Harvard University

Report on Federal Awards in Accordance with the Uniform Guidance
June 30, 2023
EIN #04-2103580

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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, 2023, 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, 2023 and of cash flows for the years ended June 30, 2023 and 2022, 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 consolidated financial position of the University as of June 30, 2023, and the changes in its net assets for the year ended June 30, 2023 and its cash flows for the years ended June 30, 2023 and 2022 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, 2022, 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 12, 2022, 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, 2022 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, 2023 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 Reporting Required by *Government Auditing Standards*

In accordance with *Government Auditing Standards*, we have also issued our report dated October 18, 2023 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, 2023. 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.

PricewaterhouseCoopers LLP

Boston, Massachusetts
October 18, 2023

CONSOLIDATED BALANCE SHEETS

with summarized financial information as of June 30, 2022

In thousands of dollars	June 30 2023	2022
ASSETS:		
Cash and cash equivalents	**$ 245,589**	$ 283,227
Receivables, net *(Note 4)*	**349,271**	339,792
Prepayments and deferred charges	**362,676**	317,448
Operating leases—right of use assets *(Note 18)*	**715,444**	677,147
Notes receivable, net *(Note 5)*	**400,401**	380,812
Pledges receivable, net *(Note 6)*	**2,699,634**	2,592,434
Fixed assets, net *(Note 7)*	**8,595,983**	8,442,840
Interests in trusts held by others *(Note 3)*	**438,892**	432,896
Securities pledged to counterparties, at fair value *(Note 3)*	**122,758**	179,514
Investment portfolio, at fair value *(Note 3)*	**59,078,919**	59,135,219
TOTAL ASSETS	**$ 73,009,567**	**$ 72,781,329**
LIABILITIES:		
Accounts payable	**$ 416,881**	$ 486,707
Deferred revenue and other liabilities	**1,747,823**	1,708,821
Operating lease liabilities *(Note 18)*	**754,195**	689,342
Other liabilities associated with the investment portfolio *(Notes 3 and 10)*	**629,995**	718,031
Liabilities due under split interest agreements *(Note 9)*	**886,222**	886,017
Bonds and notes payable *(Note 10)*	**6,214,734**	6,117,203
Accrued retirement obligations *(Note 11)*	**840,198**	928,514
TOTAL LIABILITIES	**11,490,048**	**11,534,635**
NET ASSETS	**61,519,519**	**61,246,694**
TOTAL LIABILITIES AND NET ASSETS	**$ 73,009,567**	**$ 72,781,329**

	Without donor restrictions	With donor restrictions	June 30 2023	2022
NET ASSETS:				
General Operating Account (GOA) *(Note 8)*	$ 6,640,552	$ 3,496,156	$ 10,136,708	$ 9,668,474
Endowment *(Note 8)*	9,229,293	41,519,301	50,748,594	50,877,680
Split interest agreements *(Note 9)*		634,217	634,217	700,540
TOTAL NET ASSETS	**$ 15,869,845**	**$ 45,649,674**	**$ 61,519,519**	**$ 61,246,694**

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, 2022

In thousands of dollars	Without Donor Restrictions	With Donor Restrictions	For the year ended June 30 2023	2022
OPERATING REVENUE:				
Net student income *(Notes 2 and 12)*	$ 1,331,557		**$ 1,331,557**	$ 1,223,363
Sponsored support *(Note 13)*				
Federal government – direct costs	491,878		**491,878**	460,707
Federal government – indirect costs	184,257		**184,257**	181,439
Non-federal sponsors – direct costs	93,069	$ 204,777	**297,846**	288,302
Non-federal sponsors – indirect costs	27,014	24,667	**51,681**	45,309
Total sponsored support	796,218	229,444	**1,025,662**	**975,757**
Gifts for current use *(Note 14)*	149,759	336,123	**485,882**	504,736
Investment income:				
Endowment returns made available for operations *(Note 8)*	420,219	1,824,480	**2,244,699**	2,118,855
GOA returns made available for operations	173,279		**173,279**	153,110
Other investment income	38,734	4,571	**43,305**	21,647
Total investment income	632,232	1,829,051	**2,461,283**	**2,293,612**
Other revenue *(Note 15)*	792,916		**792,916**	838,323
Net assets released from restriction	2,305,695	(2,305,695)	**0**	0
TOTAL OPERATING REVENUE	**6,008,377**	**88,923**	**6,097,300**	**5,835,791**
OPERATING EXPENSES:				
Salaries and wages	2,421,076		**2,421,076**	2,206,342
Employee benefits *(Note 11)*	628,304		**628,304**	583,931
Services purchased	791,941		**791,941**	732,709
Depreciation *(Note 7)*	424,809		**424,809**	428,860
Space and occupancy	394,079		**394,079**	353,786
Supplies and equipment	283,323		**283,323**	271,084
Interest *(Note 10)*	208,590		**208,590**	187,534
Scholarships and other student awards *(Note 12)*	181,295		**181,295**	171,312
Other expenses *(Note 16)*	578,380		**578,380**	494,575
TOTAL OPERATING EXPENSES	**5,911,797**	**0**	**5,911,797**	**5,430,133**
NET OPERATING SURPLUS	**96,580**	**88,923**	**185,503**	**405,658**
NON-OPERATING ACTIVITIES:				
Income from GOA Investments	24,769		**24,769**	15,206
GOA realized and change in unrealized appreciation/(depreciation), net *(Note 3)*	146,519		**146,519**	(259,353)
GOA returns made available for operations	(173,279)		**(173,279)**	(153,110)
Change in pledge balances *(Note 6)*		286,022	**286,022**	88,930
Change in interests in trusts held by others		(2,125)	**(2,125)**	(5,803)
Gifts for facilities and loan funds *(Note 14)*		96,175	**96,175**	87,874
Change in retirement obligations *(Note 11)*	70,158		**70,158**	142,745
Other changes	7,743		**7,743**	(11,067)
Transfers between GOA and endowment *(Note 8)*	(194,430)	(7,219)	**(201,649)**	(103,810)
Transfers between GOA and split interest agreements *(Note 9)*		28,398	**28,398**	25,213
Non-operating net assets released from restrictions	142,634	(142,634)	**0**	0
TOTAL NON-OPERATING ACTIVITIES	**24,114**	**258,617**	**282,731**	**(173,175)**
GENERAL OPERATING ACCOUNT NET CHANGE DURING THE YEAR	**120,694**	**347,540**	**468,234**	**232,483**
Endowment net change during the year	171,324	(300,410)	**(129,086)**	(2,288,073)
Split interest agreements net change during the year *(Note 9)*		(66,323)	**(66,323)**	(72,790)
NET CHANGE DURING THE YEAR	**292,018**	**(19,193)**	**272,825**	**(2,128,380)**
Net assets, beginning of year	15,577,827	45,668,867	**61,246,694**	**63,375,074**
NET ASSETS, END OF YEAR	**$ 15,869,845**	**$ 45,649,674**	**$ 61,519,519**	**$ 61,246,694**

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, 2022

In thousands of dollars	Without Donor Restrictions	With Donor Restrictions	For the year ended June 30 2023	2022
Investment return *(Note 3)*:				
Income from general investments	$ 34,240	$ 149,482	**$ 183,722**	$ 132,924
Realized and change in unrealized appreciation/(depreciation), net	214,972	938,954	**1,153,926**	(1,074,881)
Total investment return	249,212	1,088,436	**1,337,648**	**(941,957)**
Endowment returns made available for operations	(420,219)	(1,824,480)	**(2,244,699)**	(2,118,855)
Net investment return	(171,007)	(736,044)	**(907,051)**	**(3,060,812)**
Gifts for endowment *(Note 14)*	102,839	457,768	**560,607**	583,650
Transfers between endowment and the GOA *(Note 8)*	194,430	7,219	**201,649**	103,810
Capitalization of split interest agreements *(Note 9)*		50,747	**50,747**	18,603
Change in pledge balances *(Note 6)*		(179,700)	**(179,700)**	168,095
Change in interests in trusts held by others *(Note 8)*		8,121	**8,121**	(77,058)
Other changes	(5,173)	141,714	**136,541**	(24,361)
Net assets released from restrictions	50,235	(50,235)	**0**	0
NET CHANGE DURING THE YEAR	**171,324**	**(300,410)**	**(129,086)**	**(2,288,073)**
Net assets of the endowment, beginning of year	9,057,969	41,819,711	**50,877,680**	53,165,753
NET ASSETS OF THE ENDOWMENT, END OF YEAR	**$ 9,229,293**	**$ 41,519,301**	**$ 50,748,594**	**$ 50,877,680**

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

CONSOLIDATED STATEMENTS OF CASH FLOWS

with summarized financial information for the year ended June 30, 2022

In thousands of dollars	For the year ended June 30 2023	2022
CASH FLOWS FROM OPERATING ACTIVITIES:		
Change in net assets	**$ 272,825**	$ (2,128,380)
Adjustments to reconcile change in net assets to net cash (used in) operating activities:		
Depreciation	**424,809**	428,860
Amortization of premium and discount related to bonds and notes payable	**(37,179)**	(35,865)
Realized and change in unrealized (appreciation)/depreciation, net	**(1,336,740)**	1,511,867
Change in fair value of interest rate exchange agreements	**(4,985)**	(22,704)
Change in interests in trusts held by others	**(5,996)**	82,861
Change in liabilities due under split interest agreements	**42,175**	(101,062)
Gifts of donated securities	**(64,469)**	(81,017)
Proceeds from the sales of gifts of unrestricted securities	**16,437**	15,069
Gifts for restricted purposes	**(504,714)**	(556,994)
Cost of issuance of debt	**409**	343
Loss on disposal of assets	**8,923**	23,439
Change in accrued retirement obligations	**(88,316)**	(150,133)
Non-cash operating lease costs	**(38,297)**	12,815
Changes in operating assets and liabilities:		
Receivables, net	**(9,479)**	(17,310)
Prepayments and deferred charges	**(45,228)**	(2,276)
Pledges receivable, net	**(107,200)**	(256,476)
Accounts payable	**(82,631)**	(6,807)
Deferred revenue and other liabilities	**43,770**	(36,662)
Operating lease liability	**64,853**	(13,530)
NET CASH (USED IN) OPERATING ACTIVITIES	**(1,451,033)**	**(1,333,962)**
CASH FLOWS FROM INVESTING ACTIVITIES:		
Loans made to students, faculty, and staff	**(62,985)**	(64,584)
Payments received on student, faculty, and staff loans	**42,902**	48,654
Change in other notes receivable	**494**	12,714
Proceeds from the sales and maturities of investments	**8,689,761**	15,503,537
Purchase of investments	**(7,988,945)**	(14,028,307)
Change associated with repurchase agreements	**599,085**	(699,810)
Additions to fixed assets	**(578,365)**	(426,773)
NET CASH PROVIDED BY INVESTING ACTIVITIES	**701,947**	**345,431**
CASH FLOWS FROM FINANCING ACTIVITIES:		
Change in overdrafts included in accounts payable	**4,295**	(740)
Change in split interest agreements from new contributions, income and payments to annuitants	**(41,970)**	(32,278)
Proceeds from issuance of debt	**177,296**	746,530
Debt repayments	**(42,995)**	(97,004)
Proceeds from the sales of gifts of restricted securities	**48,032**	65,948
Gifts for restricted purposes	**504,714**	556,994
Change in government loan advances	**(4,768)**	(6,350)
NET CASH PROVIDED BY FINANCING ACTIVITIES	**644,604**	**1,233,100**
NET CHANGE IN CASH	**(104,482)**	**244,569**
Cash, beginning of year	**1,808,872**	**1,564,303**
CASH, END OF YEAR	**$ 1,704,390**	**$ 1,808,872**
Cash and cash equivalents (per *Consolidated Balance Sheets*)	**$ 245,589**	**$ 283,227**
Cash and cash equivalents held in investments *(Note 3)*	**1,458,801**	**1,525,645**
TOTAL CASH AND CASH EQUIVALENTS	**$ 1,704,390**	**$ 1,808,872**
Supplemental disclosure of cash flow information:		
Accounts payable related to fixed asset additions	$ 54,092	$ 45,583
Cash paid for interest	$ 235,881	$ 222,932
New operating leases – right of use assets	$ 150,680	$ 66,537

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 7,200 undergraduate and 14,200 graduate students in fiscal year 2023, as compared to 7,100 undergraduate and 14,100 graduate students in fiscal year 2022. 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*.

