843	-
COVID-19: Wyoming Business Council - Wyoming's Pathways to Growth, Jobs, and Prosperity	21.027		No Award Number	1,173,403	-
COVID-19: Wyoming Business Council - PDIA for Economic Development in Wyoming	21.027		No Award Number	61,304	-
Total for Assistance Listing Number 21.027				1,349,550	-
Total for Department of the Treasury Subaward Received Research and Development Cluster				1,349,550	-
Department of Veterans Affairs					
Boston University School of Public Health - Health Policy and Program Evaluation to Improve Quality and Efficiency of Veteran's Affairs Healthcare	64.RD		4500004597	157,814	-
Boston University School of Public Health - Health Policy and Program Evaluation to Improve Quality, Equity, and Efficiency of Veteran's Affairs Healthcare: Phase 2	64.RD		4500004936	424,746	-
Boston VA Research Institute, Inc. - The Prostate Cancer, Genetic Risk, and Equitable Screening Study (ProGRESS): A pragmatic trial of precision prostate cancer screening	64.RD		36C24E24C0004	6,079	-
Total for Assistance Listing Number 64.RD				588,639	-
Total for Department of Veterans Affairs Subaward Received Research and Development Cluster				588,639	-
Department of Health and Human Services					
Cleveland Clinic Lerner College of Medicine of CWRU - Probing the Therapeutic Importance of BCL-XL-dependent Apoptotic Pathways in Kidney Cancer	12.420		CCF23897736	17,757	-
Total for Assistance Listing Number 12.420				17,757	-
RTI International - Cost and Cost Effectiveness of TBESC-III LTBI Primary Care Interventions	93.000		1-312-0218720-67129L	16,856	-
Total for Assistance Listing Number 93.000				16,856	-
AIDS Prevention Initiative in Nigeria, Ltd/Gte. - Accelerated Comprehensive AIDs Response for Epidemic control and Sustainability (CARES)	93.067		GH00-2416	377,106	-
Total for Assistance Listing Number 93.067				377,106	-
Silent Spring Institute - Assessment of PFAS exposures and health effects in two Massachusetts communities with PFAS drinking water contamination	93.070		7101-HSPH-Y5	171,306	-
Total for Assistance Listing Number 93.070				171,306	-
Commonwealth of Massachusetts/Department of Public Health - MassCPR-Pathogens Genomics Center	93.084		INTF5104H78W22195356	788,326	-
Stanford University - Prevention Policy Modeling Lab	93.084		62380390-148206	646,555	-
University of Utah - Modeling and Simulation to Support Epidemiological Decision-Making in Healthcare	93.084		10056438-01	165,905	-
Total for Assistance Listing Number 93.084				1,600,786	-

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Charles River Analytics Inc. - ART Provider and Patient Resource to Improve Communication about Outcomes and Treatment (APRICOT)	93.103		SC2023001	8,312	2,386
Harvard Pilgrim Health Care - Sentinel Initiative	93.103		WO2008	(142)	-
Janssen Research and Development, LLC - Development of novel methods to enable robust comparison of real-world Progression Free Survival (rwPFS) and Clinical Trial PFS in Multiple Myeloma	93.103		C2023019070	10,076	-
Total for Assistance Listing Number 93.103				18,246	2,386
The Board of Regents of the University of Oklahoma - TeamBirth Oklahoma (OPQIC Project)	93.110		RS20210327-01	184,541	-
Total for Assistance Listing Number 93.110				184,541	-
Arizona State University - Aflatoxin Exposure, Growth Faltering, and the Gut Microbiome among Children	93.113		ASUB00001297	20,930	-
Beth Israel Deaconess Medical Center - A Randomized Controlled Trial of Home Air Purification for	93.113		1062311	36,962	-
Board of Trustees of the University of Illinois - Phthalate and Hot Flashes in Women	93.113		086885-16438	(20,545)	-
Boston University School of Public Health - CAFÉ: a Research Coordinating Center to Convene, Accelerate, Foster, and Expand the Climate Change and Health Community of Practice.	93.113		4500004702	499,380	-
Boston University School of Public Health - Evidence to improve heat warning effectiveness in reducing	93.113		4500003573	47,583	-
Brigham and Women's Hospital, Inc - Early Life Exposure to the Natural Built and Social Environments	93.113		121157	153,955	-
Brigham and Women's Hospital, Inc - Exposure to phthalates and OP flame retardants and long-term maternal cardiovascular and metabolic health	93.113		127478	228,000	-
Brigham and Women's Hospital, Inc - Male pesticide exposure, reproductive health and epigenetics	93.113		129579	155,269	-
Brigham and Women's Hospital, Inc - Per and poly fluoroalkyl substances, apolipoproteins, and risk of	93.113		130845	1,984	-
Brigham and Women's Hospital, Inc - The effects of environmental exposures on semen quality and the	93.113		118582	112,650	-
Brown University - Perfluoroalkyl Substances and Risk of Kidney Cancer in US Men and Women	93.113		2397	64,089	-
Children's Hospital Boston - Indoor Air Quality and Respiratory Morbidity in School-Aged Children with	93.113		GENFD0002318985	61,265	-
Children's Hospital Boston - Interdisciplinary approaches for understanding how arsenic and micronutrients affect the epigenome to influence spina bifida risk	93.113		GENFD0002512587	19,591	-
Columbia University - Air Pollution and Pregnancy Loss	93.113		3(GG017459-01)	144,584	-
Columbia University - Effect of Early-Life Exposure to Metal Mixtures on Lung Function and Mitochondrial	93.113		3(GG015212-01)	11,783	-
Columbia University - Extracellular vesicles in Environmental Epidemiology Studies of Aging	93.113		1(GG017540-04)	60,350	-
Columbia University - Integrating air pollution prediction models: Uncertainty quantification and	93.113		1(GG014961-01)	220,752	-
Drexel University - Examining dietary modifiers of associations between air pollution and autism-related	93.113		900159	18,154	-
Emory University - Assessing the 5-Year Effects of a 500-day Liquefied Petroleum Gas Cooking	93.113		A741292	48,442	-
Intervention: Continued Follow Up of Participants from the Household Air Pollution Intervention Network					
Harvard Pilgrim Health Care - Long-term prospective associations of PFAS with musculoskeletal and cardiovascular health among older adults	93.113		AH000955	12,476	-
Icahn School of Medicine at Mount Sinai - Methods for data integration and risk assessment for	93.113		0255-A401-4609	(146)	-
Icahn School of Medicine at Mount Sinai - Organic-metal mixtures and neurodevelopment	93.113		0255-G891-4609	125,569	-
Icahn School of Medicine at Mount Sinai - Prenatal metal mixtures and neurodevelopment: Role of	93.113		0255-B981-4609	93,555	-
Icahn School of Medicine at Mount Sinai - Stress-Chemical Interactions and Neurobehavior in School	93.113		0255-5545-4609	691	-
New York University Langone Medical Center - Brain Influences of Phthalates and Bisphenols in	93.113		20-A0-00-1005266	16,275	-
Rutgers Biomedical and Health Sciences - Ambient Air Pollution, Weather, and Placental Abrupton	93.113		3041	12,697	-
Silent Spring Institute - Expanding effective report-back of environmental exposures among new	93.113		7372-HSPH	16,612	-
University of Rochester - Statistical methods to characterize casual mechanisms by which air pollution affects the recurrence of cardiovascular events	93.113		SUB00000787-GR534387	111,187	-
University of Southern California - The role of air pollution in emotional neurodevelopment and risk for	93.113		138940130	32,530	-

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University of Southern California - Urban air pollution and neurobehavioral trajectories in the ABCD study	93.113		138940268	65,010	-
University of Utah - The Influence of Multiple Exposures on Suicide Risk	93.113		10057452-01	147,369	-
Wayne State University - Paternal preconception phthalates and reproductive health - potential mediation through sperm DNA methylation	93.113		WSU22055	(39)	-
Yale University - Statistical Methods to Account for Exposure Uncertainty in Environmental Epidemiology	93.113		CON-80001508	338,073	-
Total for Assistance Listing Number 93.113				2,857,037	-
Case Western Reserve University - Multi-Level Interventions to Reduce Oral Health Disparities among	93.121		RES601559	18,666	-
Mbarara University of Science and Technology - Oral diseases and quality of life in older adults on ART	93.121		8228086-01	15,158	-
Regents of the University of California - Los Angeles - Personalized Digital Behavior Change	93.121		1350 G LA770	187,558	-
Regents of the University of Michigan - Michigan-Pittsburgh-Wyss Regenerative Medicine Resource Center: Advancing Dental, Oral, and Craniofacial Regeneration to Clinical Trial Initiation	93.121		SUBK00011418	292,771	-
Regents of the University of Michigan - Michigan-Pittsburgh-Wyss Regenerative Medicine Resource Center: Advancing Dental, Oral, and Craniofacial Regeneration to Clinical Trial Initiation	93.121		SUBK00014058	158,166	-
The Forsyth Institute - Forsyth Training in Oral Health Research	93.121		HSDM026110-2785	135,558	-
Virginia Commonwealth University - Epigenetic Regulation of Periodontal Inflammation	93.121		FP00010440 SA003	28,567	-
Total for Assistance Listing Number 93.121				836,444	-
Henry M. Jackson Foundation for the Advancement of Military Medicine, Inc. - Firearm Behavioral Practices and Suicide Risk in US Army Soldiers and Veterans	93.136		5485	7,023	-
Total for Assistance Listing Number 93.136				7,023	-
University of Rhode Island - Assessing the Contribution of Polyfluoroalkyl Precursors to Diverse PFAS Exposures near Contaminated Sites-Project 1	93.143		0009912/112822 Harvard	282,247	-
Total for Assistance Listing Number 93.143				282,247	-
Boston VA Research Institute, Inc. - Pragmatic randomized trial of polygenic risk scoring for common	93.172		0223FEDa	20,381	-
Brigham and Women's Hospital, Inc - Network tools to Understand Sex- and Gender-Specific Drivers of	93.172		125975	252,213	-
Brigham and Women's Hospital, Inc - Predicting the impact of genetic variants, genes and pathways on	93.172		126094	261,590	-
California Institute of Technology - Alliance Central: A platform for sustainable development of next	93.172		S454486	811,865	-
Children's Hospital Boston - Providing ethical guidance for the development of individualized genomic	93.172		GENFD0002264202	33,275	-
Columbia University - Single-Molecule Electronic Nucleic Acid Sequencing-by-Synthesis Using Novel Tagged Nucleotides and Nanopore Constructs	93.172		1(GG015773)	34,465	-
Dana-Farber Cancer Institute - Integrative modelling of single-cell data to elucidate the genetic	93.172		1306701	89,638	-
Stanford University - ELSI.hub: National Center for ELSI Resources and Analysis	93.172		62424230-139696	(6,442)	-
The Broad Institute - A Foundational Resource of Functional Elements, TF footprints and Gene	93.172		5001226-5500001653	379,133	-
The Feinstein Institute for Medical Research - Polygenic Embryo Screening: Towards Informed Decision-	93.172		AWD00001403-Harvard	224,172	-
UMass Chan Medical School - Predictive Modeling of the Functional and Phenotypic Impacts of Genetic	93.172		SUB000000066	267,671	-
University of Utah - Calypso: a web software system supporting team-based, longitudinal genomic	93.172		10061038-02-HARV	381,126	-
Total for Assistance Listing Number 93.172				2,749,087	-
Brigham and Women's Hospital, Inc - Genetic Approach to Therapy for DFNA9	93.173		129208	50,532	-
Massachusetts Eye and Ear Infirmary - Cochlear Synaptopathy: Prevalence, Diagnosis and Functional	93.173		531087	6,033	-
Massachusetts Eye and Ear Infirmary - Development of Gene Therapy for Hereditary Deafness using	93.173		531049	277,553	-
Massachusetts General Hospital - Enhanced gene delivery for CNS and Sensory Disorders	93.173		234217	36,761	-
San Diego State University Research Foundation - The Association of Perinatal HIV Infection and Hearing Loss in Children of Cape Town, South Africa	93.173		SA0000594	53,437	-
Total for Assistance Listing Number 93.173				424,316	-

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Brigham and Women's Hospital, Inc - Contribution of phytochemicals to gut symbiont colonization and synthesis of immunomodulatory sphingolipids	93.213		120907	(29,307)	-
Total for Assistance Listing Number 93.213				(29,307)	-
Beth Israel Deaconess Medical Center - The Epidemiology of Diagnostic Error in Emergency Care in the United States and the Association with Patient Outcomes and Healthcare Costs	93.226		FRT65919	21,182	-
Harvard Pilgrim Health Care - Optimizing Choice of Health Insurance for Diabetes (OrCHID)	93.226		AH000972	17,935	-
Massachusetts General Hospital - Federally Qualified Health Centers and Care for Vulnerable	93.226		231035	37,514	-
National Bureau of Economic Research - Measuring the Clinical and Economic Outcomes Associated	93.226		41610.05.33.00- HMS1	(18,025)	-
Oregon Health and Science University - Private Equity Acquisitions in Primary Care: Effects on the	93.226		1023115HARVARD	62,902	-
Total for Assistance Listing Number 93.226				121,508	-
Beth Israel Deaconess Medical Center - Mechanisms of arousal in sleep apnea	93.233		GRT65546	148,309	-
Brigham and Women's Hospital, Inc - The role of irregular sleep schedules as a ubiquitous marker of chronic circadian disruption in cardiometabolic disease development	93.233		125756	67,565	-
Total for Assistance Listing Number 93.233				215,874	-
Baylor College of Medicine - Brainshare: Sharing Data in BRAIN Initiative Studies	93.242		P700000284	12,321	-
Baylor College of Medicine - Pediatric Deep Brain Stimulation: Neuroethics and Decision Making	93.242		7000001720	36,993	-
Baylor College of Medicine - Polygenic Risk Scores in Child and Adolescent Psychiatry: Ethical, Clinical,	93.242		P700000764	184,973	-
Boston Medical Center - Preventing Mental Disorders Among Women Internally Displaced by War in	93.242		7095-HSPH-01	41,445	-
Bradley Hospital - What works for Whom in Pediatric OCD	93.242		712-7678	10,668	-
Brigham and Women's Hospital, Inc - In-utero exposure to psychotropic medications and the risk of	93.242		119487	13,341	-
Cambridge Health Alliance - ALACRITY for Early Screening and Treatment of High Risk Youth (E-	93.242		HMS 3354-Methods	44,847	-
Cambridge Health Alliance - ALACRITY for Early Screening and Treatment of High Risk Youth (E-	93.242		HMS 3354-R34-2	16,674	-
Cambridge Health Alliance - ALACRITY for Early Screening and Treatment of High Risk Youth (eSToRY)	93.242		Pilot1-Year1□	7,961	-
Cambridge Health Alliance - ALACRITY for Early Screening and Treatment of High Risk Youth (R34- 3)	93.242		HMS 3354-R34-3	20,649	-
Understanding the Role of Trauma Over the Life Course in Order to Improve Trauma-Informed Care					
Cambridge Health Alliance - Medicaid Value Based Payment Models and Healthcare Equity for Adults	93.242		3304-NCE-HMS	27,422	-
Children's Hospital Boston - Molecular Codes for the Establishment of Functionally Segregated	93.242		GENFD0002354043	261,786	-
Children's Hospital Boston - Neural-immune mechanisms and synaptic connectivity in psychiatric illness	93.242		GENFD0002315408	703,577	-
CIDACS-Centro de Integração de Dados e Conhecimentos para Saúde - Using a 115 million individuals' cohort to identify social drivers for mental illnesses and exploring mechanisms of a Cash Transfer	93.242		4600009620	71,096	-
Cold Spring Harbor Laboratory - A Comprehensive Center for Mouse Brain Cell Atlas	93.242		64580521 / 64580529	(2,616)	-
Dimagi, Inc - A novel digital platform for measurement-based peer supervision of non-specialist providers conducting brief psychological interventions	93.242		No Award Number	12,262	-
Georgia Institute of Technology/Georgia Tech Research Corporation - Modularly built, complete, coordinate- and template-free brain atlases	93.242		AWD-003314-G1	411,737	-
Harvard Pilgrim Health Care - Sex-specific heterogeneity in genetic association studies of depression	93.242		PH000857A	37,261	-
London School of Hygiene and Tropical Medicine - IMPLementation of evidence based facility and community interventions to reduce the treatment gap for depRESSion (IMPRESS)	93.242		2006-0816EPH - EPPHZA2	65,385	-
Massachusetts General Hospital - Cellular models of fetal neurodevelopment in maternal SARS-CoV-2	93.242		242014	307,459	-
Massachusetts General Hospital - Center for Suicide Research and Prevention	93.242		243979	245,163	-
Massachusetts General Hospital - CSRP - Administrative Core	93.242		243978	225,864	-
Massachusetts General Hospital - Data-driven subtyping in major depressive disorder	93.242		238763	253,793	-

The accompanying notes are an integral part of this schedule.