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, 2022, 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 82% of the University's net assets without donor-imposed restrictions as of June 30, 2023. 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, 2023	2022
FINANCIAL ASSETS		
Cash and cash equivalents	$ 245,589	$ 283,227
Receivables, net	349,271	339,792
Pledge receivables due in one year	459,286	376,097
Cash and short-term investments held separately by General Operating Account (GOA)[1]	1,418,472	2,236,157
Endowment returns made available for operations in the following year	2,649,533	2,460,142
TOTAL FINANCIAL ASSETS AVAILABLE WITHIN ONE YEAR	**$ 5,122,151**	**$ 5,695,415**
LIQUIDITY RESOURCES		
Credit facility, undrawn balance	1,500,000	1,500,000
Tax-exempt commercial paper, undrawn balance	975,000	1,000,000
Taxable commercial paper, undrawn balance	1,847,704	2,000,000
TOTAL FINANCIAL ASSETS AND LIQUIDITY RESOURCES AVAILABLE WITHIN ONE YEAR	**$ 9,444,855**	**$ 10,195,415**

[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, as referenced on page 7 in the Financial Overview.*

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 $9.2 billion and $9.1 billion in endowment funds without donor restrictions at June 30, 2023 and 2022, respectively, and $5.6 billion and $4.7 billion of General Operating Account investments (GOA) at June 30, 2023 and 2022, 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 $208.3 million and $209.1 million at June 30, 2023 and 2022, respectively, which are primarily recognized in the subsequent fiscal year.

Total student income of $1.3 billion and $1.2 billion was recorded during the years ended June 30, 2023 and 2022, respectively. Student tuition, fees, board and lodging at published rates is summarized as follows for the years ended June 30, 2023 and 2022 (in thousands of dollars):

	2023	2022
Undergraduate program	**$ 409,890**	$ 390,809
Graduate and professional degree programs	**687,136**	652,005
Continuing education and executive programs	**544,039**	486,682
Board and lodging	**221,235**	199,771

Scholarships applied to student charges were $530,743 and $505,904 for the years ended June 20, 2023 and 2022, 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 $84.7 million and $64.3 million as of June 30, 2023 and 2022, respectively. As of June 30, 2023, 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 $792.9 million in fiscal 2023 and $838.3 million in fiscal 2022 includes several revenue streams considered exchange contracts with customers totaling $651.5 million for fiscal year 2023 and $726.9 million in fiscal year 2022. These revenues are recognized at the point in time goods or services are provided. Deferred revenues related to other revenue of $96.5 million and $104.7 million were recorded as of June 30, 2023 and 2022, 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. The University self-insures a portion of its 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. 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 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 an insured dental plan, and is self-insured for unemployment, the primary retiree health plan, and all health and dental 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, 2021, the University adopted ASU 2018-15, *Intangibles — Goodwill and Other — Internal-Use Software (Subtopic 350-40): Customer's Accounting for Implementation Costs Incurred in a Cloud Computing Arrangement That is a Service Contract*. This guidance aligns the requirements for capitalizing implementation costs incurred in a hosting arrangement that is a service contract with the requirements for capitalizing implementation costs incurred to develop or obtain internal-use software or software licenses. The University adopted ASU 2018-15 prospectively. This guidance did not have a significant impact on the University's consolidated financial statements.

Effective July 1, 2021, the University adopted ASU 2020-07, *Presentation and Disclosures by Not-for-Profit Entities for Contributed Nonfinancial Assets*. This guidance is intended to increase transparency on how contributed nonfinancial assets are to be used and valued. The University adopted ASU 2020-07 prospectively. This guidance did not have a significant impact on the University's consolidated financial statements.

Effective July 1, 2021, the University adopted ASU 2018-14, *Disclosure Framework — Changes to the Disclosure Requirements for Defined Benefit Plans,* which amends ASC 715, Compensation — Retirement Benefits. This accounting pronouncement modifies the disclosure requirements for employers that sponsor defined benefit pension or other postretirement plans. The University adopted ASU 2018-14 on a retrospective basis. The effects of adopting this amendment are addressed in *Note 11*.

In September 2022, the FASB issued ASU 2022-04, *Disclosure of Supplier Finance Program Obligations*. Under ASU 2022-04, the buyer in a supplier finance program is required to disclose information about the key terms of the program, outstanding confirmed amounts as of the end of the period, a rollforward of such amounts during each annual period, and a description of where in the financial statements outstanding amounts are presented. With the exception of the disclosure of rollforward information, the ASU is effective for fiscal year 2024 for the University. The rollforward requirement is effective for fiscal year 2025 for the University. The University is currently evaluating the impact of the new guidance on the consolidated financial statements, but does not believe the adoption will impact the consolidated financial statements going forward.

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.

In June 2016, the FASB issued 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 is effective for fiscal year 2024 for the University. The University is currently evaluating the impact of the new guidance on the consolidated financial statements.

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, 2023 and 2022 are summarized in the following table (in thousands of dollars):

	2023	2022
Investment portfolio assets		
Pooled general investment account assets	**$ 56,633,201**	$ 55,938,831
Other investments	**2,445,718**	3,196,388
Investment portfolio, at fair value	**59,078,919**	**59,135,219**
Securities pledged to counterparties, at fair value	**122,758**	179,514
TOTAL INVESTMENT ASSETS	**59,201,677**	**59,314,733**
Pooled general investment account liabilities	**626,371**	709,422
Interest rate exchange agreement	**3,624**	8,609
TOTAL OTHER LIABILITIES ASSOCIATED WITH THE INVESTMENT PORTFOLIO	**629,995**	**718,031**
TOTAL INVESTMENTS, NET	**$ 58,571,682**	**$ 58,596,702**

As of June 30, 2023 and 2022, University net investments were comprised of the following components (in thousands of dollars):

	2023	2022
POOLED GENERAL INVESTMENT ACCOUNT		
Endowment[1]	**$ 48,679,919**	$ 48,798,038
General operating account	**5,577,019**	4,658,269
Split interest agreements	**863,185**	934,971
Other internally designated funds	**1,009,465**	1,017,645
TOTAL POOLED GENERAL INVESTMENT ACCOUNT NET ASSETS	**$ 56,129,588**	**$ 55,408,923**
OTHER INVESTMENTS OUTSIDE THE GENERAL INVESTMENT ACCOUNT		
General operating and other investments[2]	**1,784,840**	2,536,192
Split interest agreements	**657,254**	651,587
TOTAL OTHER INVESTMENTS OUTSIDE THE GENERAL INVESTMENT ACCOUNT	**$ 2,442,094**	**$ 3,187,779**
TOTAL INVESTMENTS, NET	**$ 58,571,682**	**$ 58,596,702**

[1] *As of June 30, 2023, the total net assets of the endowment of $50,748,594 is comprised of investments in the GIA of $48,679,919, pledges of $1,253,486, interests in trusts held by others of $411,747, and $403,442 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 totaling $1,427,153 and $2,238,277 as of June 30, 2023 and 2022, respectively.*

Investment return

A summary of the University's total return on investments for fiscal years 2023 and 2022 is presented below (in thousands of dollars):

	2023	2022
Return on pooled general investment account:		
Realized and change in unrealized appreciation/(depreciation), net	**$ 1,320,925**	$ (1,223,200)
Interest, dividend, fees, and expenses, net	**211,887**	150,734
Total return on pooled general investment account[1]	**1,532,812**	**(1,072,466)**
Return on other investments:		
Realized and change in unrealized appreciation/(depreciation), net	**15,815**	(288,667)
Interest, dividend, fees, and expenses, net	**59,722**	36,225
Total return on other investments	**$ 75,537**	**$ (252,442)**
Realized and change in unrealized appreciation on interest rate exchange agreement, net	**3,929**	19,169
TOTAL RETURN ON INVESTMENTS[2]	**$ 1,612,278**	**$ (1,305,739)**

[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, 2023 and summarized as of June 30, 2022 (in thousands of dollars):

	2023					2022
	Level 1	Level 2	Level 3[6]	NAV as Practical Expedient	Total	Total
ASSETS:						
Cash and cash equivalents[1]	$ 1,458,801				**$ 1,458,801**	**$ 1,525,645**
Repurchase agreements		$ 150,789			**150,789**	**749,873**
Domestic equity	1,532,888			$ 1,856,474	**3,389,362**	**3,085,276**
Foreign equity	290,381			786,461	**1,076,842**	**2,071,270**
Global equity				1,211,417	**1,211,417**	**1,262,693**
Domestic fixed income	1,984,636	10,065		1,057,153	**3,051,854**	**2,787,349**
Foreign fixed income	15,839				**15,839**	**17,479**
Emerging market equity and debt	29,932			3,093,108	**3,123,040**	**3,352,726**
High yield	13,863		$ 290,011		**303,874**	**301,106**
Hedge funds				17,267,674	**17,267,674**	**16,774,488**
Private equity			1,157,032	21,966,842	**23,123,874**	**21,940,923**
Natural resources	979			428,260	**429,239**	**431,129**
Real estate			7,170	2,996,167	**3,003,337**	**3,277,320**
Inflation-indexed bonds	1,077,269				**1,077,269**	**1,097,023**
Due from brokers		89,209	4,645		**93,854**	**22,186**
Other investments		82,826			**82,826**	**65,208**
INVESTMENT ASSETS SUBJECT TO FAIR VALUE LEVELING	**$ 6,404,588**	**$ 332,889**	**$ 1,458,858**	**$ 50,663,556**	**$ 58,859,891**	**$ 58,761,694**
Other investment assets not subject to fair value[2]					**341,786**	**553,039**
TOTAL INVESTMENT ASSETS[3]					**$ 59,201,677**	**$ 59,314,733**
Interests in trusts held by others[4]			438,892		**438,892**	**432,896**
NON-INVESTMENT ASSETS SUBJECT TO FAIR VALUE LEVELING			**$ 438,892**		**$ 438,892**	**$ 432,896**
TOTAL ASSETS					**$ 59,640,569**	**$ 59,747,629**
LIABILITIES:						
Due to brokers[5]	$ 4,142	$ 14,073			**$ 18,215**	**$ 77,081**
Other liabilities subject to fair value			$ 138,733		**138,733**	**154,949**
INVESTMENT LIABILITIES SUBJECT TO FAIR VALUE LEVELING	**$ 4,142**	**$ 14,073**	**$ 138,733**		**$ 156,948**	**$ 232,030**
Other investment liabilities not subject to fair value					**473,047**	**486,001**
TOTAL INVESTMENT LIABILITIES[3]					**$ 629,995**	**$ 718,031**
Liabilities due under split interest agreements[4]		$ 886,222			**886,222**	**886,017**
NON-INVESTMENT LIABILITIES SUBJECT TO FAIR VALUE LEVELING		**$ 886,222**			**$ 886,222**	**$ 886,017**
TOTAL LIABILITIES					**$ 1,516,217**	**$ 1,604,048**

[1] *This excludes money markets held in "Cash and cash equivalents" on the* Consolidated Balance Sheets *of $55.0 million and $65.0 million as of June 30,2023 and 2022, respectively, which are Level 1 investments.*

[2] *As of June 30, 2023 and 2022 other assets not subject to fair value consists primarily of receivables for transactions that settled subsequent to the balance sheet date of $239,815 and $480,949, respectively.*

[3] *As of June 30, 2023 and 2022, total investment assets, net equal $58,571,682 and $58,596,702, 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 $3,624 and $8,609 as of June 30, 2023 and 2022, respectively.*

[6] *As of June 30, 2023 $549,555 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, 2023 and the condensed June 30, 2022 rollforward of Level 3 investments (in thousands of dollars).

	Beginning balance as of July 1, 2022	Net realized gains/ (losses)	Net change in unrealized (depreciation)/ appreciation[1]	Purchases/ contributions	Sales/ distributions	Transfers out of Level 3[2]	Ending balance as of June 30, 2023
INVESTMENT ASSETS:							
High yield	$ 298,319	$ 1,428	$ (9,346)	$ 423,970	$ (424,360)		**$ 290,011**
Private equity	1,174,625	51,473	(58,833)	94,293	(104,426)	$ (100)	**1,157,032**
Real estate	25,074	(28,822)	11,622		(704)		**7,170**
Due from brokers	4,640		5				**4,645**
INVESTMENT ASSETS SUBJECT TO FAIR VALUE LEVELING	**$ 1,502,658**	**$ 24,079**	**$ (56,552)**	**$ 518,263**	**$ (529,490)**	**$ (100)**	**$ 1,458,858**
Interests in trusts held by others	$ 432,896		8,008		(2,012)		**$ 438,892**
NON-INVESTMENT ASSETS SUBJECT TO FAIR VALUE LEVELING	**$ 432,896**		**$ 8,008**		**$ (2,012)**		**$ 438,892**
TOTAL ASSETS SUBJECT TO FAIR VALUE LEVELING	**$ 1,935,554**	**$ 24,079**	**$ (48,544)**	**$ 518,263**	**$ (531,502)**	**$ (100)**	**$ 1,897,750**
INVESTMENT LIABILITIES:							
Other liabilities subject to fair value	$ 154,949		$ 364	$ (98,916)	$ 82,336		**$ 138,733**
TOTAL LIABILITIES SUBJECT TO FAIR VALUE LEVELING	**$ 154,949**	**$ 0**	**$ 364**	**$ (98,916)**	**$ 82,336**		**$ 138,733**
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 (depreciation)/appreciation, 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.*

	Beginning balance as of July 1, 2021	Net realized gains/ (losses)	Net change in unrealized (depreciation)/ appreciation[1]	Purchases/ contributions	Sales/ distributions	Transfers out of Level 3[2]	Ending balance as of June 30, 2022
PRIOR YEAR NET ASSETS SUBJECT TO FAIR VALUE LEVELING	**$ 2,560,200**	**$ 18,622**	**$ (1,086)**	**$ 631,136**	**$ (1,284,805)**	**$ (143,462)**	**$ 1,780,605**

[1] *Total change in unrealized (depreciation)/appreciation relating to Level 3 investment assets and investment liabilities still held by the University at June 30, 2022 is $95,568 and is reflected in "Realized and change in unrealized (depreciation)/appreciation, 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, 2023, 15% 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, 2023 and 2022 the University had gross asset repurchase agreements of $0.2 billion and $0.8 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, 2023 and 2022 (in thousands of dollars):

	As of June 30, 2023			For the year ended June 30, 2023	As of June 30, 2022			For the year ended June 30, 2022
Primary risk exposure	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]
Equity instruments	$ 2,328,894	$ 115,648	$ 41,180	$ 131,794	$ 5,009,087	$ 79,784	$ 130,849	$ 484,118
Fixed income instruments[1]	117,000		3,624	3,929	117,000		8,609	19,169
Currency instruments	18,875	1,121	1,123	(1,792)	6,867	1,628	1,626	2,290
Credit instruments	4,800	4,797		132	4,752	4,777		(24)
SUBTOTAL		**$ 121,566**	**$ 45,927**	**$ 134,063**		**$ 86,189**	**$ 141,084**	**$ 505,553**
TOTAL COUNTERPARTY NETTING[2]		**(27,712)**	**(27,712)**			**(68,643)**	**(68,643)**	
NET AMOUNTS INCLUDED IN THE *CONSOLIDATED BALANCE SHEETS*[3]		**93,854**	**18,215**			**17,546**	**72,441**	
Collateral								
Cash collateral received/posted		120				115		
Securities collateral received/ posted[5]		89,351	98,305			9,606	156,121	
TOTAL SECURITIES COLLATERAL RECEIVED/POSTED		**89,471**	**98,305**			**9,721**	**156,121**	
NET AMOUNT		**4,383**	**(80,090)**			**7,825**	**(83,680)**	
NET AMOUNT IN ACCORDANCE WITH ASC 210[6]		**$ 4,383**	**$ 0**			**$ 7,825**	**$ 0**	

[1] *For the year ended June 30, 2023 and 2022 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 (depreciation)/appreciation, 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, 2023 and 2022 are disclosed below (in thousands of dollars):

	As of June 30, 2023			As of June 30, 2022		
	Fair value[1]	Remaining unfunded commitments	Estimated remaining life[2]	Fair value[1]	Remaining unfunded commitments	Estimated remaining life[2]
Private equity funds	$ 18,505,877	$ 8,958,071	4 – 10	$ 17,394,411	$ 8,858,770	4 – 10
Real estate funds	2,790,305	2,048,930	4 – 10	3,052,042	2,068,329	4 – 10
Other externally managed funds[3]	3,517,860	2,317,366	2 – 8	3,259,851	2,902,708	2 – 8
TOTAL	**$ 24,814,042**	**$ 13,324,367**		**$ 23,706,304**	**$ 13,829,807**	

[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 $16.4 million and $16.5 million as of June 30, 2023 and 2022, respectively, were as follows (in thousands of dollars):

	2023	2022
Federal Sponsored Support	**$ 74,844**	$ 67,130
Publications	**69,487**	61,545
Continuing Education and Executive Programs	**57,330**	63,629
Leases	**32,820**	32,525
Tuition and Fees	**22,579**	19,584
Non-federal Sponsored Support	**17,791**	13,159
Gift Receipts	**7,067**	17,344
Other	**67,353**	64,876
TOTAL RECEIVABLES, NET	**$ 349,271**	**$ 339,792**

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):

	2023			2022		
	Receivable	Allowance	Net	Receivable	Allowance	Net
Student loans:						
Government revolving	$ 22,240	$ 519	**$ 21,721**	$ 26,754	$ 643	**$ 26,111**
Institutional	73,473	1,631	**71,842**	72,489	1,644	**70,845**
Total student loans	95,713	2,150	**93,563**	99,243	2,287	**96,956**
Faculty and staff loans	300,710	179	**300,531**	277,234	179	**277,055**
Other loans	42,527	36,220	**6,307**	49,448	42,647	**6,801**
TOTAL	**$ 438,950**	**$ 38,549**	**$ 400,401**	**$ 425,925**	**$ 45,113**	**$ 380,812**

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 $24.7 million and $29.5 million as of June 30, 2023 and 2022, 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 2023, the University made the requested $4.6 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, 2023 and 2022 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 $351.2 million and $246.6 million for the years ended June 30, 2023 and 2022, respectively, were calculated using rates ranging from 0.7% to 5.0%.

Pledges receivable included in the financial statements as of June 30, 2023 and 2022 are expected to be realized as follows (in thousands of dollars):

	2023	2022
Within one year	**$ 866,208**	$ 816,775
Between one and five years	**1,711,457**	1,637,886
More than five years	**603,713**	541,641
Less: discount and allowance for uncollectible pledges	**(481,744)**	(403,868)
TOTAL PLEDGES RECEIVABLE, NET	**$ 2,699,634**	**$ 2,592,434**

Pledges receivable as of June 30, 2023 and 2022 have been designated for the following purposes (in thousands of dollars):

	2023	2022
General Operating Account balances:		
Gifts for current use	**$ 952,604**	$ 665,632
Non-federal sponsored awards	**199,014**	186,725
Construction and life income	**294,530**	306,891
Total General Operating Account balances	**1,446,148**	**1,159,248**
Endowment	**1,253,486**	1,433,186
TOTAL PLEDGES RECEIVABLE, NET	**$ 2,699,634**	**$ 2,592,434**

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 $122.4 million and $110.0 million as of June 30, 2023 and 2022, 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, 2023 and 2022 are summarized as follows (in thousands of dollars):

	2023	2022	Estimated useful life (in years)
Research facilities	**$ 3,446,121**	$ 3,418,161	*
Classroom and office facilities	**2,596,184**	2,543,625	35
Housing facilities	**2,638,555**	2,525,545	35
Other facilities	**435,738**	425,737	35
Service facilities	**1,148,704**	1,114,162	35
Libraries	**549,503**	541,080	35
Museums and assembly facilities	**1,001,370**	990,568	35
Athletic facilities	**280,432**	263,825	35
Land	**1,024,986**	1,024,986	N/A
Construction in progress	**554,978**	357,434	N/A
Equipment	**1,488,311**	1,468,066	**
SUBTOTAL AT COST	**15,164,882**	**14,673,189**	
Less: accumulated depreciation	**(6,568,899)**	(6,230,349)	
FIXED ASSETS, NET	**$ 8,595,983**	**$ 8,442,840**	

** 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 $276.6 million and $267.4 million as of June 30, 2023 and 2022, 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 $186.2 million and $189.2 million, which are included in "Deferred revenue and other liabilities" in the *Consolidated Balance Sheets* as of June 30, 2023 and 2022, respectively.

Right-of-use assets from finance leases of $45.5 million and $52.3 million are included in "Fixed assets, net" in the *Consolidated Balance Sheets* as of June 30, 2023 and 2022, respectively. Lease liabilities from finance leases of $79.2 million and $88.2 million are included in "Deferred revenue and other liabilities" in the *Consolidated Balance Sheets* as of June 30, 2023 and 2022, respectively.