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Massachusetts General Hospital - Effectiveness and Implementation of a Clinician Decision Support System to Prevent Suicidal Behaviors	93.242		243980	78,128	-
Massachusetts General Hospital - Fostering diversity in the next generation of HIV researchers to	93.242		237315	127,297	-
Massachusetts General Hospital - Sex Differences in Major Depression: Impact of Prenatal Stress-	93.242		236501	18,425	-
Massachusetts General Hospital - SIG - Effectiveness and Implementation of a Clinician Decision Support System to Prevent Suicidal Behaviors	93.242		243980	212,199	-
Massachusetts Institute of Technology - Multiplexed Nanoscale Protein Mapping Through Expansion	93.242		S5212	239,566	-
Massachusetts Institute of Technology - Structured light temporal focusing depth-resolved wide-field FLIM-FRET for in vivo synaptic imaging	93.242		S5749	64,600	-
Michigan State University - Genetic Influences on Infant Brain Development: Understanding the	93.242		RC112665F	38,707	-
National Institute of Psychiatry Ramon de la Fuente Muniz - Computerized detection and internet-based treatment of common mental disorders among college students in two Latin American LMICs	93.242		150285	258,691	-
Purdue University - Ultra-high resolution, multiplexed single molecule nanoscopy and functional	93.242		11001055-012	46,961	-
Regents of the University of California - Irvine - Understanding neural circuits for associative memory in	93.242		2019-3822	20,218	-
Regents of the University of California - Los Angeles - Integrating case-control transcriptomic and genetic data in admixed individuals to identify disease genes for schizophrenia and bipolar disorder	93.242		2E+13	82,791	-
Regents of the University of California - Los Angeles - Joint Genomic and Statistical Analyses of Schizophrenia and Bipolar to Decipher Genetic Susceptibility	93.242		2000GVR227	(11,222)	-
Regents of the University of California - San Diego - Psychiatric Genomics Consortium for PTSD	93.242		123557538	72,693	-
Regents of the University of Michigan - Development of a scalable strategy for reconstructing cell-type determined connectome of the mammalian brain	93.242		SUBK00012615	109,795	-
Regents of the University of Minnesota - Highly Portable and Cloud-Enabled Neuroimaging Research: Confronting Ethics Challenges in Field Research with New Populations	93.242		P008237301	52,186	-
Research Foundation of CUNY (City University of New York) - Brief digital intervention to increase COVID-19 vaccination among individuals with anxiety or depression	93.242		CM00008794-00	9,176	-
Stanford University - Sex hormones and post-traumatic stress disorder (PTSD)	93.242		62477243-141397	59,705	-
The Broad Institute - 1/4 Powering Genetic Discovery for Severe Mental Illness in Latin American and	93.242		5001976-5500002023	192,498	-
The Broad Institute - Genetic neuroscience: How human genes and alleles shape neuronal phenotypes	93.242		5000485-5500001075	(7,374)	-
The Broad Institute - Genetic neuroscience: How human genes and alleles shape neuronal phenotypes	93.242		5000485-5500001103	15,879	-
The Broad Institute - Genetics of PTSD in African Ancestry Populations: Enhancing discovery by	93.242		5002032-5500002017	231,844	-
The Broad Institute - Psychosis Genetics Research in Africa: Building Capacity by Investing in People	93.242		5000705-5500001338	270,596	-
The Broad Institute - Statistical methods to localize disease heritability and identify biological	93.242		5001956-5500002041	67,051	-
The Broad Institute - Systematic identification of enhancers to target the breadth of excitatory and inhibitory neuronal cell types in the cerebral cortex	93.242		5001628-5500001841	1,036,917	-
The McLean Hospital Corporation - Dysregulation of Appetitive and Aversive Amygdala Circuits in	93.242		401677	373,737	-
The McLean Hospital Corporation - Laboratory for Early Psychosis Research (LEAP) - Methods Core	93.242		401567	(22,716)	-
The McLean Hospital Corporation - Laboratory for Early Psychosis Research (LEAP) - Methods Core	93.242		402064	59,122	-
The McLean Hospital Corporation - Laboratory for Early Psychosis Research (LEAP) - Project 3	93.242		401659	(8,337)	-
The McLean Hospital Corporation - Laboratory for Early Psychosis Research (LEAP) - Signature Project 1 - Randomized controlled trial of enhanced coordinated specialty care (CSC 2.0)	93.242		402065	29,569	-
The McLean Hospital Corporation - Laboratory for Early Psychosis Research (LEAP) – Admin Core	93.242		402063	11,615	-
The McLean Hospital Corporation - Laboratory for Early Psychosis Research (LEAP) – Exploratory Project 1 - Comparative effectiveness of pharmacologic strategies treat first episode psychosis	93.242		402066	31,679	-

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The McLean Hospital Corporation - Predicting the onset of depression in at-risk adolescents from Trustees of Boston University - SCH: INT: Collaborative Research: Passive sensing of social isolation and loneliness: A digital phenotyping approach	93.242 93.242		401500 4500003257	5,545 51,077	- -
University of California, San Diego - Toward a human adult brain cell atlas with single-cell technologies	93.242		111911793 (S9002169)	41,963	-
University of Maryland, Baltimore - Internal Dynamics of the Postsynaptic Density	93.242		18863	92,117	-
University of Maryland, College Park - Effects of Early Psychosocial deprivation on mental health in early	93.242		85120-20264204	51,471	-
University of North Carolina - Chapel Hill - Adolescent Girls' Risk for Suicide Across the Menstrual Cycle: Examining Stress and Negative Valence Systems Longitudinally	93.242		5117205	87,078	-
University of North Carolina - Chapel Hill - PRIMARY CILIA: A SIGNALING GATEWAY TO NEURAL	93.242		5125724	195,348	-
University of Washington - HIV self-testing and PrEP to increase testing and prevention uptake among male partners and improve postpartum ART use in PMTCT B+ programs in Uganda	93.242		UWSC10153	2,154	-
Yale University - Biopsychosocial mechanisms underlying internalizing psychopathology in a prospective, population-based cohort of sexual minority young adults	93.242		CON-80003007 (GR112951)	31,997	-
Total for Assistance Listing Number 93.242				7,330,807	-
RTI International - Mental Disorders Prevalence Study (MDPS)	93.243		7-312-0217186-65732L	48,694	-
Total for Assistance Listing Number 93.243				48,694	-
Yale University - Deep Phenotyping of Heavy Drinking in Young Adults with Behavioral Scales, Neuropsychological Tasks, and Smartphone Sensing Technology	93.273		CON-80004335 (GR119583)	15,811	-
Total for Assistance Listing Number 93.273				15,811	-
Arizona State University - Unpacking Disparities in Opioid Use Disorder Treatment Quality	93.279		ASUB00001227	210,431	-
Brandeis University - Center to Improve System Performance for Substance Use Disorder Treatment	93.279		GR404662 HMS	65,443	-
Brandeis University - Center to Improve System Performance for Substance Use Disorder Treatment -	93.279		GR404664 HMS	103,317	-
Brandeis University - Center to Improve System Performance for Substance Use Disorder Treatment -	93.279		GR404665 HMS	41,464	-
Brandeis University - Center to Improve System Performance for Substance Use Disorder Treatment-	93.279		GR404663 HMS	212,202	-
Brigham and Women's Hospital, Inc - Elucidating Mechanisms of Pregnancy's Protective Effect on Drug Abuse Using Integrated Data Analysis	93.279		129004	46,759	-
Brigham and Women's Hospital, Inc - The Comparative Effectiveness and Safety of Pharmacotherapies for the Treatment of Opioid Use Disorder in Pregnancy	93.279		123125	70,853	-
Emory University - Development and validation of a porcine model of spinal cord injury-induced	93.279		A942850	55,638	-
Regents of the University of California - San Diego - The Healthy Brain and Child Development National	93.279		704935	21,202	-
Regents of the University of Michigan - Center for Methodologies for Adapting and Personalizing Prevention, Treatment and Recovery Services for SUD and HIV (MAPS)	93.279		SUBK00013920	612,934	-
Trustees of Dartmouth College - Stemming the Tide: The Role of Payment and Delivery System Reform in Combating the Opioid Epidemic	93.279		R1468	192,410	-
University of Pittsburgh - Regulation of Dopamine Transporter by Trafficking	93.279		AWD00007893 (139474-2)	17,811	-
Yale University - Clinical Trials Network New England Consortium Node: Admin Supplement: Post-	93.279		CON-80005069	12,708	-
Total for Assistance Listing Number 93.279				1,663,172	-
COVID-19: Stanford University - COVID-19 Policy Modeling and Forecasting for Public Health Decision	93.283		62888823-250198	(3,960)	-
Total for Assistance Listing Number 93.283				(3,960)	-
Brigham and Women's Hospital, Inc - Optimization of ultrasound-mediated drug delivery to the brain	93.286		127834	46,075	-
Massachusetts General Hospital - Connectome 2.0: Developing the next generation human MRI scanner for bridging studies of the micro-meso-and macro-connectome	93.286		233327	(4,025)	-
Massachusetts General Hospital - Vascularized kidney organoids on chip for efficacy and toxicity testing	93.286		238776	110,280	-

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Stanford University - Probing basophil function in microfluidic systems of allergic disease diagnosis	93.286		63197839-174688	16,577	-
The University of Memphis - mHealth Resource Center for Discovery, Optimization, and Translations	93.286		A21-0019-S006-A05	127,025	-
Trustees of Boston University - NeuroTech Harbor: Our nation's first equitech ecosystem for	93.286		4500004990	382,342	-
Total for Assistance Listing Number 93.286				678,274	-
Boston Public Health Commission - Boston REACH	93.304		FY24026369	53,328	-
Total for Assistance Listing Number 93.304				53,328	-
Boston College - Targeting Health Disparities through Housing Redevelopment: A Natural Experiment of Housing Quality, Stability, and Economic Integration	93.307		5111871-2	68,922	-
Brigham and Women's Hospital, Inc - Enhanced measurement and causal modeling of sleep electrophysiology to better understand sleep disparities	93.307		122194	1,190	-
Brigham and Women's Hospital, Inc - Multi-level intervention to promote healthy beverage choices	93.307		129979	26,491	-
Harvard Pilgrim Health Care - Sexual orientation-related disparities in obstetrical and perinatal health	93.307		AH000827	46,216	-
Massachusetts General Hospital - Racial disparities in police use of deadly force as a cause of racial disparities in sleep health across the life course	93.307		236743	10,560	-
Massachusetts General Hospital - The Transition from Medicaid to Medicare and Impacts on Disparities	93.307		240768	34,478	-
Regents of the University of California - Irvine - Sleep and health disparities among Asian Americans: roles of stressors and protective factors	93.307		2021-1498	35,389	-
Regents of the University of California - Los Angeles - The Impact of Surgeon Factors and Education/Training on Disparities in Surgical Care	93.307		1557 G ZA069	18,983	-
Regents of the University of California - San Francisco - Reducing Oral Health Disparities in Children: Assessing the Multilevel Impact of a Standardized	93.307		11566sc	27,239	-
Stanford University - Implementing a scalable, Patient-centered Team based-intervention for adults with type 2 diabetes and Health disparities (iPATH)	93.307		63330370-239604	110,724	-
Tufts University - Social Stressors, Epigenetics and Health Status in Underrepresented Minorities	93.307		PO-EP0226726	59,097	-
University of Rochester - Association of the redesigned Comprehensive Care for Joint Replacement model with racial/ethnic and socioeconomic disparities in jo	93.307		SUB00000817	32,674	-
University of South Florida - Epigenomic Predictors of PTSD and Traumatic Stress in an African	93.307		6408-1149-00-A	36,544	-
University of Texas - Arlington - Train and EMPOWER A Community Health workforce to achieve equity and reduce disparities in mental health (TEACH)	93.307		2022GC0668	65,223	-
University of Washington - Sexual Assault Recovery Among Sexual Minority Women: A Longitudinal,	93.307		UWSC14718	22,823	-
Yale University - Air Pollution, Heat, Cold, and Health: Disparities in the Rural South	93.307		CON-80004863	179,479	-
Total for Assistance Listing Number 93.307				776,032	-
Baylor College of Medicine - Ethical and Human Factors Impacting Successful Translation of Perceptual Computing to Improve Clinical Care	93.310		P700000337	52,551	-
Board of Regents of the University of Wisconsin System - Children's Respiratory and Environmental	93.310		2431	199,225	-
Brigham and Women's Hospital, Inc - Multi-omic approaches to mechanisms of vitamin D, environmental influences, and the microbiome on asthma	93.310		119919	4,134	-
Carnegie Mellon University - Multiscale Analyses of 4D Nucleome Structure and Function by	93.310		1090785 - 437142	27,351	-
Children's Hospital Boston - Development of an efficient high throughput technique for the identification of high-impact non-coding somatic variants across multiple tissue types	93.310		GENFD0002400406	90,785	-
COVID-19: Brown University - Improved Testing for COVID-19 in Skilled Nursing Facilities: IMPACT-C	93.310		1721	(13,508)	-
COVID-19: Massachusetts General Hospital - Interactive Data Portals and Robust Analytic Tools to	93.310		239079	83,086	-
COVID-19: Massachusetts General Hospital - Interactive Data Portals and Robust Analytic Tools to	93.310		239079	770,998	-

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Harvard Pilgrim Health Care - Common and distinct early environmental influences on cardiometabolic and respiratory health: Mechanisms and methods	93.310		PH000615G	137,968	-
Harvard Pilgrim Health Care - Neighborhoods and health across the life course: Early life inequities in food security, diet quality, and chemical exposures	93.310		PH000973A	49,367	-
Icahn School of Medicine at Mount Sinai - ECHO Consortium on Perinatal Programming of	93.310		0255-2299-4609	2,072	-
Icahn School of Medicine at Mount Sinai - Mount Sinai ECHO site for Perinatal Environment and	93.310		0255-1412-4609	48,514	-
Massachusetts General Hospital - A Patient-Focused Collaborative Hospital Repository Uniting	93.310		241802	5,661	-
National Alliance Against Disparities in Patient Health - AIM-AHEAD	93.310		RF00250-2022-0048	(21,503)	-
Regents of the University of California - Irvine - Making antibody generation rapid, scalable, and democratic through machine learning and continuous evolution	93.310		2020-1392	966,014	-
UC San Diego School of Medicine - Center for Integrated Multi-modal and Multi-scale Nucleome	93.310		704234	427,436	-
UMass Chan Medical School - Center for 3D Structure and Physics of the Genome	93.310		OSP33133-01	159,445	-
University of California, San Diego - Center for Integrated Multi-modal and Multi-scale Nucleome	93.310		704233	84,917	-
University of North Carolina - Chapel Hill - Illuminating Function of the Understudied Druggable Kinome	93.310		5125952	68,543	-
University of North Texas Health Science Center - Infrastructure 1 and Research Fellowship	93.310		RF00250-SUB00067	2,397,464	-
University of Pittsburgh - Cellular Senescence Network (SenNet) Consortium Organization and Data Coordinating Center (CODCC)□	93.310		AWD00004814 (139412-5)	304,169	-
Total for Assistance Listing Number 93.310				5,844,689	-
Brigham and Women's Hospital, Inc - Kidney Microphysiological Analysis Platforms (MAP) to Optimize	93.350		122148	113,318	-
Children's Hospital Boston - Instrumenting the Delivery System for a Genomics Research Information	93.350		GENFD0002338182	182,833	-
Children's Hospital Boston - Tissue chips for precision treatment of catecholaminergic polymorphic	93.350		GENFD0002321554	175,869	-
Children's Hospital Boston - Tissue chips for precision treatment of catecholaminergic polymorphic	93.350		GENFD0002151032	(9,776)	-
University of Pittsburgh - ENACT: Translating Health Informatics Tools to Research and Clinical Decision	93.350		AWD00006171 (139238-6)	344,530	-
Total for Assistance Listing Number 93.350				806,774	-
Brigham and Women's Hospital, Inc - A Community Zebrafish Resource for Modeling GWAS Biology	93.351		119850	8,304	-
Total for Assistance Listing Number 93.351				8,304	-
Beckman Research Institute of City of Hope - Technology-Enabled Activation of Skin Cancer Screening for Hematopoietic Cell Transplantation Survivors and their Primary Care Providers	93.353		62014.2008301.669301	85,435	-
Dana-Farber Cancer Institute - Developing a pragmatic guide to implementing social risk referrals: A partnership between Caring Health Center (CHC) and the Implementation Science Center for Cancer	93.353		1330760	92,690	38,568
Dana-Farber Cancer Institute - The Cellular Geography of Therapeutic Resistance in Cancer	93.353		1331601	208,713	-
Oregon Health and Science University - Omic and Multidimensional Spatial Atlas of Metastatic Breast	93.353		1013337-01 HARVARD	232,878	-
Total for Assistance Listing Number 93.353				619,716	38,568
Boston College - Leveraging community behavioral health services to increase vaccine uptake in Latinx	93.361		5113571-3	111,233	-
Harvard Pilgrim Health Care - Impact of the expiration of temporary pandemic SNAP benefits on the healthfulness of supermarket food purchases	93.361		AH001010	67,981	-
Rand Corporation - The Impact of Telelactation Services on Breastfeeding Outcomes among Minority	93.361		SCON-00000590	32,324	-
Washington University School of Medicine - Rural-Urban Disparities in Spillover Effects of COVID-19	93.361		WU-24-0584	26,992	-
Total for Assistance Listing Number 93.361				238,530	-
Scripps Research Institute - Technology to Empower Changes in Health (TECH) Network Participant	93.368		5-54960	213,309	159,136
Total for Assistance Listing Number 93.368				213,309	159,136
Baylor College of Medicine - Integrative Analysis of Lung Cancer Etiology and Risk	93.393		700000128	3,133	-
Baylor College of Medicine - Integrative Analysis of Lung Cancer Etiology and Risk	93.393		P700000722	118,450	-

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Baylor College of Medicine - Integrative Analysis of Lung Cancer Etiology and Risk	93.393		P700000816	10,616	-
Beth Israel Deaconess Medical Center - Modulating hypoxia signaling and T cell function	93.393		GRT65039	49,606	-
Brigham and Women's Hospital, Inc - Comprehensive characterization of prostate stromal gene expression and association with lethal prostate cancer	93.393		129354	35,972	-
Brigham and Women's Hospital, Inc - Decoding mechanisms underlying metabolic dysregulation in	93.393		127984	238,616	-
Brigham and Women's Hospital, Inc - Helicobacter Infection and Liver Cancer Risk among African Americans and Whites in the United States	93.393		125785	43,308	-
Brigham and Women's Hospital, Inc - Increasing Engagement in Patient Reported Outcome Measurement to Address Breast Cancer Care Disparities using Health Information Technology in	93.393		129988	14,452	-
Brigham and Women's Hospital, Inc - Methodologic Innovations in Cancer Epidemiology	93.393		128787	61,650	-
Brigham and Women's Hospital, Inc - Multidisciplinary Study of Folate Intake and Colorectal Cancer	93.393		125945	65,519	-
Brigham and Women's Hospital, Inc - New Epidemiologic Methods for Reducing Measurement Error and Misclassification Bias in Cancer Epidemiology	93.393		129899	86,153	-
Brigham and Women's Hospital, Inc - Perfluoroalkyl Substances (PFASs) and Liver Cancer Risk in the	93.393		127445	27,918	-
Columbia University - Comparative modeling of gastric cancer disparities and prevention in the US and	93.393		5-GG015389-03	67,858	-
Dana-Farber Cancer Institute - A functional genomic approach to identification and interpretation of	93.393		1201305	14,901	-
Dana-Farber Cancer Institute - A Multi-Level Examination of the Influences of Racism On Cancer Pain	93.393		1337501	40,308	-
Dana-Farber Cancer Institute - Adapting and evaluating a brief advice tobacco intervention in high-reach,	93.393		1311505	60,293	-
Dana-Farber Cancer Institute - Discovering substrates of Adenomatous Polyposis Coli (APC) protein	93.393		1138814	(845)	-
David Geffen School of Medicine at UCLA - Real-world effectiveness of HPV vaccine in women living with HIV and its impact on cervical cancer screening accuracies	93.393		1657-G-IA009	44,730	-
Duke University - Structural Racism and Biological Embodiment of Risk in Breast Cancer Mortality	93.393		303001543	77,849	-
Eastern Virginia Medical School - Using Differences in Perceived Legitimacy and Resident Compliance to Promote Fair and Effective Implementation of Smoke Free Housing	93.393		S100601-1	26,518	-
Health Research, Inc. - Consortium on Methods Evaluating Tobacco (COMET): Filter Ventilation and	93.393		289-01	67,359	-
Johns Hopkins University - BCRP : Multifactoral breast cancer risk prediction accounting for ethnic and	93.393		2006190715	185,798	-
Lawrence Berkeley National Lab - Structural Cell Biology of DNA Repair Machines	93.393		7615189	49,208	-
Massachusetts General Hospital - Etiologic heterogeneity between molecular subtypes of prostate	93.393		243762	42,255	-
Memorial Sloan Kettering Cancer Center - Examining the effects of Global Budget Revenue Program on the Costs and Quality of Care Provided to Cancer Patients Undergoing Chemotherapy	93.393		C22457019	55,662	-
Memorial Sloan Kettering Cancer Center - The Impact of DNA Damage Repair Abnormalities in Prostate	93.393		SB00000316AM3	133,006	-
Regents of the University of Michigan - Detecting Racial Disparities in Cancer Survival by Integrating Multiple High-Dimensional Observational Studies	93.393		SUBK00018559	28,614	-
Regents of the University of Michigan - New Statistical Methods for Modelling Cancer Outcomes	93.393		SUBK00012669	21,040	-
Regents of the University of Minnesota - Role of RBBP4/p300 in recovery from therapy induced DNA	93.393		P010011201	27,102	-
Research Foundation of CUNY (City University of New York) - Exploiting public metagenomic data to uncover cancer/microbiome relationships	93.393		CM00005126	80,900	-
St. Jude Children's Research Hospital - Role of the SWI/SNF complex in tumor suppression	93.393		11226011A-8117580	22,170	-
St. Jude Children's Research Hospital - The Function of Snf5 (SMARCB1), an Epigenetic Tumor	93.393		GR-0002450-PO8134539	48,456	-
Stanford University - Evaluation of genetic, clinical, and environmental risk factors to establish effective screening strategies for second primary lung cancer	93.393		61958611-130956	(330)	-
University of Pennsylvania - PROJECT RESIST: Increasing Resistance to Tobacco Marketing Among Young Adult Sexual Minority Women Using Inoculation Message Approaches	93.393		580371	153,746	-

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University of Southern California - Increasing Access to Genetic Testing in Underserved Patients Using a Multilingual Conversational Agent	93.393		SCON-00003706	58,544	-
University of Southern California - Leveraging Diversity in Cancer Epidemiology Cohorts and Novel Methods to Improve Polygenic Risk Scores	93.393		SCON-00002171	50,189	-
University of Washington - Leveraging cross-cancer shared heritability to better understand the genetic	93.393		UWSC11959	74,160	-
Weill Medical College of Cornell University - Prediagnostic exposures, germline genetics, and triple negative breast cancer mutational and immune profiles	93.393		235858-5	117,615	-
Total for Assistance Listing Number 93.393				2,302,499	-
Brigham and Women's Hospital, Inc - Polygenic risk stratification combined with MRI for early detection of clinically relevant prostate cancer	93.394		128885	65,892	-
COVID-19: Stanford University - Mechanisms and Duration of Immunity to SARS-CoV-2	93.394		63417814-198537	27,341	-
Fred Hutchinson Cancer Center - Statistical Methods for Prospective Evaluation of Biomarkers	93.394		1160326	59,481	-
RareCyt, Inc. - Rapid highly multi-plexed immuno-profiling of solid tumors by SpectralEdge imaging	93.394		2R44CA224503-02SUB	34,519	-
Total for Assistance Listing Number 93.394				187,233	-
Brigham and Women's Hospital, Inc - Evaluation of an implantable microdevice for rapid cancer drug screening directly in T cell lymphoma patients	93.395		123466	204,851	-
Brigham and Women's Hospital, Inc - Project 2: Combining Immune Checkpoint Blockade with T cell	93.395		124415	140,564	-
Dana-Farber Cancer Institute - Leveraging Novel Randomized Clinical Trials of Vitamin D	93.395		1327902	36,269	-
Supplementation in Patients with Colorectal Cancer: Impact on Survival and Anti-Tumor Immunity					
Massachusetts General Hospital - Strategies to Overcome Immune Resistance in Head and Neck	93.395		235469	1,987	-
Massachusetts General Hospital - Transcriptional mechanisms and melanoma - Project 2	93.395		235351	(4,514)	-
Stanford University - CDK7 R01 : Targeting CDK7 in CCNE1-amplified Ovarian Cancer	93.395		62839397-221674	236,542	-
Vanderbilt University - The XPA scaffold protein in Nucleotide Excision Repair	93.395		OSA00000312	40,193	-
Total for Assistance Listing Number 93.395				655,892	-
Brigham and Women's Hospital, Inc - Identifying new therapeutic avenues to selectively target tumors with uncontrolled mTORC1 activation	93.396		120102	13,842	-
Brigham and Women's Hospital, Inc - Identifying new therapeutic avenues to selectively target tumors with uncontrolled mTORC1 activation	93.396		129819	213,027	-
Brigham and Women's Hospital, Inc - Molecular Pathogenesis of the Hamartoma Syndromes P01 Project 1: Identifying new therapeutic avenues to selectively target tumors with uncontrolled mTORC1 activation	93.396		120102	23,947	-
Brigham and Women's Hospital, Inc - Molecular Pathogenesis of the Hamartoma Syndromes P01 Project 1: Identifying new therapeutic avenues to selectively target tumors with uncontrolled mTORC1 activation	93.396		129819	237,165	-
Dana-Farber Cancer Institute - Developing Informatics Technologies to Model Cancer Gene Regulation	93.396		1170705	90,682	-
Massachusetts General Hospital - Designer EcN for treatment of solid tumors	93.396		240531	6,632	-
Massachusetts General Hospital - Prebiotic effect of eicosapentaenoic acid treatment for colorectal	93.396		236707	274,210	-
Massachusetts General Hospital - Reverse transcriptase inhibitor effects on the mobilome of colon	93.396		234829	113,182	-
Memorial Sloan Kettering Cancer Center - The cBioPortal for Cancer Genomics	93.396		PO C22544409	155,775	-
Sage Bionetworks - Multi-Consortia Coordinating Center (MC2 Center) for Cancer Biology: Building Interdisciplinary Scientific Communities, Coordinating Impactful Resource Sharing, and Advancing	93.396		2022.7	156,020	-
The Broad Institute - Mechanisms promoting copper dependent cell death in cancer	93.396		5001923	61,114	-
University of Pittsburgh - Pathogenesis of Cancer - Role of EGF Receptor Endocytosis	93.396		AWD00001291 (133630-1)	37,536	-
University of Texas Southwestern Medical Center - Imaging mechanisms of metastatic colonization in	93.396		GMO221201	270,000	-
Total for Assistance Listing Number 93.396				1,653,132	-

The accompanying notes are an integral part of this schedule.

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Dana-Farber Cancer Institute - 2/2 The UMB-DF/HCC U54 Comprehensive Partnership for Cancer	93.397		1217813	93,326	-
Dana-Farber Cancer Institute - 2/2 The UMB-DF/HCC U54 Comprehensive Partnership for Cancer	93.397		1323711	8,077	-
Dana-Farber Cancer Institute - Advancing research methods to better understand health literacy and health equity in digital communications	93.397		1306313	34,388	-
Dana-Farber Cancer Institute - Cancer Center Support Grant	93.397		HSPH-59	288,934	-
Dana-Farber Cancer Institute - Dana Farber/ Harvard Cancer Center SPORE in Gastrointestinal Cancer	93.397		1132215	31,308	-
Dana-Farber Cancer Institute - Dana-Farber/Harvard Cancer Center Ovarian Cancer SPORE Grant	93.397		1316304	113,844	-
Dana-Farber Cancer Institute - Dana-Farber/Harvard Cancer Center Support Grant	93.397		HMS-59	739,063	-
Dana-Farber Cancer Institute - Development of degraders for novel targets in ovarian cancer	93.397		1316903	782	-
Dana-Farber Cancer Institute - DF/HCC Prostate SPORE: Career Enhancement Program	93.397		1334601	12,487	-
Dana-Farber Cancer Institute - DF/HCC Prostate SPORE: Project 3: Dissecting and Predicting Lethal Prostate Cancer using Biologically Informed Artificial Intelligence	93.397		1334501	12,487	-
Dana-Farber Cancer Institute - DF/HCC SPORE in Gastrointestinal Cancer	93.397		1132415	221,630	-
Dana-Farber Cancer Institute - Sensitive detection of mutational signatures for early detection of breast cancer in patients with germline BRCA1/2 mutations□	93.397		1231110	117,340	-
Dana-Farber/Harvard Cancer Center - Elucidating the Molecular Basis of SETD2 Mutations in Clear Cell	93.397		No Award Number	58,299	-
Dana-Farber/Harvard Cancer Center - Evaluating Genetic ancestry vs. self-reported race in outcomes in men with advanced prostate cancer	93.397		1336401	11,364	-
Dana-Farber/Harvard Cancer Center - Integrating electronic health record data with deep learning computational pathology and single-cell tissue profiling for tailored colonoscopy surveillance	93.397		1337560	24,875	-
Total for Assistance Listing Number 93.397				1,768,204	-
Massachusetts General Hospital - NIH/NCI K12 Training Program in Nervous System Tumors	93.398		239715	12,321	-
Total for Assistance Listing Number 93.398				12,321	-
Association of State and Territorial Health Officials - ASTHO Resiliency Project	93.421		00-FE-2096-05-00	59,776	-
Association of State and Territorial Health Officials - Develop mentorship modules to serve as a parallel component to ASTHO's Directors of Public Health Preparedness (DPHP) Orientation Program	93.421		00-FE-2084-04-C0	6,253	-
COVID-19: Association of State and Territorial Health Officials - "Technical Assistance for State, Territorial, and Federal Risk Communication During Public Health Emergencies: COVID-19 (Part 3),"	93.421		00-FE-2700-05-00	461,461	242,750
COVID-19: Stanford University - COVID-19 Policy Modeling and Forecasting for Public Health Decision	93.421		63301090-306582	69,029	-
Total for Assistance Listing Number 93.421				596,519	242,750
Shirley Ryan AbilityLab - Collaborative Machines Enhancing Therapies (COMET)	93.433		7247	67,303	-
Syracuse University - Employment Policy Research and Resource Center (EPRRC)	93.433		31838-05703-S01	178,655	-
The Spaulding Rehabilitation Hospital Corporation - Spaulding-Harvard Traumatic Brain Injury Model	93.433		500682	16,735	-
Total for Assistance Listing Number 93.433				262,693	-
COVID-19: Boston Public Health Commission - Community Health Workers for Covid Response and	93.495		FY23024260	84,817	-
Total for Assistance Listing Number 93.495				84,817	-
Partners in Health - REACH for Healthy Navajo Communities	93.738		AVA0319.HMS.09302022	12,384	-
Total for Assistance Listing Number 93.738				12,384	-
Denver Health and Hospital Authority - Mountain Plains Regional Disaster Health Response System	93.817		A20-0137-S002	900	-
Massachusetts General Hospital - MA/Region 1 Partnership for Regional Health Disaster Response	93.817		241937	30,972	-
Nebraska Medicine - Nebraska-Region 7 Partnership for Regional Health Disaster Response	93.817		1003054-GR30541130	26,185	-
Total for Assistance Listing Number 93.817				58,057	-