8. ENDOWMENT AND GENERAL OPERATING ACCOUNT NET ASSETS

The University's net assets consisted of the following as of June 30, 2023 and 2022 (in thousands of dollars):

	2023			2022		
	Without donor restrictions	With donor restrictions	Total	Without donor restrictions	With donor restrictions	Total
NATURE OF SPECIFIC NET ASSETS						
Perpetual endowment funds		$ 9,652,906	**$ 9,652,906**		$ 9,057,578	**$ 9,057,578**
Endowment funds and appreciation subject to distribution policy and appropriation		30,201,162	**30,201,162**		30,925,321	**30,925,321**
Endowment funds without restriction, board designated and subject to distribution policy	$ 9,229,293		**9,229,293**	$ 9,057,969		**9,057,969**
Pledge balances		1,253,486	**1,253,486**		1,433,186	**1,433,186**
Interests in trusts held by others		411,747	**411,747**		403,626	**403,626**
TOTAL ENDOWMENT	**9,229,293**	**41,519,301**	**50,748,594**	**9,057,969**	**41,819,711**	**50,877,680**
Operating	6,640,552		**6,640,552**	6,519,858		**6,519,858**
Unexpended contributions and endowment distributions		3,395,978	**3,395,978**		3,048,468	**3,048,468**
Student loan funds		100,178	**100,178**		100,148	**100,148**
TOTAL GENERAL OPERATING ACCOUNT	**6,640,552**	**3,496,156**	**10,136,708**	**6,519,858**	**3,148,616**	**9,668,474**
Split interest agreements *(Note 9)*		**634,217**	**634,217**		**700,540**	**700,540**
TOTAL NET ASSETS	**$ 15,869,845**	**$ 45,649,674**	**$ 61,519,519**	**$ 15,577,827**	**$ 45,668,867**	**$ 61,246,694**

Endowment

The University's endowment consists of approximately 14,500 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, 2023 and 2022, funds in a deficit position were reported in net assets with donor restrictions and are comprised as follows (in thousands):

	2023	2022
Fair value of underwater endowment funds	**$ 241,967**	$ 369,782
Historic dollar value	**246,804**	378,931
TOTAL DEFICIT OF UNDERWATER ENDOWMENT FUNDS	**$ (4,837)**	**$ (9,149)**

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 2023, the endowment distribution approved by the Corporation (prior to decapitalizations) was equal to 4.7% 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 $2.2 billion and $2.1 billion in fiscal year 2023 and 2022, 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 $43.4 million and $36.7 million in fiscal year 2023 and 2022, respectively. These additional decapitalizations, in combination with the endowment distribution, resulted in an aggregate payout rate of 4.7% and 4.2% in fiscal year 2023 and 2022, 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 4.9% and 3.5% as of June 30, 2023 and 2022, 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 2023 and 2022 were as follows (in thousands of dollars):

	2023	2022
Investment return:		
Investment income	**$ 19,760**	$ 17,152
Realized and change in unrealized appreciation/(depreciation), net	**39,925**	(158,186)
Total investment return	**59,685**	**(141,034)**
Gifts *(Note 14)*[1]	**6,279**	12,290
Payments to annuitants	**(74,072)**	(76,057)
Transfers to endowment	**(50,747)**	(18,603)
Transfers between SIA and the GOA	**(28,398)**	(25,213)
Change in liabilities and other adjustments	**20,930**	175,827
NET CHANGE DURING THE YEAR	**(66,323)**	**(72,790)**
Total split interest agreement net assets, beginning of year	**700,540**	773,330
TOTAL SPLIT INTEREST AGREEMENT NET ASSETS, END OF YEAR	**$ 634,217**	**$ 700,540**

[1] *Shown at net present value. The undiscounted value of these gifts was $12,342 and $26,626 for the years ended June 30, 2023 and 2022, respectively*

Split interest agreement net assets as of June 30, 2023 and 2022 consisted of the following (in thousands of dollars):

	2023	2022
Split interest agreement investments *(Note 3)*		
Charitable remainder trusts	**$ 1,006,615**	$ 1,039,122
Charitable lead trusts	**99,011**	101,899
Charitable gift annuities	**265,662**	305,536
Pooled income funds	**149,151**	140,000
Total split interest agreement investments[1]	**1,520,439**	**1,586,557**
Liabilities due under split interest agreements:		
Amounts due to beneficiaries	**(815,056)**	(819,802)
Amounts due to other institutions	**(71,166)**	(66,215)
Total liabilities due under split interest agreements	**(886,222)**	**(886,017)**
TOTAL SPLIT INTEREST AGREEMENT NET ASSETS, END OF YEAR	**$ 634,217**	**$ 700,540**

[1] *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. For the year ended June 30, 2022, $934,970 of SIA investments are held in the pooled general investment account and $651,587 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, 2023 and 2022 were as follows (in thousands of dollars):

	Fiscal year of issue	Fiscal year of final maturity[1]	Effective rate[2]	Outstanding principal 2023[3]	Outstanding principal 2022[3]
TAX-EXEMPT BONDS AND COMMERCIAL PAPER:					
Variable-rate demand bonds and commercial paper:					
Series R – daily	2000-2006	2032	1.7%	$ 98,300	$ 114,750
Series Y – weekly	2000	2036	2.4%	117,905	117,905
Commercial paper	2023	2024	3.0%	25,000	
Total variable-rate bonds and commercial paper			2.2%	241,205	232,655
Fixed-rate bonds:					
Series 2016A	2017	2041	4.1%	1,434,825	1,461,370
Series 2020A	2020	2031	4.3%	346,680	346,680
Series 2022B	2022	2033	4.3%	207,830	207,830
Total fixed-rate bonds			4.1%	1,989,335	2,015,880
TOTAL TAX-EXEMPT BONDS AND COMMERCIAL PAPER			**3.9%**	**2,230,540**	**2,248,535**
TAXABLE BONDS AND COMMERCIAL PAPER:					
Variable-rate bonds and commercial paper:					
Commercial paper	2023	2024	5.2%	152,296	
Total variable-rate bonds and commercial paper			5.2%	152,296	0
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	3.4%	402,000	402,000
Series 2016B	2017	2057	3.3%	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
Total fixed-rate bonds			4.1%	3,445,000	3,445,000
TOTAL TAXABLE BONDS AND COMMERCIAL PAPER			**4.1%**	**3,597,296**	**3,445,000**
Notes payable	Various	Various	Various	84,730	83,796
Unamortized original issuance premium/discount, net				321,570	360,763
Unamortized bond issuance costs				(19,402)	(20,891)
TOTAL BONDS AND NOTES PAYABLE			**4.0%**	**$ 6,214,734**	**$ 6,117,203**

[1] *The weighted average maturity of the portfolio on June 30, 2023 was 17.1 years.*

[2] *For fixed-rate bonds the effective rate is calculated as: coupon rate x (par value / book value*). For variable rate bonds the effective rate is the one-year average rate. Effective rates are exclusive of the Series Y interest rate exchange agreement, which would increase the overall portfolio rate by 0.01% (4.03% vs 4.04%). *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 $207.4 million and $183.0 million for fiscal 2023 and 2022, 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 maturity of commercial paper, 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
2024	$ 92,253
2025	41,441
2026	100,967
2027	102,795
2028	104,656
Thereafter	5,293,158
TOTAL PRINCIPAL PAYMENTS	**$ 5,735,270**

Bonds and notes payable increased from $6.1 billion to $6.2 billion in fiscal year 2023, primarily due to issuance of $25.0 million in tax-exempt commercial paper and $152.3 million in taxable commercial paper. The proceeds of the tax-exempt commercial paper were used to fund capital spending and the proceeds of the taxable commercial paper were used to fund institutional liquidity. Offsetting the commercial paper issuances were $43.0 million of principal maturities, along with $36.8 million of amortizing bond premium (net of amortizing fees and issuance discounts).

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 February 2023 and the Standard & Poor's was re-affirmed in March 2023.

The University has one unsecured, revolving credit facility with a syndicate of banks totaling $1.5 billion, which expires in December 2025. The facility was renewed in December 2022. There was no outstanding drawn balance on the credit facility at June 30, 2023.

The University has taxable commercial paper available totaling $2 billion. There was a $152.3 million drawn balance on the taxable commercial paper line at June 30, 2023.

The University has tax-exempt commercial paper available totaling $1 billion. There was a $25.0 million drawn balance on the tax-exempt commercial paper line at June 30, 2023.

At June 30, 2023, the University had $216.2 million of variable rate demand bonds outstanding (excluding commercial paper) with either a daily or weekly interest rate reset. 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 2023, 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 ($3.6) million and ($8.6) million as of June 30, 2023 and 2022, respectively, and is recorded in "Other liabilities associated with the investment portfolio" on the University's *Consolidated Balance Sheets*.

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.

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 $220.1 million as of June 30, 2023 and $191.5 million as of June 30, 2022; 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 $793.1 million and $851.2 million as of June 30, 2023 and 2022, respectively. During fiscal years 2023 and 2022, the University made cash contributions to the defined benefit pension plan of $12.7 million and $20.0 million, respectively. The University recorded expenses for its defined contribution plans of $175.7 million for fiscal year 2023 and $155.1 million for fiscal year 2022.

Postretirement health benefits

The University provides postretirement health coverage and life insurance to substantially all of its employees. As of June 30, 2023, the University had internally designated and invested $996.9 million in the GIA to fund the postretirement health benefit accrued liability of $799.0 million. As of June 30, 2022, the University had internally designated and invested $1.0 billion to fund the postretirement health benefit accrued liability of $835.2 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, 2023 and 2022 (in thousands of dollars):

	Pension benefits		Postretirement health benefits	
	2023	2022	2023	2022
Change in benefit obligation:				
Benefit obligation, beginning of year	**$ 944,511**	$ 1,139,945	**$ 835,208**	$ 1,000,395
Service cost	**6,629**	11,208	**22,052**	32,542
Interest cost	**46,401**	34,980	**41,361**	32,643
Plan participants' contributions			**10,377**	9,527
Gross benefits paid	**(87,732)**	(52,631)	**(44,496)**	(40,664)
Actuarial gain	**(75,442)**	(188,991)	**(65,592)**	(199,211)
Plan amendments			**54**	(24)
BENEFIT OBLIGATION, END OF YEAR[1]	**834,367**	**944,511**	**798,964**	**835,208**
Change in plan assets:				
Fair value of plan assets, beginning of year	**851,205**	1,061,693		
Actual return on plan assets	**16,939**	(177,857)		
Employer contributions	**12,721**	20,000	**34,119**	31,137
Plan participants' contributions			**10,377**	9,527
Gross benefits paid	**(87,732)**	(52,631)	**(44,496)**	(40,664)
FAIR VALUE OF PLAN ASSETS, END OF YEAR	**793,133**	**851,205**	**0**	**0**
UNFUNDED STATUS[2]	**$ (41,234)**	**$ (93,306)**	**$ (798,964)**	**$ (835,208)**

[1] *Measurement of the University's pension obligation including assumed salary increases (required by GAAP).*
[2] *These amounts totaling $840,198 as of June 30, 2023 and $928,514 as of June 30, 2022 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 $760.6 million at June 30, 2023 and $846.8 million at June 30, 2022. 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, 2023.