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Beth Israel Deaconess Medical Center - Cardiovascular Health of Low-Income Working-Age Adults in the US: Health Care Access, Policy, and the Pandemic	93.837		1064410	26,671	-
Beth Israel Deaconess Medical Center - Use of Registries, Claims and Health System Data to Enhance the Evaluation of Cardiovascular Devices	93.837		010GRT65832	48,007	-
Brigham and Women's Hospital, Inc - Genomics of Post-op Atrial Fibrillation After Cardiac Surgery	93.837		125218	7,659	-
Brigham and Women's Hospital, Inc - Leveraging machine learning for cardiovascular disease risk prediction and prevention in women with a history of adverse pregnancy outcomes	93.837		130376	12,444	-
Brigham and Women's Hospital, Inc - Risk Factors of CVD in Women	93.837		120938	3,380	-
Brigham and Women's Hospital, Inc - Targeted immune therapies in heart transplantation	93.837		128575	13,345	-
Brigham and Women's Hospital, Inc - Using Metabolomics to Understand CVD Risk in Women with a	93.837		125858	10,858	-
Children's Hospital Boston - Computational Prioritization of Coding and Non-Coding Variants in	93.837		GENFD0002243723	5,573	-
Children's Hospital Boston - Exploring the relationship between advanced multimodal brain MRI phenotypes, genes and cognitive outcome in adults with CHD	93.837		GENFD0002346786	68,096	-
Children's Hospital Boston - Pathogenesis of Dyslipidemia and Atherosclerosis in the Diabetic State	93.837		GENFD0002257447	75,888	-
Duke University - Mechanisms of Maladaptation in Heart Failure	93.837		A032119	3,958	-
Fox Chase Cancer Center - Asian American Community Cohort and Equity Study (ACCESS)	93.837		1521000	89,907	-
Harvard Pilgrim Health Care - Built Environment Assessment through Computer vision (BEACON): Applying Deep Learning to Street-Level and Satellite Images to Estimate Built Environment Effects on	93.837		AH000766	55,500	-
Icahn School of Medicine at Mount Sinai - Influence of prenatal air pollutant and stress exposures on sleep outcomes in urban preschool-aged children	93.837		0255-C315-4609	21,372	-
Lawrence Berkeley National Lab - In vivo Characterization of Regulatory Variant Pathogenicity in	93.837		7631203	51,317	-
Massachusetts General Hospital - 2/2 REPRIEVE Extension for Trial Completion	93.837		243180	442,003	-
Massachusetts General Hospital - Clonal hematopoiesis of indeterminate potential and HIV in the	93.837		237407	63,139	-
Massachusetts General Hospital - Hematopoiesis in Cardiovascular Disease - Admin Core	93.837		235092	16,178	-
Massachusetts General Hospital - Hematopoiesis in Cardiovascular Disease - Project 4	93.837		235112	399,328	-
Massachusetts General Hospital - Mechanisms of Cardiac Dysfunction in HIV and the Effect of Statins	93.837		230744	15,667	-
Massachusetts General Hospital - Reducing Arterial Inflammation and Improving Metabolic Health by Dual CCR2 and CCR5 Antagonism in People Living with HIV	93.837		237424	73,653	-
Regents of the University of California - San Francisco - Predicting and preventing drug metabolism by	93.837		13030sc	37,935	-
Regents of the University of Michigan - ADAPT: Enabling robust adaptation in mHealth interventions for supporting maintenance of heart-healthy behaviors	93.837		SUBK00019266	53,885	-
Stanford University - Mentoring in Translational Research to Prevent Disparities in Childhood Obesity	93.837		63302064-281664	3,119	-
Stanford University - Precision Medicine by Harmonizing Real World Evidence and RCT Data	93.837		62356619-44738	82,602	-
The Broad Institute - Cardiovascular disease, metabolic syndrome, microbes and metabolites in FHS	93.837		5001356-5500001682	258,877	-
Tufts University - Cost-Effectiveness of Health System and State-Level Strategies to Improve Diet and Reduce Cardiometabolic Diseases	93.837		103493-00001:NH0001	38,142	-
University at Buffalo (State University of New York) - Cardiac Toxicity in Perinatally HIV-Infected Adolescents and Young Adults, a Longitudinal Study	93.837		R1186469	3,488	-
University of Florida - Bayesian machine learning for complex missing data and causal inference with a focus on cardiovascular and obesity studies	93.837		SUB00003698	20,218	-
University of North Carolina - BioData Catalyst WP4.0 Maintenance and Operations (4.0 M and O)	93.837		5126007	1,831,051	-
University of North Carolina - Bringing Covid Data to the BioData Catalyst Ecosystem	93.837		5128563	161,795	-
University of North Carolina - Chapel Hill - BDC Workplan 4.0 New Development PIC-SURE	93.837		5127406	12,802	-

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Washington University School of Medicine - The Impact of Bundled Payments for Cardiopulmonary	93.837		WU-20-85-MOD-	188,443	-
Total for Assistance Listing Number 93.837				4,196,300	-
Brigham and Women's Hospital, Inc - Systems Biology of Airway Disease	93.838		115975	2,590	-
Brigham and Women's Hospital, Inc - Traffic-Related Ultrafine Particles Disrupt The Resolution Of Lung	93.838		130220	42,490	-
Icahn School of Medicine at Mount Sinai - Associations among maternal lifetime psychosocial stress, prenatal systemic and placental oxidative stress mixtures, and child asthma	93.838		0255-H741-4609	14,657	-
Regents of the University of California - San Diego - Genomics and Pharmacogenomics of Symptoms in	93.838		KR705129	91,272	-
University of North Carolina - Chapel Hill - RECOVER BDC Data Gateway (RBDG)	93.838		5127490	608,197	-
Weill Medical College of Cornell University - Distinct and Overlapping Pathways of Fibrosis and	93.838		230138-06	297,851	-
Total for Assistance Listing Number 93.838				1,057,057	-
Children's Hospital Boston - Bone Marrow Spatial Transcriptomics to Enhance In Vitro Platelet	93.839		GENFD0002251204	37,647	-
Massachusetts General Hospital - Core A (Harvard): Functional consequences of stem and progenitor	93.839		243214	547,412	-
Massachusetts General Hospital - Functional dissection of clonal hematopoiesis	93.839		230441	(698)	-
Total for Assistance Listing Number 93.839				584,361	-
Brigham and Women's Hospital, Inc - Acid-Base Status as a Novel Risk Factor for Fractures	93.846		121220	28,436	-
Brigham and Women's Hospital, Inc - Bridging clinical trial and real-world data via machine learning to advance rheumatoid arthritis treatment strategies	93.846		127414	80,429	-
Brigham and Women's Hospital, Inc - Studying exceptional treatment non-responders and genetics to predict treatment response in rheumatoid arthritis	93.846		125580	(453)	-
Brigham and Women's Hospital, Inc - VERITY: Value and Evidence in Rheumatology using	93.846		128094	48,162	-
Children's Hospital Boston - Cfp1 Action in Cartilage Development	93.846		GENFD0002499965	18,692	-
Children's Hospital Boston - Defining the human articular chondrocyte lineage	93.846		GENFD0002328849	18,566	-
Massachusetts General Hospital - Investigating the direct reprogramming of fibroblasts into skeletal	93.846		237246	73,006	-
Massachusetts General Hospital - Novel Metabolite and Microbiota Pathways for Hyperuricemia and	93.846		240923	71,896	-
Massachusetts General Hospital - Posttranscriptional control of epidermal progenitors senescence	93.846		234150	74,938	-
Massachusetts General Hospital - Project 2: The role of the osteocyte in responses to osteoporosis anabolic treatment in humans and mice	93.846		242716	203,146	-
Massachusetts General Hospital - Regulation of Axin2-expressing cells in the adult tendon	93.846		241147	1,382	-
Massachusetts General Hospital - Stem cells and committed muscle cells reprogram in heterotopic ossification dependent of inflammation	93.846		235440	42,534	-
Massachusetts General Hospital - The role of Smad1/5/8 signaling in the postnatal skeleton	93.846		235440	41,019	-
Trustees of Boston University - Boston University CCCR	93.846		4500005010	2,727	-
Trustees of Boston University - Sustained Release Relaxin-2 for the Treatment of Frozen Shoulder	93.846		4500004416	158,496	-
Trustees of Boston University - The Conundrum of Absentee Receptors: Efficacy Potentiation Through	93.846		4500004646	186,791	-
University of North Carolina - Chapel Hill - Collaborative Utilization and Assessment of Biomechanics Technologies Within the BACPAC Consortium	93.846		5130032	90,242	-
Total for Assistance Listing Number 93.846				1,140,009	-
Albert Einstein College of Medicine - Metabolomics signatures underlying diet, lifestyle and gut	93.847		311433	(280)	-
Beth Israel Deaconess Medical Center - Generation of a Cellular Atlas of Adipose Tissue in Mouse and	93.847		1060496	(1,383)	-
Beth Israel Deaconess Medical Center - Leveraging the Rich Genetic Diversity of Vagal Motor Neurons to Decode Brain-to-Gut Communication	93.847		1061842	334,352	-
Brigham and Women's Hospital, Inc - A microbiome-dependent bile acid metabolite improves type 2	93.847		124675	287,175	-
Brigham and Women's Hospital, Inc - Circulating plasma metabolites, diet, and risk of type 2 diabetes	93.847		118780	62,279	-

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Brigham and Women's Hospital, Inc - Health effects of substituting sugar-sweetened beverages with non-caloric beverages in adults with overweight and obesity	93.847		123666	(2,313)	-
Brigham and Women's Hospital, Inc - Novel approaches to improve comparative effectiveness research of medical and surgical weight reduction strategies in clinical practice	93.847		130656	7,326	-
Brigham and Women's Hospital, Inc - Regulation of cytogenesis	93.847		126981	5,457	-
Brown University - Asprosin, Body Weight, and Risk of Type 2 Diabetes in Men and Women	93.847		1627	(12,441)	-
Buck Institute for Research on Aging - The B Cell Insulin Receptor in Health and in Insulin Resistance	93.847		SA48002-HU	34,681	-
Children's Hospital Boston - Integrated Epithelial and Muscosal Biology	93.847		GENFD0002063533	(10,601)	-
Children's Hospital Boston - Integrated Epithelial and Muscosal Biology	93.847		GENFD0002063534	2,852	-
Children's Hospital Boston - Mechanism of action for the epithelial-specific ER stress sensor IRE1β in regulating intestinal homeostasis and host defense	93.847		GENFD0002381095	26,295	-
Children's Hospital Boston - Molecular Circuits in the Hematopoietic Stem Cell Niche	93.847		GENFD0002214910	(3,879)	-
Duke University - Duke: Microbial regulation of intestinal lipid metabolism and its physiological	93.847		303000251	51,996	-
Harvard Pilgrim Health Care - Label to Table: New Insights into Supermarket Food Labeling	93.847		AH000949	109,033	-
Indiana University - Investigating metabolic responses to high sugar diets and the onset of diabetic	93.847		9849	55,979	-
Massachusetts General Hospital - A Prospective Study of Lifestyle, the Gut Microbiome, and Diverticulitis	93.847		235385	(595)	-
Massachusetts General Hospital - BRAIN CONNECTS: The Center for Large-scale Imaging of Neural	93.847		243877	118,802	-
Massachusetts General Hospital - Center for the Study of Inflammatory Bowel Disease	93.847		238642	45,589	-
Massachusetts General Hospital - Creating Opportunities for Underrepresented Researchers to Achieve Growth and Excellence (COURAGE)	93.847		241424	1,069	-
Massachusetts General Hospital - Dietary behavior, environmental factors, and practices related to diet quality in Hispanics/Latinos of Puerto Rican descent	93.847		242491	5,696	-
Massachusetts General Hospital - Investigating how coordinated response from nAChRs and gap junctions promotes healing of the intestinal epithelium	93.847		238644	(1,862)	-
Massachusetts General Hospital - P and F Program	93.847		238644	84,750	-
Nutrition Obesity Research Center at Harvard - Metabolic signature of artificial sweetener intake, gut microbiome, and body weight in free-living individuals	93.847		242491	6,281	-
Regents of the University of California - Food Insecurity, Poor Diet, and Metabolic Syndrome: Cortisol's	93.847		0875-G-LA484	12,756	-
Regents of the University of Michigan - KPMP Kidney Mapping and Atlas Project (KMAP)□	93.847		SUBK00016235	247,650	-
The Broad Institute - A comprehensive platform for novel therapy development from the microbiome	93.847		5000472-5500001054	59,078	-
Tulane University - Nutrigenetics and Nutrigenomics for Precision Weight-Loss Diet Interventions	93.847		TUL-HSC-560241-21/22	17,094	-
Tulane University - Weight-Loss Diet Intervention on Cardiometabolic Factors of Gut Microbiota	93.847		TUL-HSC-558086-19-20	12,433	-
UMass Chan Medical School - MRWeight: Medical Residents Learning Weight Management Counseling Skills -- A Multi-Modal, Technology-Assisted, Spaced Education Program	93.847		SUB00000364	34,540	-
Yale University - Data and Biostatistics Core : Amazon Center of Excellence in Malaria Research	93.847		CON-80004308	60,265	-
Total for Assistance Listing Number 93.847				1,650,074	-
Beth Israel Deaconess Medical Center - Meningeal Nociceptor-Immune Signaling in Migraine	93.853		1064528	51,207	-
Beth Israel Deaconess Medical Center - The functional neuroanatomy of the human physiological stress	93.853		1061570	11,663	-
Brigham and Women's Hospital, Inc - Cell and Molecular Consequences of Alzheimer's Disease Genetic Variants on BBB Integrity and Function	93.853		124009	400,447	-
Brigham and Women's Hospital, Inc - Oncolytic virus therapeutic responses occur from changes in the glioblastoma immune microenvironment	93.853		130734	2,279	-
Brown University - Chemigenetic voltage indicators for far-red and two-photon imaging in vivo	93.853		2443	102,505	-