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, 2023 and 2022 (in thousands of dollars):

	Pension benefits		Postretirement health benefits	
	2023	2022	2023	2022
Components of net periodic benefit cost:				
Operating				
Service cost	**$ 6,629**	$ 11,208	**$ 22,052**	$ 32,542
Total operating activity	**6,629**	11,208	**22,052**	32,542
Non-operating				
Interest cost	**46,401**	34,980	**41,361**	32,643
Expected return on plan assets	**(42,209)**	(40,026)		
Amortization of:				
Actuarial loss/(gain)		7,242	**(19,055)**	(4,650)
Prior service cost/(credit)	**287**	287	**(7,931)**	(7,929)
Total non-operating activity[1]	**4,479**	2,483	**14,375**	20,064
Total net periodic benefit cost	**11,108**	**13,691**	**36,427**	**52,606**
Other amounts recognized in non-operating activity in unrestricted net assets:				
Current year net actuarial (gain)/loss	**(50,173)**	28,893	**(65,592)**	(199,211)
Plan amendments			**54**	(24)
Amortization of:				
Prior service (cost)/credit	**(287)**	(287)	**7,931**	7,929
Actuarial (loss)/gain		(7,242)	**19,055**	4,650
Total other amounts recognized in non-operating activity[1]	**(50,460)**	**21,364**	**(38,552)**	**(186,656)**
TOTAL RECOGNIZED IN THE *CONSOLIDATED STATEMENTS OF CHANGES IN NET ASSETS WITH GENERAL OPERATING ACCOUNT DETAIL*	**$ (39,352)**	**$ 35,055**	**$ (2,125)**	**$ (134,050)**

[1] *These amounts totaling ($70,158) in fiscal year 2023 and ($142,745) in fiscal year 2022 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, 2023 and 2022 (in thousands of dollars):

	Pension benefits		Postretirement health benefits	
	2023	2022	2023	2022
Net actuarial loss/(gain)	**$ 12,075**	$ 62,248	**$ (409,029)**	$ (362,492)
Prior service cost/(credit)	**33**	320	**(25,779)**	(33,765)
CUMULATIVE AMOUNTS RECOGNIZED IN UNRESTRICTED NET ASSETS	**$ 12,108**	**$ 62,568**	**$ (434,808)**	**$ (396,257)**

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 2023 and 2022:

	Pension benefits		Postretirement health benefits	
	2023	2022	2023	2022
Weighted-average assumptions used to determine benefit obligation as of June 30:				
Discount rate	**5.70%**	5.05%	**5.60%**	4.90%
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:				
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
Current health care cost trend rate:				
Pre-65	N/A	N/A	**7.25%**	7.00%
Post-65	N/A	N/A	**6.75%**	7.00%
EGWP	N/A	N/A	**16.00%**	7.00%
Ultimate health care cost trend rate:				
Pre-65 and Post-65	N/A	N/A	**5.00%**	5.00%
EGWP	N/A	N/A	**4.00%**	5.00%
Year of ultimate	N/A	N/A	**2029**	2029
Weighted-average assumptions used to determine net periodic benefit (income)/cost:				
Discount rate	**5.05%**	3.15%	**4.90%**	3.20%
Expected long-term rate of return on plan assets	**4.75%**	4.50%	N/A	N/A
Compensation increase trend:				
Average rate	N/A	3.50%	N/A	3.50%
Initial rate	**5.00%**	0.00%	**5.00%**	N/A
Ultimate rate	**3.50%**	N/A	**3.50%**	N/A
Year of ultimate	**2025**	N/A	**2025**	N/A
Pension increases for in-payment benefits increase trend:				
Average rate	N/A	0.25%	N/A	N/A
Initial rate	**1.50%**	N/A	N/A	N/A
Ultimate rate	**0.25%**	N/A	N/A	N/A
Year of ultimate	**2025**	N/A	N/A	N/A
Health care cost trend rate:				
Initial rate	N/A	N/A	**7.00%**	6.50%
Ultimate rate	N/A	N/A	**5.00%**	4.75%
Year of ultimate	N/A	N/A	**2029**	2025

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, 2023 and 2022, along with target allocations for June 30, 2024, is as follows:

	2024 Target	June 30, 2023	June 30, 2022
Asset allocation by category for pension plan:			
Fixed income securities	75-85%	80.4%	79.7%
Equity securities	15-25	19.5	19.6
Cash	1-5	0.1	0.7
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 2023, 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, 2023 and 2022 (in thousands of dollars):

	2023					2022
	Level 1	Level 2	Level 3	NAV as practical expedient	Total	Total
PLAN ASSETS:						
Cash and short-term investments	$ 13,408				**$ 13,408**	$ 17,942
Domestic equity	64,305				**64,305**	87,025
Foreign equity	30,339			$ 41,876	**72,215**	62,956
Domestic fixed income				589,061	**589,061**	633,453
Emerging market equity and debt	14,776				**14,776**	12,880
Hedge funds				137	**137**	265
Private equity				1,250	**1,250**	1,368
High yield				37,974	**37,974**	35,313
PLAN ASSETS SUBJECT TO FAIR VALUE LEVELING	**$ 122,828**	**$ 0**	**$ 0**	**$ 670,298**	**$ 793,126**	**$ 851,202**
Other assets not subject to fair value					**7**	3
TOTAL PLAN ASSETS					**$ 793,133**	**$ 851,205**

Expected future benefit payments

Employer contributions of $13.3 million are expected for fiscal year 2024 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):

	Expected benefit payments	
Fiscal year	Pension	Postretirement health
2024	$ 66,508	$ 28,005
2025	66,150	29,851
2026	67,254	32,217
2027	68,262	34,674
2028	69,101	37,187
Thereafter	349,471	227,876

12. STUDENT FINANCIAL AID

Financial aid granted to students in fiscal 2023 and 2022 is summarized as follows (in thousands of dollars):

	2023	2022
Scholarships and other student awards:		
Scholarships applied to student income[1]	**$ 530,743**	$ 505,904
Scholarships and other student awards paid directly to students	**181,295**	171,312
Total scholarships and other student awards	**712,038**	**677,216**
Student employment	**101,699**	93,581
Student loans	**13,722**	14,124
Agency financial aid[2]	**23,889**	21,505
TOTAL STUDENT FINANCIAL AID	**$ 851,348**	**$ 806,426**

[1] *Includes $235,832 and $224,863 in fiscal 2023 and 2022, 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 $676.1 million and $642.1 million in fiscal year 2023 and 2022, 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, the Medical School (including the School of Dental Medicine), and the T.H. Chan School of Public Health 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, 2023 are summarized as follows (in thousands of dollars):

	2023		
	Gifts received	Donor redesignations/ other changes	Total
Current use	$ 482,107	$ 3,775	**$ 485,882**
Non-federal sponsored grants	232,226	(2,782)	**229,444**
Endowment funds	566,660	(6,053)	**560,607**
Split interest agreements[1]	6,279		**6,279**
Loan funds and facilities	96,210	(35)	**96,175**
TOTAL GIFTS	**$ 1,383,482**	**$ (5,095)**	**$ 1,378,387**

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

Gifts received for the year ended June 30, 2022 are summarized as follows (in thousands of dollars):

	2022		
	Gifts received	Donor redesignations/ other changes	Total
Current use	$ 514,361	$ (9,625)	**$ 504,736**
Non-federal sponsored grants	235,481	(3,361)	**232,120**
Endowment funds	579,987	3,663	**583,650**
Split interest agreements[1]	12,290		**12,290**
Loan funds and facilities	81,943	5,931	**87,874**
TOTAL GIFTS	**$ 1,424,062**	**$ (3,392)**	**$ 1,420,670**

[1] *Shown at net present value. The undiscounted value of these gifts was $26,626 for the year ended June 30, 2022.*

15. OTHER REVENUE

The major components of other revenue for the years ended June 30, 2023 and 2022 were as follows (in thousands of dollars):

	2023	2022
Publications and royalties from copyrights	**$ 281,024**	$ 277,104
Rental and parking[1]	**141,449**	116,070
Services income	**136,811**	135,240
Health and clinic fees	**72,580**	70,214
Royalties from the commercialization of intellectual property[2]	**58,989**	152,078
Sales income	**32,376**	31,423
Interest income	**15,317**	8,373
Other student income	**5,025**	4,326
Other	**49,345**	43,495
TOTAL OTHER REVENUE	**$ 792,916**	**$ 838,323**

[1] *The University is the lessor of space and facilities under operating leases, the income from which is included in rental and parking.*
[2] *Excludes distribution to external parties.*

16. OTHER EXPENSES

The major components of other expenses for the years ended June 30, 2023 and 2022 were as follows (in thousands of dollars):

	2023	2022
Subcontract expenses under sponsored projects	**$ 179,941**	$ 179,212
Travel	**93,449**	43,737
Advertising	**65,353**	53,007
Publishing	**50,202**	45,097
Taxes and Fees	**42,196**	38,706
Insurance	**23,207**	25,669
Postage	**14,911**	14,907
Telephone	**10,971**	11,153
Fixed asset impairments	**7,394**	21,385
Other	**90,756**	61,702
TOTAL OTHER EXPENSES	**$ 578,380**	**$ 494,575**

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, 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.*

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

	2022				
	Instruction and academic support	Research[1]	Student services and support	Institutional support and auxiliary	Total
Salaries and wages	$ 1,149,598	$ 310,492	$ 144,458	$ 601,794	**$ 2,206,342**
Employee benefits	286,322	74,786	49,844	172,979	**583,931**
Services purchased	374,555	95,246	60,739	202,169	**732,709**
Depreciation	47,664	155,568	16,520	209,108	**428,860**
Space and occupancy	106,798	62,355	31,766	152,867	**353,786**
Supplies and equipment	90,926	55,364	41,906	82,888	**271,084**
Interest	18,549	43,775	13,071	112,139	**187,534**
Scholarships and other student awards			171,312		**171,312**
Other expense and overhead allocations	1,866	424,292	28,407	40,010	**494,575**
TOTAL EXPENSES	**$ 2,076,278**	**$ 1,221,878**	**$ 558,023**	**$ 1,573,954**	**$ 5,430,133**

[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 $114.0 million and $101.2 million in fiscal year 2023 and 2022, 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
2024	$ 77,369	$ 11,524
2025	80,070	11,913
2026	75,344	21,995
2027	70,808	11,957
2028	69,720	13,018
Thereafter	573,984	98,505
TOTAL LEASE PAYMENTS	947,295	168,912
Less: Imputed Interest	(193,100)	(89,689)
PRESENT VALUE OF LEASE LIABILITIES	**$ 754,195**	**$ 79,223**

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

	June 30, 2023
Weighted average remaining lease term	
Operating leases	15.1 YEARS
Finance leases	14.3 YEARS
Weighted average discount rate	
Operating leases	2.9%
Finance leases	2.4%

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, 2023 totaled approximately $478.6 million.