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California Institute of Technology - A Brain Circuit Program for Understanding the Sensorimotor Basis of	93.853		S397744	34,395	27,507
California Institute of Technology - Comprehensive Analysis of a Decision Circuit	93.853		S447071	(268)	-
California Institute of Technology - Neural representation of mating partners by male C. elegans	93.853		S447423	79,931	-
Children's Hospital Boston - Cell Identity Determination In Human Brain: Somatic mutation and cell	93.853		GENFD0002400405	199,040	-
Children's Hospital Boston - The role of Fos and the BAF complex in neuronal activity-dependent chromatin remodeling and gene expression	93.853		GENFD0002376899	38,277	-
Columbia University - Reexamining the role of dendrites in neuronal function	93.853		1(GG018142-01)	184,674	-
Emory University - Bcl-xL-regulated apoptosis in cerebellar development and medulloblastoma treatment	93.853		SC00015532	31,900	-
Lawrence Berkeley National Lab - Chemical Fingerprinting: cell-type specific DNA repair in the brain	93.853		7527795	98,436	-
Massachusetts General Hospital - A computational approach for quantifying motor behaviors in spinocerebellar ataxias to improve early detection of motor signs and precisely estimate disease severity	93.853		238666	96,890	-
Massachusetts General Hospital - Cortical-Basal Ganglia Speech Networks	93.853		237602	19,509	-
Massachusetts General Hospital - Development of real-world motor outcome measures in ataxia-	93.853		244754	12,217	-
Massachusetts General Hospital - Simultaneous functional MRI and Micro-Magnetic Nervous System	93.853		238936	257,480	-
New York University - Mechanisms of synaptic dopamine signaling in the control of behavior	93.853		20-A0-00-1004068	376,157	-
New York University Langone Medical Center - Project 3: Cracking the Olfactory Code	93.853		19-A0-00-1002081	63,897	-
New York University Langone Medical Center - Project 4: Cracking the Olfactory Code	93.853		19-A0-00-1002081	239,271	-
NYU Grossman School of Medicine - Development and Function of 5HT3aR-Expressing Cortical	93.853		18-A1-00-008334	209,666	-
Regents of the University of California - Davis - The RATIOS Study: Risk/Benefit Assessment by IRB	93.853		A21-0985-S006	117,980	-
Regents of the University of California - San Diego - Next generation all-optical toolkits for functional analysis of neuropeptide dynamics in neural circuits	93.853		122333935	1,029	-
Regents of the University of California - San Diego - Structural basis for sensory receptor function	93.853		706013	330,951	-
Regents of the University of California - San Francisco - Sonic Hedgehog dependent neuron-astrocyte crosstalk during cortical circuit assembly	93.853		15092sc	6,313	-
Stanford University - Automated Phenotyping in Epilepsy	93.853		62389164-143494	36,389	-
Stanford University - Project 3- Neural Basis of Sensory-Guided Actions	93.853		61745076-130506	(4)	-
Tufts Medical Center - Discovery of the Biomarker Signature for Neuropathic Corneal Pain	93.853		5023848-SERV	13,693	-
University of Massachusetts - Amherst - A connectomic analysis of a developing brain undergoing	93.853		017879-9119	60,779	-
University of Miami - Clinical Research in ALS and related disorders for Therapeutic Development	93.853		OS00000671	8,421	-
University of Pittsburgh - Leveraging electronic health records to optimize treatment selection and	93.853		AWD00006595 (138681-2)	162,987	-
University of Rochester - U19 Data Science Core	93.853		417832-G / UR FAO	333,483	-
University of Rochester - U19 Project A (theory project)	93.853		417833G / UR FAO	235,017	-
Weill Medical College of Cornell University - Extramural Research Programs in the Neurosciences and	93.853		232597-1	7,017	-
Total for Assistance Listing Number 93.853				3,823,628	27,507
Beth Israel Deaconess Medical Center - Ad26 Based Therapeutic Vaccines for HIV	93.855		GRT65372	75,301	-
Board of Regents of the University of Wisconsin System - Novel antimicrobials targeting MDR pathogens from animal microbial symbionts	93.855		2913	531,085	-
Board of Regents of the University of Wisconsin System - Novel antimicrobials targeting MDR pathogens from animal microbial symbionts	93.855		2914	133,669	-
Boston College - Comparative systems biology of apicomplexan cell division	93.855		5113071 -02	619,400	-
Brandeis University - The molecular and cellular basis of short-range host cue sensing in mosquito	93.855		GR404067	96,919	-
Brigham and Women's Hospital, Inc - Acquired HIV drug resistance among Nigerian children failing first-line ART: Implications for second-line dolutegravir use	93.855		125980	1,271	-

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Brigham and Women's Hospital, Inc - Gut symbiotic microbiota-derived CD1d ligands and their	93.855		127395	82,587	-
Brigham and Women's Hospital, Inc - High-Definition Characterization of the Persistence and	93.855		127565	26,710	-
Brigham and Women's Hospital, Inc - HIV-2 latency and its reversal	93.855		126055	66,473	-
Brigham and Women's Hospital, Inc - PRESCIENT: A phase IIc, open-label, randomized controlled trial of ultra-short course bedaquiline, clofazimine, pyrazinamide and delamanid versus standard therapy for	93.855		127798	151,017	-
Children's Hospital Boston - Decidual NK response to infection	93.855		GENFD0002193900	20,680	-
Children's Hospital Boston - Genome-wide CRISPR-Cas9 screens in insect cells to characterize	93.855		GENFD0002465949	311,519	-
Children's Hospital Boston - Immunobiology of Influenza Virus-related Critical Illness in Young Hosts	93.855		GENFD0002250964	77,173	-
Children's Hospital Boston - Structure-function analysis of infection- and vaccine-induced B-cell	93.855		GENFD0002536856	252,912	-
Children's Hospital Boston - Structure-function studies of the membrane-interacting domains of HIV-1	93.855		GENFD0002287554	106,739	-
COVID-19: FHI Development 360 - CoVPN 3008: Multi-Center, Randomized, Efficacy Study of COVID-	93.855		PO21002249	45,886	45,886
COVID-19: Johns Hopkins University - IMPAACT 2032: Pharmacokinetics and Safety of Remdesivir for Treatment of COVID-19 in Pregnant and Non-Pregnant Women in the United States	93.855		PSTO-LDR17	21,822	-
COVID-19: Regents of the University of California - Los Angeles - A5404- Leadership and Operations Center (LOC), AIDS Clinical Trials Group (ACTG)	93.855		1.56E+13	66,592	-
COVID-19: Regents of the University of California - Los Angeles - Leadership and Operations Center (LOC), AIDS Clinical Trials Group (ACTG)	93.855		1.56E+13	80,484	-
COVID-19: Regents of the University of California - Los Angeles - Leadership and Operations Center (LOC), AIDS Clinical Trials Group (ACTG) [A5401]	93.855		1.56E+13	420,190	-
Dana-Farber Cancer Institute - Biology and structure of pMHC receptors functioning as mechanosensors	93.855		1313704	207,428	-
Dana-Farber Cancer Institute - Identification of Metabolic and Immune Deficits in the Aged Population and Their Restoration to Achieve Youthful Anti-Influenza Vaccine Responsiveness	93.855		1288603	219,177	-
Drexel University - Molecular pathways affected by drugs that disrupt Na+ and lipid homeostasis in	93.855		900273	68,460	-
Emory University - Deep spatial immune profiling of granulomas and M. tuberculosis adaptation to	93.855		A595775	157,788	-
Emory University - Resetting immune homeostasis: a non-invasive approach towards HIV eradication	93.855		A567110	84,181	-
Family Health International - HIV Prevention Trials Network – HPTN 083 and 084	93.855		PO23002413	133,184	-
FHI Development 360 - HPTN 084	93.855		PO21002345	39,632	39,632
FHI Development 360 - Intimate Partner Violence, Social Support, and Substance Use among Black men who have sex with men (BMSM) in the United States	93.855		PO21000817	(7,329)	-
Global Alliance for TB Drug Development - Discovery of inhibitors that target the Mtb ClpP1P2 protease	93.855		2115	326,066	-
Harvard Pilgrim Health Care - Network modeling and robust estimation of the intraclass correlation coefficient to inform the design and analysis of cluster randomized trials for infectious diseases	93.855		AH000680	1,238	-
Health Research, Inc. - Latitudinal Landscape Genomics and Ecology of Anopheles darlingi	93.855		6511-01	204,027	-
Johns Hopkins University - Mechanistic studies to assess the effect of omalizumab on immune cells in conjunction with randomized, controlled rapid multifood OIT (CoFAR11) trial	93.855		2006138581	217,869	-
Johns Hopkins University - Pediatric Adolescent Virus Eradication (PAVE) Martin Delaney Collaboratory	93.855		2005379996	16,802	-
Johns Hopkins University - The Johns Hopkins University - Uganda Clinical Trials Unit	93.855		2005004239	4,828	-
Massachusetts Eye and Ear Infirmary - Harvard-wide Program on Antibiotic Resistance	93.855		531031	333,191	-
Massachusetts Eye and Ear Infirmary - Subproject: Compounds and pathways for antibacterial	93.855		531043	469,163	-
Massachusetts General Hospital - Cost Effectiveness of Preventing HIV Complications	93.855		236800	77,263	-
Massachusetts General Hospital - Non-Templated Regulation of IgE Mediated Anaphylaxis	93.855		244547	76,027	-
Massachusetts General Hospital - Novel Methods to Inform HIV/TB Clinical Trial Development	93.855		237011	39,280	-
Massachusetts General Hospital - Optimizing HIV Care in Less Developed Countries	93.855		233034	5,214	-

The accompanying notes are an integral part of this schedule.

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Massachusetts General Hospital - Optimizing HIV Care in Less Developed Countries	93.855		244187	68,108	-
Massachusetts General Hospital - Temporal Phenotypes and Risk Models for the Post-COVID Syndrome	93.855		241499	24,348	-
Oklahoma Medical Research Foundation - Disease and Race Specific Single-cell Epigenetic	93.855		0340-01	93,888	-
Regents of the University of California - Los Angeles - Leadership and Operation Center (LOC), AIDS	93.855		1560-G-LA223	15,487	-
Regents of the University of California - Los Angeles - Leadership and Operation Center (LOC), AIDS	93.855		1.56E+13	37,239	-
Regents of the University of California - Los Angeles - Leadership and Operations Center (LOC), AIDS	93.855		1560GYC333	8,964	-
Regents of the University of California - Los Angeles - Leadership and Operations Center (LOC), AIDS	93.855		1.56E+13	106,925	-
Regents of the University of California - Los Angeles - Leadership and Operations Center (LOC), AIDS	93.855		1.56E+13	393,008	-
Regents of the University of California - San Diego - Defining the resistome in P. falciparum: evolution	93.855		705800	256,290	-
Regents of the University of California - San Francisco - Duration Randomized Anti-MDR-TB and	93.855		12461sc	20,391	-
Regents of the University of Michigan - Center for Structural Biology of HIV RNA	93.855		SUBK00016294	293,616	-
Rutgers Biomedical and Health Sciences - Feasibility of Novel Diagnostics for TB in Endemic Countries	93.855		2959	109,386	-
Stanford University - A randomized, double blind, placebo controlled, phase 2 study testing the use of combination multi-allergen food desensitization with dupilumab or or omalizumab in multi-food allergic	93.855		63459008-107480	3,469	-
Stanford University - A randomized, double blind, placebo controlled, phase 2 study testing the use of combination multi-allergen food desensitization with dupilumab or or omalizumab in multi-food allergic	93.855		63459056 -107480	44,555	-
Stanford University - Evaluating the role of allergen dose and duration in the safety and efficacy of multi-allergen oral immunotherapy with Omalizumab	93.855		63297140-125332	7,192	-
Stanford University - High-resolution longitudinal immune monitoring for elucidating immune aging	93.855		63274993-151206	23,578	-
Stanford University - Integrated Genomic and Functional Studies of Immunotherapy for Multi-Food	93.855		63185972-107480	185,376	-
Stanford University - Integrated Genomic and Functional Studies of Immunotherapy for Multi-Food	93.855		63188914-107480	8,288	-
Stanford University - Systems biological assessment of innate and adaptive immunity to vaccination	93.855		63271716-229950	5,204	-
Stanford University - Systems biological assessment of innate and adaptive immunity to vaccination	93.855		63217464-229950	68,572	-
Texas A and M Research Foundation - Structure-based Discovery of Critical Vulnerabilities of	93.855		M1803704	107,527	-
The Broad Institute - Advancing Genomic Technologies to Combat Infectious Disease: Mapping Dynamics within Single Cells, Individual Hosts, and Global Populations	93.855		5000578-5500001280	217,078	-
The Broad Institute - Advancing Genomic Technologies to Combat Infectious Disease: Mapping Dynamics within Single Cells, Individual Hosts, and Global Populations	93.855		5000579-5500001281	13,711	-
The Broad Institute - Identification and characterization of microbial metabolites in immunity	93.855		5001423-5500001861	217,012	-
The Broad Institute - Innovative Technologies to transform Antibiotic Discovery	93.855		5001915-5500001346	165,755	-
The Broad Institute - Nanobodies targeting cell-surface exposed proteins to amplify the host immune system and/or (re)sensitize bacterial pathogens to antimicrobials	93.855		5002043-5500002086	28,578	-
Tufts University - Single-cell factors of tuberculosis drug tolerance during adaptation to environmental	93.855		103346	24,295	-
UMass Chan Medical School - Systems Genetics of Tuberculosis	93.855		OSP2018035	(504)	-
University of Connecticut - Exploring herpesvirus exonucleases as potential antiviral targets	93.855		UCHC7-173430223	84,748	-
University of Maryland, Baltimore - A Genomics Based Investigation of the Determinants of Polymicrobial	93.855		18922	64,365	-
University of Maryland, Baltimore - The Tick Immune Response During Microbial Infection	93.855		20774	50,563	-
University of Miami - Immune correlates of LTBI in HIV-exposed infants	93.855		OS00000564	75,147	-
University of Pittsburgh - Development of a self-inactivating, highly effective TB vaccine	93.855		CNVA00062617 (132386-	57,269	-
University of Pittsburgh - Manipulation of innate immunity by Polyomavirus T antigens	93.855		AWD00002474 (134727-1)	79,540	-
University of Pittsburgh - Project 1: Synergies among Inhibitory Receptors in Tolerance Cancer and	93.855		AWD00002849 (135387-2)	598,553	-
University of Pittsburgh Medical Center - Understanding use of direct to consumer telemedicine for	93.855		AWD00002531 (134810-1)	25,977	-
University of Washington - Malaria Evolution in South Asia	93.855		UWSC9952	124,271	-

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University of Washington - Optimization of protective antibodies response against bacterial adhesins	93.855		UWSC14885	31,998	-
Weill Medical College of Cornell University - Conditionally replicating Mycobacterium tuberculosis	93.855		232153	190,968	-
Weill Medical College of Cornell University - Pathway Analysis in Tuberculosis (Project 3)	93.855		241082-3	306,357	-
Weill Medical College of Cornell University - Pathway Analysis in Tuberculosis (Project 4)	93.855		241082-5	539,165	-
Yale University - Costimulatory Mechanisms of Autoimmunity (Composite)	93.855		CON-80004470	157,971	-
Yale University - Costimulatory Mechanisms of Autoimmunity (Composite)	93.855		GR100959 (CON-	1,168	-
Yale University - Elucidating how TIGIT agonists regulate CNS autoimmunity exacerbated by PD-1	93.855		CON-80004475	783,747	-
Yale University - Enhancing surveillance systems to slow the spread of antimicrobial-resistant gonorrhea	93.855		GR109897(CON-	49,796	-
Yale University - Integrating genomic and spatial approaches for targeted control of HIV-associated	93.855		CON-80002721	53,997	-
Total for Assistance Listing Number 93.855				11,684,854	85,518
Brandeis University - Dynamical maintenance of left-right symmetry during vertebrate development	93.859		GR404682 Harvard	98,282	-
Brandeis University - Molecular and cellular determinants of Drosophila larva thermotaxis	93.859		403758	67,657	-
Brigham and Women's Hospital, Inc - Bayesian multivariate 3D spatial modeling for microbiome image	93.859		125494	245,101	-
Brigham and Women's Hospital, Inc - Structural and Functional Analysis of Proteasome Core Particle	93.859		127129	16,196	-
Northwestern University - SCISIPBIO: Understanding and Assembling Dream Teams to Conduct Clinical	93.859		60055246 HU	8,547	-
Regents of the University of California - San Diego - National Resource for Network Biology (NRNB)	93.859		KR 705589	153,168	-
Regents of the University of Michigan - Accounting for Hidden Bias in Vaccine Studies: A Negative	93.859		SUBK00012743	56,416	-
The Jackson Laboratory - Teaching the Genome Generation: Cultivating High School Genomics through	93.859		5R01HL153261-04	5,066	-
University of Georgia Research Foundation, Inc. - Collaborative Research: DMS/NIGMS 2: Novel machine-learning framework for AFMscanner in DNA-protein interaction detection	93.859		SUB00003378	57,386	-
Wellesley College - Optical Tools to Study Purinergic Signaling	93.859		SA26581	18,702	-
Total for Assistance Listing Number 93.859				726,521	-
Arizona State University - Innovative Family Prevention with Latino Siblings in Disadvantaged Settings	93.865		ASUB000000124	7,928	-
Beth Israel Deaconess Medical Center - Linking HIV Prevention and post-partum care: Safety, efficacy and feasibility of cabotegravir-LA PrEP in high-risk breastfeeding population in Botswana	93.865		1063794	4,224	-
Boston College - Paternal influence on children's weight outcomes	93.865		5108651-4	39,778	-
Brigham and Women's Hospital, Inc - Active Surveillance of the Safety of Antipsychotic Medications in	93.865		125323	64,814	-
Brigham and Women's Hospital, Inc - An individualized approach to promote nurturing care in low and middle income countries: A hybrid effectiveness/implementation trial of the Guide for Monitoring Child	93.865		125594	33,855	-
Brigham and Women's Hospital, Inc - Causes and consequences of mitochondrial dysfunction in oocytes	93.865		117986	(6,605)	-
Brigham and Women's Hospital, Inc - Comparative Safety of Antibiotics for Common Bacterial Infections	93.865		127850	21,118	-
Brigham and Women's Hospital, Inc - Hormones and Genes in Women's Health: From Bench to Bedside	93.865		123664	39,398	-
Brigham and Women's Hospital, Inc - Mechanics of Vertebrate Embryo Elongation	93.865		119812	(11,698)	-
Brigham and Women's Hospital, Inc - Mechanistic pathways of the effects of human-animal interaction on depression and psychosocial stress	93.865		123005	72,595	-
Brigham and Women's Hospital, Inc - MicroRNA Predictors of HIV Risk in Reproductive Age Women	93.865		121236	129,738	-
Brigham and Women's Hospital, Inc - Safety of Benzodiazepines and Non-Benzodiazepine Sedative	93.865		127603	37,896	-
Children's Hospital Boston - Examining neural mechanisms of developmental dyslexia from infancy to	93.865		GENFD0002064075	(6,208)	-
Children's Hospital Boston - Healthcare Transitions and the Health of Adolescents and Young Adults with Intellectual or Developmental Disabilities	93.865		GENFD0002228211	52,455	-
Children's Hospital Boston - Healthcare Transitions and the Health of Adolescents and Young Adults with Intellectual or Developmental Disabilities	93.865		GENFD0002228212	58,676	-
Children's Hospital Boston - Inflammatory stressors in serotonergic brainstem dysfunction and SIDS.	93.865		GENFD0002404954	283,991	-