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 18, 2023, 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, 2023

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					
Advancing Economic Diversification in Ethiopia	98.001	72066319CA00005		$ 147,718	$ -
COVID-19 Economic Response and Long-Term Growth in Jordan	98.001	72027820CA00002		260,951	-
Raskin Welfare Reform: Transition to Electronic Distribution	98.001	7200AA19FA00002		95,142	66,094
Total for Assistance Listing Number 98.001				**503,811**	**66,094**
Building Local State Capacity: Evidence from Technology Investments in Ghana	98.RD	7200AA22FA00039		40,802	-
Kartu Prakerja: Evaluating Indonesia's Jobs Training and Cash Transfer Program	98.RD	7200AA21FA00005		341,804	10,358
Total for Assistance Listing Number 98.RD				**382,606**	**10,358**
Total for Agency for International Development Direct Award Research and Development Cluster				**886,417**	**76,452**
Delta Regional Authority					
Authentic Leadership: Delta Leadership Institute	90.RD	No Award Number		43,235	-
Total for Assistance Listing Number 90.RD				**43,235**	**-**
Total for Delta Regional Authority Direct Award Research and Development Cluster				**43,235**	**-**
Department of Agriculture					
Adaptive forest management options for white ash influenced by the invasive emerald ash borer	10.310	2021-68008-34102		48,936	38,808
Toward a comprehensive understanding of the economic and ecological impacts of land protection	10.310	2021-67023-34491		184,407	49,781
Total for Assistance Listing Number 10.310				**233,343**	**88,589**
Explore the Range of Climatic Sensitivity of Tree Species in the Northeastern US Under Climate Change	10.707	22-JV-11242306-078		7,978	-
The Next Phase of the Undergraduate Forestry Data Sciences Program	10.707	22-JV-11221638-199		40,251	-
Total for Assistance Listing Number 10.707				**48,229**	**-**
Total for Department of Agriculture Direct Award Research and Development Cluster				**281,572**	**88,589**
Department of Commerce					
CO2-Air Quality Urban Synthesis and Analysis	11.431	NA20OAR4310303		53,550	-
Data assimilation to leverage diverse datasets for improved CO2 and CH4 flux estimation and future observing system design	11.431	NA19OAR4310173		121,901	-
Long-term trends of tropospheric ozone constrained by global observation networks and GEOS-Chem	11.431	NA19OAR4310176		5,998	-
Monitoring smoke hazards across the western United States: Tools for fire scientists, policymakers, and stakeholders	11.431	NA22OAR4310140		91,278	-
Understanding methane changes in cities affected by COVID-19 shutdowns	11.431	NA21OAR4310237		25,553	-
Total for Assistance Listing Number 11.431				**298,280**	**-**
Total for Department of Commerce Direct Award Research and Development Cluster				**298,280**	**-**
Department of Defense					
Data Science-Driven Data Science Education	12.006	HQ00342110012		436,039	16,394
Total for Assistance Listing Number 12.006				**436,039**	**16,394**
Unseen Legacies of the Vietnam War: Finding, Archiving and Sharing the Missing Data and Historical Ephemera of Vietnamese War Dead	12.015	HQ00342120011		1,182,594	17,983
Total for Assistance Listing Number 12.015				**1,182,594**	**17,983**
A 3D knitting machine to develop smart robotic garments for warfighter protection, communication and rehabilitation	12.300	N00014-19-1-2220		141,406	-
Adaptive Choice Set Construction for Complex Decision Making	12.300	N00014-19-1-2025		(1,375)	-
Advancing Novel Rebreather Chemistry for Technology Transitioning	12.300	N00014-22-1-2758		241,673	-
An end-to-end architecture for efficient choice: From perception to goals	12.300	N00014-22-1-2205		296,553	-
Aqueous Porous Liquids for Undersea Medicine	12.300	N00014-22-1-2739		200,357	-
Brain inspired neural computation of structured knowledge	12.300	N00014-23-1-2051		190,430	-
Carbon Dioxide Reduction Catalysis to Eliminate the Need for Rebreathers in Diving Operations	12.300	N00014-22-1-2470		367,594	-
Chemistry of Seawater Electrolysis and Byproduct Management for Underwater Breathing	12.300	N00014-19-1-2385		(390)	-
Decision Making in Heterogenous Multi-Agent Systems with Misinformation and Sparse Communication	12.300	N00014-21-1-2714		243,312	-
Designing Aqueous Porous Liquids for in vivo Gas Absorption	12.300	N00014-23-1-2550		1,533	-
DNA-based technologies for reading and writing large-scale molecular patterns with nanoscale-precision	12.300	N00014-18-1-2549		92,730	-
Embedded Deep Learning and Advanced Computation	12.300	FA8750-18-1-0112		67,483	-
Ethical Decision Making Through Social Choice and Machine Learning	12.300	N00014-20-1-2488		151,416	-
Exploration of Kac's walk and analysis of bayesian distributed computing	12.300	N00014-21-1-2664		129,258	-
Fluidic Powered Soft Fabric-Based Actuators for Wearable Robotic Applications	12.300	N00014-17-1-2121		128,574	-
High-Tc Superconductivity at Oxide-Chalcogenide Interfaces	12.300	N00014-18-1-2691		(1,769)	-
Many-Body Quantum Dynamics with Microscope Control- A New Research Frontier	12.300	N00014-18-1-2863		607,372	-
Materials Design for Thermal Radiation Blocking Thermal Barrier Coatings	12.300	N000142112478		191,811	-
Memory, Attention, and Interaction: Learning Language Models with a Long Memory	12.300	N00014-22-1-2377		128,373	-
Microporous Liquids for Aqueous-Phase Gas Absorption	12.300	N00014-22-1-2594		200,000	66,375
Next-Generation Materials for Oxygen Generation, Transport, and Storage in the Undersea Environment	12.300	N00014-20-1-2418		1,376,619	594,064
Porous Metal-Organic Liquids as a New Platform for Investigation Gas-Liquid Interactions	12.300	N00014-19-1-2148		(2,457)	-

Harvard University
Schedule of Expenditures of Federal Awards
Year Ended June 30, 2023

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
Programmable Assembly of Functional Human Tissues	12.300	N00014-21-1-2958		718,854	-
Quantum Engineered van der Waals Heterostructures for Topological Electronic Structures toward Novel Device Applications	12.300	N00014-18-1-2877		415,804	-
Quantum Information Processing With Phonons	12.300	N00014-20-1-2425		260,436	-
Real-time Distributed Coordination of Multi-agent Systems under Limited Communication	12.300	N00014-19-1-2217		42,001	-
Soft Robotic Instructional Kits for Education and STEM Outreach	12.300	N00014-19-1-2386		25,065	-
Solid-State Nuclear Magnetic Resonance Spectrometer for Research on Advanced Catalytic, Porous, and Magnetic Materials	12.300	N00014-21-1-2359		483,364	-
Synthetic Bioelectrical Materials for Sensing, Pattern Formation, and Computation	12.300	N00014-18-1-2859		565,574	-
Towards Living Materials with Synthetic Building Blocks	12.300	N000141713029		485,413	-
Total for Assistance Listing Number 12.300				**7,747,014**	**660,439**
Fundamental Studies of Stored Energy for Photochemical Destruction of CWA Simulants	12.351	HDTRA 12110016		473,907	99,025
Total for Assistance Listing Number 12.351				**473,907**	**99,025**
A prospective study of serum levels of polyunsaturated fatty acids and effects on multiple sclerosis disease activity and progression	12.420	W81XWH1910155		150,258	-
An Injectable Synthetic Agent to Stop Internal Bleeding	12.420	W81XWH2210113		586,525	-
Chemigenomic Drug Discovery for Tuberculosis	12.420	W81XWH-17-1-0692		316,916	316,916
Genes, environment, and Prodromal features of Parkinson disease	12.420	W81XWH-20-1-0303		276,575	62,577
GUT SYMBIONT LIPID A FAMILY: STRUCTURES AND IMMUNOMODULATION IN IBD	12.420	HT94252310226		178,944	-
Gut Symbiotic Lipid A Family: Structures and Immunomodulation in IBD	12.420	W81XWH1910625		(6,694)	-
Improving the durability of immunological memory during anti-PD-1 immunotherapy	12.420	W81XWH2211046		115,212	-
Inflammatory and Immune Mechanisms Relating PTSD and Depression to Ovarian Cancer Risk.	12.420	W81XWH2110326		168,509	76,200
Metabolomic Predictors of MS Outcomes	12.420	W81XWH1810341		191,249	1,159
Piezo1-mediated mechanotransduction as key regulator of bone health in adult mice.	12.420	W81XWH2110449		510,268	-
Targeted therapeutic opportunities for ovarian clear cell, small cell, and endometrioid carcinomas	12.420	HT94252310263		8,294	-
Theranostic Cellular Backpacks for Precision Imaging and Treatment of Traumatic Brain Injury Sites	12.420	W81XWH1920011		173,010	173,010
Understanding the role of gene-environment interactions in the degeneration of human dopaminergic neurons in Parkinson's Disease	12.420	W81XWH1910696		50,059	-
Total for Assistance Listing Number 12.420				**2,719,125**	**629,862**
Continuation Study: A Systems Approach to Understanding Post-Traumatic Stress Disorder	12.431	W911NF-17-2-0086		461,943	361,086
Control of Many-Body States Using Strong Coherent Light-Matter Coupling in Terahertz Cavities	12.431	W911NF2110184		285,383	-
CRISPR-based Diagnostics for Food and Waterborne Pathogen Detection	12.431	W911QY2110006		44,458	-
Hydrodynamic Electron Transport in 2-Dimensional Materials for Nanoelectronics	12.431	W911NF-17-1-0574		55,307	27,491
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		218,964	-
Imaging and Control of Biological Transduction using NV-DIamond	12.431	W911NF-15-1-0548		297,954	180,039
Multi-Functional devices in precisely engineered van der Waals homojunctions	12.431	W911NF2120147		1,408,127	734,498
Next Generation NV Center Based Quantum Sensing	12.431	W911NF-22-1-0248		134,120	-
Programmable Optical Lattice for Fermi-Hubbard Quantum Simulations	12.431	W911NF2010104		485	-
Programming multistable origami and kirigami structures via topological design	12.431	W911NF2210219		576,983	33,648
Quantum Optimization with Programmable Simulators based on Atom Arrays	12.431	W911NF2010021		1,551,184	1,272,093
Quon Pictorial Language, Analysis, Quantum Information	12.431	W911NF1910302		233,199	-
Topological Superconductivity using Layered Materials	12.431	W911NF1810316		137,424	65,000
Toward Mathematical Intelligence and Certifiable Automated Reasoning: Theoretical Understanding and Experimental Realization	12.431	W911NF2010082		1,259,311	373,002
Understanding and Engineering Transient Mechanical Responses in Nanoparticle-Reinforced Heterogenous Particulate Systems	12.431	W911NF2120146		887,761	669,428
Widely-tunable, compact sub-millimeter source operating at room-temperature from 100 GHz to 1 THz	12.431	W911NF1920168		68,893	-
Total for Assistance Listing Number 12.431				**7,621,496**	**3,716,285**
Cellular foundations of memory	12.800	FA9550-22-1-0345		97,652	-
Cooperative Radiation Phenomena for Quantum Information Processing and Metrology	12.800	FA9550-19-1-0233		131,046	-
Correlated Topological States in Moiré Superlattices of Intrinsic Magnetic Topological Insulator	12.800	FA9550-23-1-0040		92,726	-
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		125,221	-
DURIP: Equipment for a molecular quantum simulator	12.800	FA9550-22-1-0067		173,344	-
DURIP: Equipment for Probing Ultracold Reaction Intermediates	12.800	FA9550-23-1-0122		16,176	-
Enhanced Superconductivity through Picoscale Engineering	12.800	FA9550-21-1-0043		(5,107)	-
Entangling Ultracold Atoms	12.800	FA9550-19-1-0089		348,959	-
High-index dielectric metasurfaces for enhanced magneto-optics	12.800	FA9550-19-1-0352		41,360	-
Laser Cooling and Trapping of Asymmetric Top Molecules for Quantum Science	12.800	FA9550-22-1-0288		155,991	-
Laser Cooling of Complex Molecules for Quantum Science	12.800	FA9550-19-1-0068		(255)	-
Laser Cooling of Polyatomic Molecules	12.800	FA9550-21-1-0136		(16,870)	-
Modulating Cellular Performance with Nanoscale Biocircuits	12.800	FA9550-19-1-0246		315,223	-
Nanostructured Optics for High-Power Laser Applications	12.800	FA9550-19-1-0376		72,273	-
Network Architectures for Combating Noise and Malicious Activity	12.800	FA9550-22-1-0223		130,812	-

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New Approaches to Quantum Control with Individual Molecule Sensitivity	12.800	FA9550-20-1-0323		1,305,315	1,181,470
Optical singularity engineering for precision sensing	12.800	FA9550-22-1-0243		182,407	-
Optically-controlled, genetically-targeted chemical assembly of electrically functional materials for neuromodulation	12.800	FA9550-22-1-0228		218,781	-
The Neural Architecture of Reinforcement Learning in Partially Observable Environments	12.800	FA9550-20-1-0413		185,875	59,305
Towards a New Quantum Platform Based on Ultracold Molecules	12.800	FA2386-21-1-4089		154,006	-
Tunneling Phenomena in Interface Superconductors	12.800	FA9550-21-1-0429		1,359,575	782,103
Waveguide-coupled Interlayer Exciton Condensation LED in 2D Heterostructures for Quantum Optics	12.800	FA2386-21-1-4086		108,197	-
Wigner Crystals in Atomically Thin Heterostructures	12.800	FA9550-21-1-0216		244,763	-
Total for Assistance Listing Number 12.800				**5,437,470**	**2,022,878**
Automated End-To-End Design And Digital Fabrication Of Multi-Task Soft Robots Via Deep Representations	12.910	HR00112110007		152,470	-
Collaborative scientific discovery with semantically linked machine-built models	12.910	W911NF2010255		280,431	-
Creation of a genetically manipulable and fast-growing hydrogen of 1C-utilizing autotroph	12.910	N660012324014		607,412	-
High-efficiency aberration corrected large metalenses	12.910	HR00111810001		(31)	-
Identifying pathogenic bacteria by phenotyping	12.910	W911NF-19-2-0018		1,599,074	479,371
Information Storage and Processing Using Time-Ordered Strings of Molbytes, and Molecular Processes	12.910	W911NF-18-2-0030		141,795	103,390
Mechanism Design for Resource Coordination in Dynamic, Multi-Actor Worlds	12.910	HR00111920029		(4,347)	-
MIRA: Modeling with an Intelligent Reasoning Assistant	12.910	HR00112220036		395,785	-
RNA therapeutics assessment in Human Organ Chips	12.910	HR0011-22-2-0017		1,166,677	-
STOP PAIN: Safe Therapeutic Options for Pain and Inflammation	12.910	HR0011-19-2-0022		4,329,175	2,179,068
Time-Tolerant Biostasis Therapeutics	12.910	W911NF1920027		3,850,339	1,050,709
Total for Assistance Listing Number 12.910				**12,518,780**	**3,812,538**
Artificial Intelligence/ Machine Learning (AI/ML) Design PTSD Objective Indicators	12.RD	W81XWH22C0128		294,988	186,692
Biologically Inspired Soft Smart Exosuit for Injury Prevention and Performance Augmentation	12.RD	W911NF-14-C-0051		(17,686)	-
Evaluating the Importance of Precursor Transport and Transformation for Groundwater Contamination with Poly- and Perfluoroalkyl Substances	12.RD	W912HQ19C0002		3	-
General and Flag Officer Homeland Security Executive Seminar	12.RD	W912SV20D0001		614,405	-
Personalized computational modeling to support effective use of back support exosuits to prevent back injuries	12.RD	W81XWH2010609		215,575	-
Transmitters, Receivers, Amplifiers for Microwave Photonics On Lithium Niobate (TRAMPOLiN)	12.RD	HR001120C0137		1,304,914	897,332
Total for Assistance Listing Number 12.RD				**2,412,199**	**1,084,024**
Total for Department of Defense Direct Award Research and Development Cluster				**40,548,624**	**12,059,428**
Department of Education					
Fulbright-Hays Doctoral Dissertation Research Abroad	84.022	P022A200047		193,299	-
Fulbright-Hays Doctoral Dissertation Research Abroad	84.022	P022A210025		37,122	-
Fulbright-Hays Doctoral Dissertation Research Abroad	84.022	P022A220033		23,845	-
Total for Assistance Listing Number 84.022				**254,266**	**-**
Core Academic Language Skills Instrument: Refining the assessment to measure and monitor English Learners' progress	84.305	R305A190034 - 22		322,460	149,473
Developing and Testing Training Modes for Improving Teachers' Race-Related Competencies to Promote Student Learners' Academic Adjustment	84.305	R305A200278 - 23		288,833	-
National Center on Rural Education Research Networks	84.305	R305C190004 - 23		1,994,139	70,765
Partnering in Education Research (PIER) An Interdisciplinary Pre-doctoral Training Program	84.305	R305B200012 - 22		624,099	-
Partnering in Education Research (PIER): A Predoctoral Interdisciplinary Training Program	84.305	R305B150010-19		45,859	-
Practical tools for large-scale evaluation of text data in randomized trials in education	84.305	R305D220032 - 23		128,935	32,303
Total for Assistance Listing Number 84.305				**3,404,325**	**252,541**
COVID-19: Leveraging Technology and Engaging Students: Evaluating Covid-19 Recovery Efforts in the Los Angeles Community College District	84.305X	R305X220018 - 23		200,293	-
Total for Assistance Listing Number 84.305X				**200,293**	**-**
Kernels of Practice for Social Emotional Learning in Afterschool Settings	84.411	S411C220046		133,393	-
Total for Assistance Listing Number 84.411				**133,393**	**-**
Total for Department of Education Direct Award Research and Development Cluster				**3,992,277**	**252,541**
Department of Energy					
ANALYSES OF CUMULUS MIXING USING ASR AIRCRAFT OBSERVATIONS AND LES SIMULATIONS	81.049	DE-SC0022887		137,024	-
Carbonate Management to Enable Energy- and Carbon-Efficient CO2 Electrolysis	81.049	DE-SC0021639		162,659	-
CATALYST DESIGN FOR SMALL MOLECULE ACTIVIATION OF ENERGY CONSEQUENCE	81.049	DE-SC0019144		10,000	-
Converting Metal–Organic Liquids into Microporous Glasses via Non-Equilibrium Syntheses	81.049	DE-SC0021145		150,402	-
Data Structure Alchemy	81.049	DE-SC0020200		260,984	-
Design and Assembly of Atomically-Precise Quantum Materials and Devices	81.049	DE-SC0020128		217,455	51,290
Discovering Dark Matter Clumps and Primordial Particles with Galaxies	81.049	DE-SC0020223		230,832	-
Emergent Quasiparticles in Graphene Heterostructure	81.049	DE-SC0012260		224,488	-
Epitaxial Stabilization of Novel Superconductors for Energy Generation, Storage and Distribution	81.049	DE-SC0021925		109,079	-

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INTEGRATED MESOSCALE ARCHITECTURES FOR SUSTAINABLE CATALYSIS (IMASC)	81.049	DE-SC0012573		1,028,434	635,642
Machine learning for accelerated understanding of dynamic catalysis	81.049	DE-SC0022199		743,397	351,552
Microbial Ecology, Proteogenomics and Computational Optima	81.049	DE-FG02-02ER63445		3,096,515	-
Mixed-Metal Oxide Energy Conversion Catalysts for Integration with Photoabsorbers	81.049	DE-SC0017619		412,646	-
Opto-chemo-mechanical energy transduction in biomimetic ensembles of reconfigurable microparticles of liquid crystal elastomers	81.049	DE-SC0005247		569,427	121,034
Particle Physics and Cosmology Research	81.049	DE-SC0007881		1,356,268	-
Programmable quantum simulators for lattice gauge theories and gauge-gravity correspondence	81.049	DE-SC0021013		391,370	-
QPress: Quantum Press for Next-Generation Quantum Information Platforms	81.049	DE-SC0019300		48,228	48,228
Quantum Field Theory and Theoretical Particle Physics	81.049	DE-SC0013607		545,089	-
Quantum Simulation of Correlated Quantum Matter	81.049	DE-SC0019030		217,565	-
Research in High Energy Physics	81.049	DE-SC0007881		(1,435)	-
State-to-State Molecular Reactions in the Ultracold Regime	81.049	DE-SC0019020		177,435	-
Theoretical Research in High Energy Physics	81.049	DE-SC0007870		477,983	-
Transport and Imaging of Novel Phases of Moiré Quantum Matter	81.049	DE-SC0001819		54,256	53,210
Ultrafast control of spin fluctuations in light-driven quantum materials	81.049	DE-SC0022883		214,721	-
Understanding Flow Cell Porous Electrodes as an Active Materials for Electrochemical Transformations	81.049	DE-SC0020170		537,504	14,547
Total for Assistance Listing Number 81.049				**11,372,326**	**1,275,503**
Experimental Demonstration of Alkalinity Concentration Swing for Direct Air Capture of Carbon Dioxide	81.089	DE-FE0031964		285,663	-
Total for Assistance Listing Number 81.089				**285,663**	**-**
From Z to Planets: Phase III	81.112	DE-NA0003904		20,008	20,008
From Z to Planets: Phase IV	81.112	DE-NA0004084		206,220	37,789
Metallic Hydrogen: Reflectance, Metastability, and Superconductivity	81.112	DE-NA0004087		148,722	-
The Properties of Metallic Hydrogen	81.112	DE-NA0003917		(769)	-
Total for Assistance Listing Number 81.112				**374,181**	**57,797**
CIRCE: Circularizing Industries by Raising Carbon Efficiency	81.135	DE-AR0001509		36,817	-
Developing advanced NMR techniques to predict and monitor CO_2 storage and mineralization for enhanced mining exploration and operation	81.135	DE-AR0001705		48,146	-
GaN NMR Spectrometer Integrated Circuits Towards Broadly Distributed On-line Monitoring and Management of Subsurface Oil/Gas Reservoirs and Downstream	81.135	DE-AR0001063		686,333	-
Total for Assistance Listing Number 81.135				**771,296**	**-**
ATLAS Phase II Upgrade: ITk Strip Stave Assembly	81.RD	340452		288	-
WBS 1.2.4.1 Trigger Processor Integration and Commissioning	81.RD	358424		(33,819)	-
WBS 3.5 Trigger Processor Maintenance and Operation	81.RD	412331		248,918	-
Wire Tension for DUNE Anode Plane Assemblies	81.RD	665148		3,655	-
Total for Assistance Listing Number 81.RD				**219,042**	**-**
Total for Department of Energy Direct Award Research and Development Cluster				**13,022,508**	**1,333,300**
Department of Housing & Urban Development					
First-Time Homeownership in Fringe Cities: A Case Study of Brockton MA	14.506	RP-19-MA-004		1,808	-
Total for Assistance Listing Number 14.506				**1,808**	**-**
Enhancing equity in smoke-free housing: Evidence-based strategies to support implementation in Permanent Supportive Housing communities	14.906	MAHHU0069-22		123,792	-
Optimizing the Impact of Smoke-Free Residential Policies using an Evidence-Informed Implementation Approach	14.906	MAHHU0041-18		113,606	-
Targeted Interventions to Reduce Environmental Exposures	14.906	MAHHU0068-21		332,965	62,730
Total for Assistance Listing Number 14.906				**570,363**	**62,730**
Total for Department of Housing & Urban Development Direct Award Research and Development Cluster				**572,171**	**62,730**
Department of Justice					
Applying a Development Evaluation Approach to Address Community Safety and Health Challenges of Reintegration Programs in the USA	16.560	2019-ZA-CX-0001		234,955	-
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		239,353	41,174
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		321,910	-
The Final Stage Reentry Project: An RCT of Expungement and Its Effect on Recidivism, Housing, and Employment	16.560	2019-RY-BX-0001		232,767	47,458
Total for Assistance Listing Number 16.560				**1,028,985**	**88,632**
Total for Department of Justice Direct Award Research and Development Cluster				**1,028,985**	**88,632**
Department of the Interior					
Comprehensive 3D assessment of the geometry, segmentation, and slip on the Newport-Inglewood fault, Los Angeles, California, and its implications for regional earthquake hazards	15.807	G22AP00261-00		72,226	-
Total for Assistance Listing Number 15.807				**72,226**	**-**
Total for Department of the Interior Direct Award Research and Development Cluster				**72,226**	**-**

The accompanying notes are an integral part of this schedule.