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Children's Hospital Corporation - The Hippocampus and Brainstem in the Sudden Infant Death	93.865		GENFD0002012950	9,708	-
Emory University - AI DRIVEN LOW COST ULTRASOUND TOOL FOR AUTOMATED IDENTIFICATION OF PLACENTAL INSUFFICIENCY, PRE-ECLAMPSIA AND IUGR	93.865		A908615	14,116	-
Harvard Pilgrim Health Care - A lifecourse approach to women's cardiometabolic and bone health: from	93.865		AH000730	28,577	-
Harvard Pilgrim Health Care - Prenatal environmental determinants of health in young adulthood: a	93.865		PH000871A	26,511	-
Harvard Pilgrim Health Care - The Impact of Including Pregnancy as a Qualifying Life Event for Marketplace Special Enrollment on Child and Maternal Health	93.865		AH001019	15,727	-
Institut de Recherche pour le Developpement - Antiviral prophylaxis and infant vaccination to prevent	93.865		307848/04	81,024	-
Jackson State University - Mississippi Delta Maternal Health Research Centers of Excellence	93.865		632416-HU	111,225	-
Johns Hopkins School of Public Health - Evaluating a Healthy Default Kids' Beverage Ordinance	93.865		2004546640	47,220	-
Johns Hopkins University - "Determining Bone Loss and Bone Mineral Density Recovery following Repeat Pregnancy/Lactation among HIV Infected women on ART."	93.865		2004010614	5,745	-
Johns Hopkins University - Inter-generational Link of Cardio-Metabolic Risk: Integrate Multi-OMICs with	93.865		2004406421	65,741	-
Johns Hopkins University - Preterm Birth and Child Long-term Cardiometabolic Risk: Integrate	93.865		2005479742	97,484	-
Massachusetts General Hospital - FLOURISH – Following Longitudinal Outcomes to Understand, Report, Intervene and Sustain Health of Infants, Children and Adolescents who are HIV Exposed	93.865		241521	4,224	-
Massachusetts General Hospital - Innovation across the spectrum of pediatric HIV care	93.865		235202	47,120	-
Michigan State University - Infertility history and chronic disease profile	93.865		RC110679Harvard	45,268	-
New York University - Play and Learning Across a Year (PLAY)	93.865		F0998-35	3,069	-
Regents of the University of Michigan - FAMILY WELL-BEING RESEARCH NETWORK ("FAM-NET"): Measuring Family Well-Being across the Lifespan	93.865		SUBK00013014	176,507	-
Stanford University - Measuring Neonatal Regionalization	93.865		63196641-232980	32,597	-
Stellenbosch University, Faculty of Medicine and Health Sciences - Children HIV Exposed Uninfected Research to Inform Survival and Health	93.865		S006905-01	8,447	-
The Broad Institute - Dissecting the role of FMRP in RNA processing using hPSC models	93.865		5000765-5500001555	279,284	-
The Broad Institute - Investigating epigenetic mechanisms in Down Syndrome using human cellular	93.865		5001796-5500002499	13,388	-
Trustees of Boston University - HPV vaccination efficacy for cervical cancer prevention in young women	93.865		4500003130	(2,670)	-
University of Illinois at Urbana-Champaign - RNA Pol II pausing is critical for spermatogenesis and	93.865		092758-17182	15,145	-
University of Maryland, Baltimore - Effects of Attachment-Based Intervention on Low-Income Latino Children's Emerging Health Outcomes: A Randomized Controlled Trial	93.865		21069	13,332	-
University of Massachusetts - Financial Support to Low-income Families of Preterm Infants	93.865		SUB00000240	127,347	-
University of Utah - Economic security policy and birth outcomes among socio-economically	93.865		10060482-02-HU	25,907	-
Total for Assistance Listing Number 93.865				2,113,998	-
Beth Israel Deaconess Medical Center - A National Analysis of Observation Care Among Medicare Beneficiaries with Alzheimer's Disease and Related Dementias	93.866		GRT65005	36,853	-
Brigham and Women's Hospital, Inc - Boston Oaic: A Translational Approach to Function Promoting	93.866		126169	42,595	-
Brigham and Women's Hospital, Inc - Center for Stress and Neural Regulation of Reproductive Aging	93.866		123406	37,709	-
Brigham and Women's Hospital, Inc - Climate-related factors and health during the menopausal	93.866		130180	40,407	-
Brigham and Women's Hospital, Inc - Multicomponent Therapy for Age-related Skin Stem Cell Deficiency	93.866		128380	207,149	-
Brigham and Women's Hospital, Inc - Multicomponent Therapy for Age-related Skin Stem Cell Deficiency	93.866		128377	125,902	-
Brigham and Women's Hospital, Inc - Multicomponent Therapy for Age-related Skin Stem Cell Deficiency-	93.866		128378	11,889	-
Brigham and Women's Hospital, Inc - Multicomponent Therapy for Age-related Skin Stem Cell Deficiency: Project 1 (Mandinova, Hsu) Metabolic Reprogramming and Regeneration in the Aged	93.866		128376	222,587	-

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Carnegie Mellon University - 3D analysis of tissue architecture and cell morphology in intact epithelial tissues using high - plex light sheet imaging	93.866		1090803 - 485451	2,114	-
Columbia University - Bayesian Statistical Learning for Robust and Generalizable Causal Inferences in Alzheimer Disease and Related Disorders Research	93.866		1(GG019220-01)	71,873	-
Dana-Farber Cancer Institute - Defining the landscape and mechanisms of protein redox regulation	93.866		1400003	189,872	-
Emory University - Air Pollution and Alzheimer's Disease and Related Dementias: A National Study	93.866		A570268	46,827	-
Indiana University - Cumulative socioeconomic exposures, cash transfer interventions, and later-life cognitive decline and dementia risk in a low-income region of South Africa	93.866		8731-HU	78,312	-
Joslin Diabetes Center - Homeostasis functions of SKN-1A/Nrf1	93.866		2R01AG054215-06A1	30,948	-
Massachusetts General Hospital - Addressing Racial/Ethnic Disparities in Stroke Care Access Using	93.866		243823	77,693	-
Massachusetts General Hospital - Alzheimer's Disease and Related Dementia Care within the Medicare	93.866		237692	30,534	-
Massachusetts General Hospital - Characteristics and impact of chronic pain and pain management in	93.866		239631	52,355	-
Massachusetts General Hospital - Comparative Safety of Seizure Prophylaxis within the Medicare	93.866		239682	194,735	-
Massachusetts General Hospital - Harnessing Diverse Bioinformatic Approaches to Repurpose Drugs	93.866		233405	33,069	-
Massachusetts General Hospital - Harnessing Diverse Bioinformatic Approaches To Repurpose Drugs For Alzheimer's Disease And Related Dementias	93.866		244001	323,699	-
Massachusetts General Hospital - Impact of Medicare Policies on Beneficiaries with ADRD	93.866		244057	75,684	-
Massachusetts General Hospital - Impact of the COVID-19 Pandemic on Patients with and Without Alzheimer's Disease Related Dementias	93.866		239802	155,671	-
Massachusetts General Hospital - Medications, the gut microbiota, and risk of microscopic colitis	93.866		237376	49,985	-
Massachusetts General Hospital - Prospective Study of the Gut Microbiome in Aging.	93.866		237523	179,839	-
Massachusetts General Hospital - The CHARMED model: a multimorbidity simulation model for people	93.866		238631	111,733	-
Massachusetts General Hospital - Traumatic Brain Injury Anti-Seizure Prophylaxis in the Medicare	93.866		1R01AG082693-01	57,878	-
Massachusetts General Hospital - Vascular Pathology in Early and Asymptomatic Cerebral Amyloid	93.866		238954	30,887	-
National Bureau of Economic Research - Improving Health Outcomes for an Aging Population	93.866		4135G.30.12.HMS	18,875	-
National Bureau of Economic Research - Improving Health Outcomes for an Aging Population	93.866		4135G.30.16.HKS	(2,658)	-
National Bureau of Economic Research - Public Policy and the Future of the Long Term Care Workforce	93.866		41860.HMS	64,829	-
National Bureau of Economic Research - Socioeconomic Status, Mortality, and Morbidity in Older	93.866		41810.Harvard	47,283	-
Northwestern University - Proteostasis in Aging and Neurodegenerative Disease (Project 2)	93.866		60052291 HARVARD	2	-
Regents of the University of California - Davis - Extreme weather-related events and environmental exposures in the risk for Alzheimer's disease and related dementias (E4AD)	93.866		A22-0492-S001	28,473	-
Regents of the University of California - Los Angeles - The effect of medical school, residency program, and health system board diversities on racial and ethnic disparities in AD/ADRD care	93.866		1557 G IA652	10,930	-
Regents of the University of California - San Francisco - Advancing Psychosocial and Biobehavioral Approaches to Improve Emotional Well-Being	93.866		12669sc	49,493	-
Regents of the University of California - San Francisco - Characterizing the biological mechanisms behind the association of psychological well-being with cardiovascular disease and all-cause mortality.	93.866		13576sc	6,418	-
Regents of the University of California - San Francisco - Closing the gap between observational research and randomized trials for prevention of Alzheimer's Disease and dementia	93.866		11206sc	(14,573)	-
Regents of the University of California - San Francisco - Evaluation of college accessibility and income security interventions as preventative measure for dementia risk and solutions to dementia disparities	93.866		14568sc	35,951	-
Regents of the University of California - The Impact of physician and health system factors on the quality of care for persons with Alzheimer's disease and related dementias at the end of life	93.866		1557 G YA572	18,983	-

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Regents of the University of Michigan - Racial / Ethnic Differences in Extended Family Social Support	93.866		SUBK00018168	(384)	-
Rush University Medical Center - Linking peripheral and brain insulin resistance to AD neuropathology	93.866		17091805-Sub04	47,835	-
Rutgers Biomedical and Health Sciences - Disease Outcomes in Older adults under extreme Heat, Air pollution and Medication use (DO-NO-HARM)	93.866		3084	56,309	-
Tornado Therapeutics, Inc. - mTOR Inhibitor Mechanism of Action Analysis in a Human Lung Chip Viral	93.866		Wyss-2023	147,687	-
Trustees of Dartmouth College - Causes and Consequences of Healthcare Inequity in Alzheimer's	93.866		R1773	58,342	-
Trustees of Dartmouth College - Causes and Consequences of Healthcare Inequity in Alzheimer's	93.866		R1774	70,684	-
University of Colorado Denver - Pitavastatin to Reduce Physical Function Impairment and Frailty in HIV	93.866		FY17.830.002	85,335	-
University of Massachusetts - Amherst - Massachusetts AI and Technology Center for Connected Care	93.866		016677-9221	15,101	-
University of Massachusetts - Amherst - Metabolomic profile of chronic distress in relation to diseases of aging across diverse populations	93.866		017425-9178	122,701	-
University of Miami - Sleep in Neurocognitive Aging and Alzheimer's Research (SANAR)	93.866		OS00000739	110,618	-
University of Pennsylvania - Novel Designs and Methods to Remove Hidden Confounding Bias in Health	93.866		579679	59,427	-
University of Rochester - Racial Disparities in Analgesic Prescribing for Post-Surgical Pain Management among Older Americans following Hip and Knee Replacement Surgeries	93.866		SUB00000474	28,507	-
University of Southern California - Harmonized Diagnostic Assessment of Dementia (DAD) for	93.866		137887989	60,481	-
University of Southern California - Harmonized Diagnostic Assessment of Dementia (DAD) for Longitudinal Aging Study of India (LASI)-Genomic study	93.866		135974887	8,704	-
University of Texas Health Science Center at Houston - Cytosolic DNA is the Link Between Genomic Instability and Cardiovascular Aging	93.866		SA0003127	136,687	-
University of Washington - Short and long-term consequences of wildfires for Alzheimer's disease and	93.866		UWSC15084	124,034	-
University of Wisconsin - Integrative Pathways to Health and Illness Project 1 - Psychosocial	93.866		3204	46,572	-
Washington University - Vulnerability and Resiliency in the Aging Adult Brain Connectome (AABC)	93.866		WU-24-0281	49,154	-
Wits Health Consortium Ltd - The complexity of informal caregiving for Alzheimer's disease and related	93.866		D1910120-01	5,568	-
Yale University - Access to Healthcare as a Driver of Place-Based Inequality in Mid-Life Mortality:	93.866		1R01AG080439-01	56,664	-
Yale University - Susceptibility and adverse health outcomes related to climate-sensitive events among older Medicare beneficiaries with Alzheimer and Dementia	93.866		CON-80004737 (GR122324)	163,768	-
Total for Assistance Listing Number 93.866				4,236,599	-
Children's Hospital Boston - Immune-Vascular Crosstalk in Retinopathy	93.867		GENFD0002187150	43,715	-
Children's Hospital Corporation - CRISPR screening for novel regulators of retinal ganglion cell survival	93.867		GENFD0002354821	141,628	-
Massachusetts Eye and Ear Infirmary - Metabolomics a novel tool for investigating the pathogenesis of Age-related Macular Degeneration	93.867		530812	216,799	-
Massachusetts General Hospital - Lithium Niobate on Insulator (LNOI) Photonic Circuit Lasers for High-	93.867		237203	2,583	-
Oregon Health and Science University - Aggregation of Deamidated Crystallins as a Major Cause of	93.867		1019270 HARVARD	19,850	-
University of Rochester - Neural mechanisms of optic flow processing for visually-guided control of steering	93.867		SUB00000421 / UR FAO GR532817	26,866	-
Total for Assistance Listing Number 93.867				451,441	-
Regents of the University of California - San Francisco - Evaluation of Natural Experiments of Nutrition Assistance to Prevent and Control Diabetes among Low-Income Communities	93.945		14696sc	35,157	-
Total for Assistance Listing Number 93.945				35,157	-
Children's Hospital Boston - International Bioethics Research Training (IBRTI - Central Asia Network)	93.989		GENFD0002300735	6,637	-
University of California, San Diego - 2/2 GeoHealth Hub for Climate Change and Health in the Middle	93.989		KR705414	24,417	-
Total for Assistance Listing Number 93.989				31,054	-

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Abt Associates, Inc. - Evaluation of the Oncology Care Model	93.RD		46244	431,350	-
AIDS Prevention Initiative in Nigeria, Ltd/Gte. - Strengthening Systems to Improve HIV Service Delivery and Other Public Health Interventions	93.RD		GH21-2147	161,767	-
Foundation for the National Institutes of Health - Pediatric Medical Devices Public-Private Partnership	93.RD		231130	134,161	-
Harvard Pilgrim Health Care - Improving Public Health Responses to Emerging Health Threats: Accelerating Mathematical Modeling Development	93.RD		200-2016-91779/75D30121F0003	1,394,230	36,441
International Consulting Associates - FDA Medical Data Enterprise – Development AI Tool	93.RD		ICA-SK-21-200-HA001/003	242,667	-
Rand Corporation - Implementation of the Medicare PDP and MA Plan Disenrollment Reasons Survey	93.RD		SCON-00000519	11,854	-
Trustees of Boston University - Development of Oxepanoprolinamide Antibiotics	93.RD		4500004904	269,727	-
Westat Corporation - Powerful and resource-efficient multi-trait analysis for large-scale multi-ethnic	93.RD		GS00F009DA	7,656	-
Westat Corporation - Secondary Data Analyses And Investigation Of Research Concepts From The Prospective Cohort Of HIV And ZIKA In Infants And Pregnancy Study (HIV ZIP)	93.RD		6579-S42	4,268	-
Total for Assistance Listing Number 93.RD				2,657,680	36,441
Total for DHHS Subaward Received Research and Development Cluster				70,126,791	592,306
EPA					
Health Effects Institute - Designing optimal policies for reducing air pollution-related health inequities	66.511		4998-RFA22-2/24	15,272	-
Health Effects Institute - Traffic-Related Air Pollution, Lipoproteins, and Cardiovascular Disease Risk in the VITamin D and OmegaA-3 Trial (VITAL)	66.511		5000	42,096	-
University of Florida - Robust statistical approaches to understanding the causal effect of air pollution	66.511		SUB00003829	22,394	-
Total for Assistance Listing Number 66.511				79,762	-
Yale University - Australian Wildfires and Perinatal Health Risks	66.RD		CON-80004984	81,318	-
Total for Assistance Listing Number 66.RD				81,318	-
Total for EPA Subaward Received Research and Development Cluster				161,080	-
Institute of Museum and Library Services					
Arizona Board of Regents, University of Arizona - 3D Research Data Curation Framework (3DFrame): Understanding 3D Data Creation, Analysis, and Preservation Practices Across Disciplines	45.312		722400	23,823	-
Total for Assistance Listing Number 45.312				23,823	-
Total for Institute of Museum and Library Services Subaward Received Research and				23,823	-
Library of Congress					
Waynesburg University - Primary Sources: The Catalyst for Cultivating Social Perspective Taking Skills, Media Literacy, and Self/Social Learning	42.010		No Award Number	5,341	-
Waynesburg University - Teaching with Primary Sources and Humanistic Stories across Media	42.010		No Award Number	14,759	-
Total for Assistance Listing Number 42.010				20,100	-
Total for Library of Congress Subaward Received Research and Development Cluster				20,100	-
NASA					
Board of Trustees of the University of Illinois - The Reading Time Machine: Transforming Astrophysical	43.001		103937-18452	44,219	-
California Institute of Technology - Global Mapping at High-Resolution of Glacial Units on Mars: Calculating Constraints on the Long-Term Evolution of the Martian Climate	43.001		S482775	1,003	-
Georgetown University - Agnostic Biosignatures for Extant Life	43.001		AWD7773186-GR205803	82,183	-
Jet Propulsion Laboratory - Biomass calibration for NASA NISAR mission	43.001		1702736	97,949	-
Jet Propulsion Laboratory - Earth Information System (EIS)	43.001		1686322	37,666	-
Jet Propulsion Laboratory - Methane and CO2 fluxes for the U.S. Greenhouse Gas Center from	43.001		1707754	36,701	-
Regents of the University of California - Santa Cruz - Moderately volatile elements as a probe of	43.001		A21-0492-S001	90,421	-

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Smithsonian Astrophysical Observatory - Participation in Advancing Miniature Lightweight X-ray Optics	43.001		SV1-11015	57,394	-
Smithsonian Astrophysical Observatory - Participation in The Swift Solar Activity X-ray Imager (SSAXI) Instrument for the Hi-C Flare Campaign Program	43.001		SV1-21019	94,786	-
University Corporation for Atmospheric Research - The Solar Imaging Metasurface Polarimeter	43.001		SUBAWD002891	87,477	-
University of Hawaii - Metasomatic Alteration of Calcium-Aluminum-Rich Inclusions from the CV3-4 and	43.001		MA1939	15,807	-
University of Washington - The Virtual Planetary Laboratory: Advancing the Search for Life Beyond the	43.001		UWSC10439	30,001	-
Washington University - Development of the High Performance Version of GEOS-Chem (GCHP) to enable broad community access to high-resolution atmospheric chemistry modeling in support of NASA	43.001		WU-20-334-MOD-6	183,773	-
Woods Hole Oceanographic Institution - Exploring Ocean Worlds: Ocean System Science to Support the	43.001		A101470 / 2314700	(705)	-
Total for Assistance Listing Number 43.001				858,675	-
Purdue University - Resilient ExtraTerrestrial Habitats	43.012		12000295-027	305,007	-
University of Oregon - Quantum Communication Links using Coherent-Filter-Based Transmitter-Receiver	43.012		231180A	165,081	-
Total for Assistance Listing Number 43.012				470,088	-
Arizona Board of Regents, University of Arizona - JWST Near Infrared Camera (NIRCam)	43.RD		152977	138,991	-
Icarus Quantum Inc. - Integration of a semiconductor quantum emitter and a lithium niobate frequency converter for telecom quantum light generation	43.RD		No Award Number	47,701	-
Southwest Research Institute - Juno Project	43.RD		699042X	236,888	-
Total for Assistance Listing Number 43.RD				423,580	-
Total for NASA Subaward Received Research and Development Cluster				1,752,343	-
National Endowment for the Humanities					
New York University - China and India in an Age of Decolonization: An Analysis of the Nehru Papers,	45.161		F2427-01	385	-
Total for Assistance Listing Number 45.161				385	-
iCivics, Inc. - Educating for American Democracy□	45.164		No Award Number	155,371	-
Total for Assistance Listing Number 45.164				155,371	-
Total for National Endowment for the Humanities Subaward Received Research and Development				155,756	-
National Science Foundation					
Arizona Board of Regents, University of Arizona - NSF Engineering Research Center for Quantum	47.041		606947	649,092	-
Florida State University - Understanding the interrelationships among floods, building characteristics, mold growth and occupants' asthma symptoms in submerged residential buildings in the aftermath of	47.041		R000002966	8,295	-
New Jersey Institute of Technology - ASCENT: From sensors to multiscale digital twin to autonomous operation of resilient electric power grids	47.041		998159	26,700	-
Purdue University - FMRG: Cyber Privacy-Preserving Tiny Machine Learning Edge Analytics to Enable AI-Commons for Secure Manufacturing	47.041		10002420-026	174,767	-
Trustees of Boston University - Nanosystems Engineering Research Center for Directed Multiscale Assembly of Cellular Metamaterials with Nanoscale Precision: CELL-MET	47.041		4500004792	300,724	-
Trustees of Boston University - Nanosystems Engineering Research Center for Directed Multiscale Assembly of Cellular Metamaterials with Nanoscale Precision: CELL-MET	47.041		4500004795	136,087	-
University of Washington - AI Institute in Dynamic Systems	47.041		UWSC13223	840,239	-
Total for Assistance Listing Number 47.041				2,135,904	-
University of Colorado at Boulder - QLCI-CI: NSF Quantum Leap Challenge Institute for Enhanced Sensing and Distribution Using Correlated Quantum States	47.048		1559522	133,615	-
Total for Assistance Listing Number 47.048				133,615	-
Association of Universities for Research in Astronomy, Inc. - Support for Rubin Commissioning	47.049		N00031946C	165,618	-

The accompanying notes are an integral part of this schedule.

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Massachusetts Institute of Technology - Center for Ultracold Atoms	47.049		s6277	1,778,865	-
Massachusetts Institute of Technology - Characterizing and Utilizing 2D van der Waals Materials with	47.049		S4874 - PO 382989	223,252	-
Massachusetts Institute of Technology - NSF PFC Center for Ultracold Atoms Renewal	47.049		S4528 - PO 128237	355,384	-
Massachusetts Institute of Technology - The NSF AI Institute for Artificial Intelligence and Fundamental	47.049		S5206, PO 560825	608,572	-
Navajo Technical University - PREM VENTURES	47.049		NTU-42770-21	95,064	-
Purdue University - RAISE-TAQs: Multifunctional Hybrid Quantum Systems for Spin-Based Quantum	47.049		10001431-011	20,057	-
Regents of the University of California - Berkeley - Does Nature Evoke the Optimum A Bioinspired	47.049		10795	61,454	-
Regents of the University of California - Berkeley - QLCI-CI: NSF Quantum Leap Challenge Institute for	47.049		11479	148,335	-
University of Chicago - ACME III: Advanced Cold Molecule Electron Electric Dipole Moment Search	47.049		AWD102289	175,529	-
University of Chicago - QLCI-CI NSF Quantum Leap Challenge Institute for Quantum Sensing in	47.049		AWD102417	63,750	-
University of Massachusetts - Amherst - RBT US-ATLAS NET2 at UMass	47.049		017255-9174	79,453	-
University of North Texas - Using uncertainty quantification and validated computational models to	47.049		GF30141-1	39,309	-
analyze pumping performance of valveless, tubular hearts					
University of Oregon - QuIC-TAQs: Implementation of a Neutral-Atom- Photonic-Cluster State	47.049		2014Y0A	205,341	-
University of Washington - QII-TAQs: Strongly Interacting Photons in Coupled Cavity Arrays: A Platform	47.049		UWSC15188	172,901	-
for Quantum Many-Body Simulation					
Total for Assistance Listing Number 47.049				4,192,884	-
Cornell University - HDR Institute: The Quantum Institute for Data and Emergence at Atomic Scales (Qu-	47.RD		138361-21048	114,898	-
American Political Science Association - Criminal Electioneering: How and Why Criminal Organizations	47.RD		No Award Number	14,850	-
American Political Science Association - Ethnic networks, merit, and the demand for redistribution	47.RD		No Award Number	13,487	-
Columbia University - Towards Life with a Reduced Protein Alphabet	47.RD		1(GG016822-01)	45,929	-
University of Georgia - DISES: Co-produced modeling of socio-environmental dynamics of financialized	47.RD		SUB00002958	114,564	-
forestlands and alternative future scenarios					
Total for Assistance Listing Number 47.RD				303,728	-
Georgia Institute of Technology/Georgia Tech Research Corporation - Collaborative Research: ICECAP	47.050		AWD-002731-G1	1,300	-
(Ice Age Chemistry and Proxies) Phase 4: Investigating aerosol transport, forcing, and climate feedbacks					
Old Dominion University Research Foundation - EAGER: The camouflaging of terrigenous organic	47.050		24-119-101010-010	46,394	-
matter as marine organic matter through hydroxyl radical oxidation via the dark Fenton reaction					
Total for Assistance Listing Number 47.050				47,694	-
Boston University School of Public Health - SCH: INT: Distributed Analytics for Enhancing Fertility in	47.070		4500003418	863	-
Children's Hospital Boston - PILOT: Predictive Intelligence for Limiting Outbreak Threats	47.070		GENFD0002242257	16,928	-
Colorado School of Mines - HDR Institute: Center for Data-Driven Dynamical Design	47.070		402052-5802	278,003	-
Computing Research Association - Computing Innovation Fellows 2020 Project	47.070		CIF2020Year3-HU	10,252	-
Computing Research Association - Computing Innovation Fellows 2021 Project	47.070		2021CIF-Harvard-06	41,816	-
Duke University - PIF: Software-Tailored Architecture for Quantum Co-Design (STAQ II)	47.070		333-000194	127,876	-
Internet2 - CI CoE: Demo Pilot: Advancing Research Computing and Data: Strategic Tools, Practices,	47.070		1048-A	5,021	-
Johns Hopkins University - Collaborative Research: CNS Core: Medium: Cross-Layer Design of Video	47.070		2005122791	112,516	-
Massachusetts Institute of Technology - A Center for Brains, Minds, and Machines: The Science and the	47.070		S3409	214,904	176,908
New York University - FAI: End-To-End Fairness for Algorithm-in-the-Loop Decision Making in the Public	47.070		F1651-02	66,366	-
University of Delaware - NRI: INT: COLLAB: Anthropomorphic Robotic Ankle Prosthesis with	47.070		57023	41,987	-
Total for Assistance Listing Number 47.070				916,532	176,908
Arizona State University - Mid-scale RI-2 Consortium: Compact X-ray Free-Electron Laser Project	47.074		ASUB00001323	30,526	-
Cary Institute of Ecosystem Studies - LTER: Long-Term Ecological Research at the Hubbard Brook	47.074		3340/200202101	229	-

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Columbia University - Theme 2: National Institute for Neural and Artificial Intelligence	47.074		4(GG019813-01)	81,944	-
Cornell University - MCA: Effects of unsteady wind and surface morphology on plant transpiration	47.074		138711-21065	15,031	-
East Carolina University - Collaborative Research: Comparative Genomics of Host-specific Adaptation and Life History Evolution in Brood Parasitic Birds	47.074		AWD-20-1326-S001	107,925	-
Field Museum of Natural History - Collaborative Research: Evolving the mammalian forelimb: modeling musculoskeletal transformation in the forerunners of mammals	47.074		50133-1-FDP	(4,279)	-
North Carolina State University - ARTS: A North American monograph of the powdery mildews	47.074		PAM-P24-001730-SA01	48,021	-
Regents of the University of California - Davis - VISABLI, an RCN-UBE for Visualizations, Interactive Simulations, and Animations for Biology Learning and Instruction	47.074		A19-0888-S001-A05	21,579	-
Simmons University - Unraveling the developmental genetics that underlie anuran limb initiation	47.074		S400036HMS	(16,459)	-
Trustees of Boston University - Collaborative Research: Comparative Genomics of Host-specific Adaptation and Life History Evolution in Brood Parasitic Birds-BU SUB	47.074		4500004301	5,143	-
Total for Assistance Listing Number 47.074				289,660	-
University of Texas - Dallas - Innovating Developmental Science with an Online, Scalable Meta-Science Platform for Investigating Cognitive Development During Early Childhood	47.075		2008652	22,334	-
Total for Assistance Listing Number 47.075				22,334	-
American Educational Research Association - The impacts of high school industry certifications:	47.076		No Award Number	10,000	-
Arizona State University - DTI: Culturally Situated Immersive Virtual Learning and Engineering Design to Build STEM Capacity in Diné Communities	47.076		ASUB00001368	77,735	-
Boston University School of Medicine - NRT-URoL: A Convergent Training Program in Biological Control	47.076		4500004817	12,710	-
Brown University - Experiments in teacher professional learning: Testing design features that accelerate instructional improvement in mathematics	47.076		2187	58,178	-
Georgia Institute of Technology/Georgia Tech Research Corporation - AI Institute: AI-Augmented Learning: Adult Learning and Online Education (ALOE)	47.076		AWD-004128-G6	94,269	-
Lawrence Hall of Science - Urban Youth Participation in Community and Citizen Science	47.076		10814	34,703	-
Rutgers University - Newark - Developing an early understanding of contagion in preschool and	47.076		2996	9,262	-
Smithsonian Astrophysical Observatory - Participation in YouthAstroNet: Research on the scale-up of innovative technology experiences in astronomy and science imaging – Scaling, Expanding, and Iterating	47.076		SV1-11010	94,796	-
Stanford University - RAPID: DRL AI: Scaffolding Automated Feedback for Teachers	47.076		63292067-309593	38,591	-
Total for Assistance Listing Number 47.076				430,244	-
Arizona Board of Regents, University of Arizona - PIRE: Black-Hole Astrophysics in the Era of Distributed	47.079		438295	10,653	-
Columbia University - Columbia University MRSEC on Precision-Assembled Quantum Materials	47.079		2(GG015783-06)	98,375	-
CRDF Global - Are TB neighborhoods a high risk population for active intervention	47.079		OISE-9531011	33,510	-
University of Chicago - PIRE: International Partnership for Cirrus Studies	47.079		FP065300-A	29,821	-
Total for Assistance Listing Number 47.079				172,359	-
University of Maine - PFI-RP: Mass-Manufacturing of Low-Cost, Lower Environmental Impact	47.084		UMS1452	80,991	-
Carnegie Mellon University - AI Institute for Societal Decision Making (AI-SDM)	47.084		1123036 - 471144	469,335	-
Total for Assistance Listing Number 47.084				550,326	-
Total for National Science Foundation Subaward Received Research and Development Cluster				9,195,280	176,908
Social Security Administration					
Board of Regents of the University of Wisconsin System - Pathways Into and Out of Homelessness: The Role of Frontline Workers to Promote Social Security Benefits Uptake and Housing Security for Adults 50	96.007		2578	18,096	-
National Bureau of Economic Research - Exploration of an Alternative Disclosure Approach for SSA	96.007		51460.02:R-DRC20-12	690	-

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National Bureau of Economic Research - Reform of the Appellate Disability Determination Process and University of Wisconsin-Madison - Older Workers, Working Longer The Role of Precarious Work	96.007		51460.05.01-NB23-13-HMS	21,507	-
	96.007		2857	151,878	83,331
Total for Assistance Listing Number 96.007				192,171	83,331
Total for Social Security Administration Subaward Received Research and Development Cluster				192,171	83,331
Total for Reseach and Development Cluster Subaward Received				103,757,185	890,902
Total for Reseach and Development Cluster				684,425,277	138,657,160
Student Financial Assistance Cluster					
Direct Award					
Department of Education					
Federal SEOG Grant 2023-2024	84.007	P007A231874		2,213,859	-
Total for Assistance Listing Number 84.007				2,213,859	-
Federal Work-Study Program (On Campus)	84.033	P033A231874		643,500	
Federal Work-Study Program (Off Campus)	84.033	P033A231874		810,234	
Total for Assistance Listing Number 84.033				1,453,734	
Federal Perkins Loans Outstanding Loans as of July 1, 2023	84.038			9,420,024	
Total for Assistance Listing Number 84.038				9,420,024	
Federal Pell Grant 2022-2023	84.063	P063P220187		2,343	-
Federal Pell Grant 2023-2024	84.063	P063P230187		8,712,785	-
Total for Assistance Listing Number 84.063				8,715,128	-
Federal Direct Student Loans 2022-2023	84.268	P063P220187		127,301	-
Federal Direct Student Loans 2023-2024	84.268	P063P230187		96,355,477	-
Total for Assistance Listing Number 84.268				96,482,778	-
Total for Department of Education Direct Award Student Financial Assistance Cluster				118,285,523	-
Department of Health and Human Services					
Health Professions Student Loans, Primary Care Loans and Loans for Disadvantaged Students (HPSL/PCL/LDS) Outstanding Loans as of July 1, 2023	93.342			12,785,044	
New Loans Issued During 2023-2024 - HPSL	93.342	4 E11HP27293 02 00		460,219	
New Loans Issued During 2023-2024 - LDS	93.342	4 E11HP27293 02 00		1,217,657	
HPSL/PCL/LDS Administrative Cost Allowance	93.342			-	
Total for Assistance Listing Number 93.342				14,462,920	
Total for DHHS Direct Award Student Financial Assistance Cluster				14,462,920	-
Total for Student Financial Assistance Direct Awards				132,748,443	-
Total for Student Financial Assistance Cluster				132,748,443	-
477 Cluster					
Direct Award					
Department of the Interior					
Leadership Development -Principals and District Leaders Within the Bureau of Indian Education (BIE)	15.130	A23AC00002-01		138,075	-
Total for Assistance Listing Number 15.130				138,075	-
Total for 477 Cluster				138,075	-
Economic Development Cluster					
Subaward Received					
Department of the Treasury					
COVID-19: Wyoming Business Council - Wyoming's Pathways to Growth, Jobs, and Prosperity	11.307	No Award Number		611,928	-

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Total for Assistance Listing Number 11.307				611,928	-
Total for Economic Development Cluster				611,928	-
Head Start					
Direct Award					
Department of Health and Human Services					
An Ecological Approach to Emotion Socialization in the Early Childhood Classroom: Examining Contextual Influences on Children's Early Social-Emotional Development	93.600	90YR0171-02-00		8,206	-
Total for Assistance Listing Number 93.600				8,206	-
Total for Head Start Cluster				8,206	-
Health Center Program Cluster					
Department of Health and Human Services					
Equitable Care For Elders	93.224	5 U30CS30788 08 00		525,227	-
Total for Assistance Listing Number 93.224				525,227	-
Total for Health Center Program Cluster				525,227	-
Other Programs					
Direct Award					
Department of Education					
Foreign Language and Area Studies: Davis Center for Russian and Eurasian Studies 2022-26	84.015	P015B220037 - 23		333,867	-
Foreign Languages and Area Studies - Center for African Studies	84.015	P015B220078-23		260,110	-
Foreign Languages and Area Studies (FLAS) - Center for African Studies	84.015	P015B180138-21		2,000	-
National Resource Center: Center for African Studies	84.015	P015A230075		164,129	-
National Resource Centers: Center for African Studies	84.015	P015A180138		(4,946)	-
National Resource Centers: Davis Center for Russian and Eurasian Studies	84.015	P015A180078 - 21		5,598	-
National Resource Centers: Davis Center for Russian and Eurasian Studies 2022-26	84.015	P015A220033		269,359	-
Total for Assistance Listing Number 84.015				1,030,117	-
Total for Department of Education Direct Award Other Programs				1,030,117	-
Department of Homeland Security					
Blue Campaign Program Evaluation and Violence Prevention	97.108	21STFRG00012-01-03		397,273	-
Terrorism and Targeted Violence Research and Evaluation	97.108	23STFRG00024-01-00		158,010	-
Total for Assistance Listing Number 97.108				555,283	-
Total for Department of Homeland Security Direct Award Other Programs				555,283	-
Department of Housing and Urban Development					
Achieving Excellence in Community Development	14.U01	No Award Number		354,352	-
Total for Assistance Listing Number 14.U01				354,352	-
THE EDWARD M. GRAMLICH FELLOWSHIP IN COMMUNITY AND ECONOMIC DEVELOPMENT	14.U02	R-NONINT-2023-71254		25,000	-
SUMMER FELLOWSHIP PROGRAM - Summer 2023					
Total for Assistance Listing Number 14.U02				25,000	-
Gramlich Fellowship - Summer 2024: The Edward M. Gramlich Fellowship in Community and Economic Development Summer Fellowship Program	14.U03	R-NONINT-2024-74956		10,000	-
Total for Assistance Listing Number 14.U03				10,000	-
Total for Department of Housing and Urban Development Direct Award Other Programs				389,352	-
Department of the Treasury					
Low Income Taxpayers Clinic	21.008	24-LITC0551-03-01		205,807	-

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Total for Assistance Listing Number 21.008				205,807	-
Total for Department of the Treasury Direct Award Other Programs				205,807	-
COVID-19: American Rescue Plan Act for National Training	93.129	4U3FCS41787 01 01		36,784	-
Equitable Care For Elders	93.129	6U30CS30788 06 01		386	-
Total for Assistance Listing Number 93.129				37,170	-
Total for DHHS Direct Award Other Programs				37,170	-
Institute of Museum and Library Services					
Hear Me Out: Expanding Hispanic engagement through collaboration	45.301	MA-245652-OMS-20		(558)	-
Marshall Family Archives Digitization Project	45.301	MA-245387-OMS-20		890	-
Total for Assistance Listing Number 45.301				332	-
Total for Institute of Museum and Library Services Direct Award Other Programs				332	-
National Endowment for the Humanities					
Imperia: An Information Ecosystem for Russian History	45.169	HAA-266553-19		(1,697)	-
Mapping Color in History	45.169	HAA-290367-23		230,642	-
NEH Digital Humanities Advancement Grant	45.169	HAA-287761-22		62,424	-
Turath: Arabian Peninsula Digital Archive	45.169	HAA-287905-22		17,849	-
Total for Assistance Listing Number 45.169				309,218	-
Total for National Endowment for the Humanities Direct Award Other Programs				309,218	-
Total for Other Programs Direct Awards				2,527,279	-
Subaward Received					
Department of Homeland Security					
COVID-19: Massachusetts Emergency Management Agency (MEMA) - PEP 6: Mask Reimbursement	97.036		CTFEMA4496HARVC0180	1,909,509	-
Total for Assistance Listing Number 97.036				1,909,509	-
Total for Department of Homeland Security Subaward Received Other Programs				1,909,509	-
Department of Justice					
Brockton Public Schools - SAVE (Solutions to Averting Violence in Education)	16.U01		BJA-2020-17313	23	-
Total for Assistance Listing Number 16.U01				23	-
Total for Department of Justice Subaward Received Other Programs				23	-
Department of State					
Fulbright University Vietnam USA - Open Policy Dialogue and Academic Collaboration with Fulbright	19.451		100006-3099-2	310,000	-
Fulbright University Vietnam USA - Open Policy Dialogue and Academic Collaboration with Fulbright	19.451		100008-0079-1	250,924	-
Total for Assistance Listing Number 19.451				560,924	-
National Endowment for the Humanities					
University of Texas - Austin - Computational Tools for Diachronic and Cross-cultural Study of Literature: Multilingual Stylometry and Phylogenetic Profiling	45.169		UTA21-000156	35,098	-
Total for Assistance Listing Number 45.169				35,098	-
Total for National Endowment for the Humanities Subaward Received Other Programs				35,098	-
Total for Other Programs Subawards Received				2,505,554	-
Total for Other Programs Cluster				5,032,833	-
Grand Total				\$ 823,489,989	\$ 138,657,160

Harvard University

Notes to Schedule of Expenditures of Federal Awards

Year Ended June 30, 2024

1. Basis of Presentation and Summary of Significant Accounting Policies

The accompanying Schedule of Expenditures of Federal Awards (the "Schedule") summarizes the expenditures of Harvard University (the "University") under programs of the federal government for the year ended June 30, 2024. The information in this Schedule is presented in accordance with the 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 this Schedule may differ from amounts presented in, or used in the preparation of, the financial statements of the University. Negative amounts represent adjustments or credits to amounts reported as expenditures in prior years in the normal course of business.

Assistance Listing Numbers and pass-through numbers are provided when available.

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 or organizations pursuant to Federal grants, contracts and similar agreements.

Expenditures reported in the Schedule are reported on the accrual basis of accounting. Such expenditures are recognized following the cost principles contained in the Uniform Guidance, as applicable, wherein certain types of expenditures are not allowable or are limited to reimbursement.

2. Facilities and Administrative Costs

The University applies its predetermined 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 University recovers facilities and administrative costs associated with sponsored agreements pursuant to separate arrangements negotiated with the University's Federal cognizant agency by each of the Medical School, T.H. Chan School of Public Health, and the University Area. Predetermined federal indirect cost rates have been established for the University Area and the Medical School (including the School of Dental Medicine) through fiscal year 2028. The T.H. Chan School of Public Health has predetermined federal indirect cost rates through fiscal year 2024.

3. Federal Student Loan Programs

The Federal student loan programs listed below are administered directly by the University and balances and transactions relating to these programs are included in the University's consolidated financial statements. Loans outstanding at the beginning of the year, the administrative cost allowance and loans made during the year are included in the federal expenditures presented in the Schedule. The balance of loans outstanding at June 30, 2024 consist of:

	Assistance Listing #	Amount
Perkins	84.038	6,017,905
HPSL/LDS/PCL	93.342	12,946,175
Total Federal Student Loans		\$ 18,964,080

Harvard University

Notes to Schedule of Expenditures of Federal Awards

Year Ended June 30, 2024

Loans made by the University to eligible students under the Federal student loan programs and Federally guaranteed loans issued to students during the year ended June 30, 2024 are summarized as follows:

	Assistance Listing #:	Amount
Perkins	84.038	\$ -
Net Direct Subsidized Stafford	84.268	1,107,060
Net Direct Unsubsidized Stafford	84.268	54,747,371
Net Direct PLUS	84.268	4,619,469
Net Direct Grad PLUS	84.268	36,008,878
HPSL/LDS/PCL	93.342	1,677,876
Total		\$ 98,160,654

Part II
Reports on Internal Control and Compliance



Report of Independent Auditors 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*

To the Joint Committee on Inspection of the Governing Boards of Harvard University

We have audited, in accordance with 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 Harvard University and its subsidiaries (the "University"), which comprise the consolidated balance sheet as of June 30, 2024 and the related consolidated statements of changes in net assets with general operating account detail and of changes in net assets of the endowment and of cash flows for the year then ended, including the related notes (collectively referred to as the "consolidated financial statements"), and have issued our report thereon dated October 16, 2024.

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 University'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 University's internal control and compliance. Accordingly, this communication is not suitable for any other purpose.

PricewaterhouseCoopers LLP

Boston, Massachusetts
October 16, 2024



Report of Independent Auditors on Compliance for Each Major Program and on Internal Control Over Compliance Required by Uniform Guidance

To the Joint Committee on Inspection of the Governing Boards of Harvard University

Report on Compliance for Each Major Federal Program

Opinion on Each Major Federal Program

We have audited Harvard University's (the "University") 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, 2024. The University's major federal programs are identified in the summary of auditor's 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, 2024.

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 (US 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 US 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 US 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 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.

Princeton University

Boston, Massachusetts

January 29, 2025

Part III
Audit Findings and Questioned Costs

Harvard University

Schedule of Findings and Questioned Costs

Year Ended June 30, 2024

I. Summary of Auditors' Results

Financial statements

Type of audit report issued	Unmodified
Internal control over financial reporting:	
▪ Material weaknesses identified?	No
▪ Significant deficiency(ies) identified that are not considered to be material weaknesses?	None reported
▪ Noncompliance which is material to the financial statements noted?	No

Federal awards

Internal control over major programs:	
▪ Material weaknesses identified?	No
▪ Significant deficiency(ies) identified that are not considered to be material weaknesses?	None reported
Type of auditor's report issued on compliance for major programs:	Unmodified
Any audit findings disclosed that are required to be reported in accordance with 2 CFR 200.516(a)?	No

Identification of major programs

Assistance Listing Number	Name of Federal Program or Cluster
Various 84.015	Research and Development Cluster Foreign Language and Area Studies Program
Dollar threshold to distinguish between Type A and Type B programs	\$ 3,000,000
Auditee qualifies as a low-risk auditee?	Yes

II. Financial Statement Findings

None noted.

III. Federal Award Findings

None noted.

Harvard University

Summary of Status of Prior Audit Findings

Year Ended June 30, 2024

2023-001 – Enrollment Reporting

Cluster: Student Financial Assistance

Sponsoring Agency: Department of Education

Award Name: Federal Pell Grant Program and Federal Direct Student Loans

Award Numbers: Not applicable

Assistance Listing Titles: Federal Pell Grant Program and Federal Direct Student Loans

Assistance Listing Numbers: 84.063 and 84.268

Award Year: 2022-2023

Pass-through entity: Not applicable

As described in finding 2023-001, there were four students with an incorrect program level status effective date, and six students who were reported to the National Student Loan Data System as withdrawn (status 'W') rather than a graduation status ('G'). These findings were limited to one Harvard unit and did not impact the loan repayment status for any student.

To address these findings, Harvard University corrected the enrollment reporting logic within the Harvard school's reporting system, Ellucian Banner. Additionally, Harvard implemented an updated National Student Clearinghouse (NSC) reporting file to correctly transmit the graduation status in all graduation cycles. Both of these updates were successfully executed in November 2023. Also at this one unit, management reviewed enrollment reporting activity through the end of fiscal year 2024, to ensure the updated reporting logic was performing as expected, and the updated file was being transmitted to the NSC correctly.