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Department of Transportation					
Dwight David Eisenhower Transportation Fellowship Program (DDETFP) Graduate Fellowship	20.215	693JJ32345082		5,000	-
Total for Assistance Listing Number 20.215				**5,000**	**-**
Total for Department of Transportation Direct Award Research and Development Cluster				**5,000**	**-**
Department of Veterans Affairs					
MAVERIC Project	64.RD	36C24E18D0048 36C24E22N0164		979,343	53,943
Total for Assistance Listing Number 64.RD				**979,343**	**53,943**
Total for Department of Veterans Affairs Direct Award Research and Development Cluster				**979,343**	**53,943**
Department of Health and Human Services					
Postdoctoral Training in General, Pediatric and Public Health Dentistry and Dental Hygiene	93.059	5-D88HP37552 04 00		360,704	59,211
Predoctoral Oral Health Education and Training for an Aging America	93.059	6-D85HP45705 02 01		112,507	-
Total for Assistance Listing Number 93.059				**473,211**	**59,211**
Pre-disease biomarkers of persistent organic pollutants, immune system, and amyotrophic lateral sclerosis	93.061	6R01TS000315-03-01		269,305	91,228
Serological profiling of the human virome and ALS risk in a military population	93.061	5R01TS000318-03-00		76,865	30,772
Total for Assistance Listing Number 93.061				**346,170**	**122,000**
Characterizing mechanisms and consequences of intergenic transcription in human cancers	93.077	5F31CA264958-02 REVISED		30,697	-
Total for Assistance Listing Number 93.077				**30,697**	**-**
Training Grant in Maternal and Child Health	93.110	5T76MC00001 68 00		346,535	-
Total for Assistance Listing Number 93.110				**346,535**	**-**
A national study on the effects of air pollution and temperature on children's neurodevelopmental outcomes	93.113	1R01ES034038-01A1		82,313	-
Air Particulate, Metals, and Cognitive Performance in an Aging Cohort- Roles of Circulating Extracellular Vesicles and Non-coding RNAs	93.113	5R01ES027747-05		1,122,242	710,181
Assessing the effects of exposures to phthalates in both the female and male germlines	93.113	5F31ES032631-03		34,288	-
Causal machine learning methods for studying the effects of environmental exposures on childhood cancer using natural experiments	93.113	5K01ES032458-03		102,616	-
Characterizing the link between multiple environmental exposures and Parkinson’s disease exacerbation	93.113	1R01ES034373-01		297,344	13,329
Climate factors, racial/ethnic disparities, and menstrual cycle health	93.113	1R01ES035106-01		14,850	-
Data science tools to identify robust exposure-phenotype associations for precision medicine	93.113	3R01ES032470-02S1		970,646	161,005
Early and late-life metal exposures and Alzheimer's disease	93.113	5R01ES024165-05REVISED		(2,571)	-
Effects of Environmental Phthalates and Chemical Mixtures on Male Puberty and Semen Quality	93.113	5R01ES014370-15 REVISED		150,109	47,017
Engineered Nanomaterial Synthesis, Characterization and Method Development Center for Nano-safety Research	93.113	5U24ES026946-05		72,045	72,045
Environmental Obesogens and Weight Change in the POUNDS LOST Trial	93.113	5R01ES022981-08		1,021,409	135,894
Estimating acute impacts of unconventional oil and gas development on cause-specific hospitalization via satellite-based exposure assessment	93.113	1K99ES034459-01		71,463	-
Glucose Metabolism in Adults Prenatally Exposed to Diabetogenic Pollutants	93.113	5R01ES021477-05 REVISED		(56,967)	-
Graduate Training in Biostatistics	93.113	5T32ES007142-40		431,281	-
Gut Microbiome in Adults with Early Life Exposures to Environmental Chemicals	93.113	5R21ES023376-03Revised		(61,365)	-
Harvard Chan School NIEHS Center for Environmental Health	93.113	5P30ES000002-59REVISED		1,645,851	12,910
Identifying low dose measurement error corrected effects of multiple pollutants using causal modeling	93.113	3R01ES032418-03S1		428,626	-
Immunotoxicity in Humans with Lifetime Exposure to Ocean Pollutants	93.113	4R01ES021993-05REVISED		(27,127)	-
Inflammation and metabolic abnormalities in pollutant-exposed children	93.113	5R01ES026596-02		(23,274)	-
International Society for Environmental Epidemiology (ISEE) Annual Conference	93.113	5R13ES032292-03		15,005	-
Maternal and Paternal Preconception Environmental Exposures and Children's Health	93.113	5R01ES027408-05		299,959	50,660
Metals and developmental origins of late life cognitive function	93.113	5R01ES031943-04		649,987	83,800
Multi-Pathway DNA Repair Capacity Measurements in Lung Cancer Patients and Healthy Controls	93.113	5U01ES029520-05REVISED		664,652	189,019
Novel markers of exposure and pathways of response to Chromium	93.113	5R01ES027981-05REVISED		241	241
Nurses Health Study 3: A multiple exposure environmental epidemiology cohort of young adults	93.113	5R24ES028521-05		364,985	143,936
Organ on chip technology to evaluate engineered nanomaterial toxicity	93.113	5U01ES027272-05		(771)	-
Per- and Polyfluoroalkyl substances mixtures and maternal cardiovascular disease risk across the reproductive life course	93.113	5R01ES031065-03		507,732	168,085
Phthalates, Gestational Diabetes, and Markers of Type 2 Diabetes Risk in Women	93.113	5R01ES026166-06		1,454	-
Pollutant-related diabetes in the Nurses' Health Study II	93.113	5R01ES021372-05		(41,058)	-

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Pregnancy and postpartum as vulnerable exposure windows: phthalates and maternal cardiometabolic health	93.113	5R01ES033185-02		396,850	168,126
Relationship Between Multiple Environmental Exposures and CVD Incidence and Survival: Vulnerability and Susceptibility	93.113	5R01ES028033-05		547,773	217,097
Retrospective assessment of radon progeny and pollution effects in COPD	93.113	5R21ES029637-02		12,382	(38)
SPP1, Oxidative Stress, and Lead Toxicity	93.113	5R01ES029097-05		588,012	239,535
The Impact of Maternal and Paternal Preconception Perfluoroalkyl Substance (PFAS) Exposure on Reproductive and Perinatal Outcomes	93.113	5R01ES031657-04		786,616	96,262
Training Program in Environmental Epidemiology	93.113	5T32ES007069-40		12,190	-
Training Program in Environmental Epidemiology	93.113	5T32ES007069-43		616,867	-
Vulnerability During Infancy to Immunotoxic Contaminant Exposures	93.113	5R01ES030394-03REVISED		88,893	78,237
Total for Assistance Listing Number 93.113				**11,785,548**	**2,587,341**
Anti-Inflammatory Mesenchymal Stem Cell Therapy for Dental Applications	93.121	5K08DE025292-05		(1,009)	-
Bayesian multivariate image analysis for studying oral microbiome biogeography	93.121	5R21DE026872-02		14,977	-
Biology of cortical bone of long bones and calvarium Role of Sfrp4 in periosteal bone formation	93.121	5R01DE029615-04		366,370	4,531
Chemical Approaches to Rescue Human Mitochondrial Disease Mutations	93.121	5F30DE028206-04 REVISED		(3,884)	-
Cxcl12-Hedgehog signaling in cranial bone regeneration	93.121	5R01DE025866-07		351,012	-
Engineering Skeletal Muscle With Biodegradable Hydrogels	93.121	5R01DE013349-21		310,010	-
Gas-Hedgehog signaling in intramembranous bone formation and expansion	93.121	5R01DE025866-04		(25,211)	-
Multivariate Bayesian variable selection for high-dimensional oral microbiome data	93.121	7R03DE027486-02REVISED		3,111	-
Total for Assistance Listing Number 93.121				**1,015,376**	**4,531**
COVID-19: Health Promotion and Disease Prevention Research Centers	93.135	5U48DP006376-05-00		69,288	-
Health Promotion and Disease Prevention Research Centers	93.135	5U48DP006376-05-00		1,149,758	21,387
Total for Assistance Listing Number 93.135				**1,219,046**	**21,387**
Metals and Metal Mixtures: Cognitive Aging, Remediation and Exposure Sources (MEMCARE)	93.143	3P42ES030990-03S1REVISED		1,594,920	439,455
Total for Assistance Listing Number 93.143				**1,594,920**	**439,455**
Military exposures and ALS in a large veteran population	93.161	5R01TS000338-02-00		144,905	80,477
Total for Assistance Listing Number 93.161				**144,905**	**80,477**
Advanced tools for using ancient DNA to study biology and history	93.172	3R01HG012287-11S1		423,223	-
Center for Genome Imaging	93.172	5RM1HG011016-03 REVISED		2,751,666	1,045,400
Coordinating Center for the Undiagnosed Disease Network Phase II	93.172	5U01HG007530-08 REVISED		3,260,716	682,796
Development and Application of Computational Methods for Single Cell DNA Sequencing Data	93.172	1R01HG012573-01 REVISED		581,629	-
Direct sequencing of nascent RNA to uncover the functional impact of genetic variants on RNA processing	93.172	1R21HG011682-01A1		121,096	-
Fine-mapping causal tissues at disease-associated loci to infer disease subtypes	93.172	1F32HG012889-01		14,718	-
FLYBASE: A DROSOPHILA GENOMIC AND GENETIC DATABASE	93.172	5U41HG000739-30 (REVISED)		2,554,823	1,024,763
Grammar-Driven Genomic Data Visualization	93.172	5R01HG011773-02		290,262	-
HMMER and Infernal: Finding distant homologs of sequences and RNA structures	93.172	5R01HG009116-07		390,024	-
Leveraging functional data to predict disease risk in multi-ethnic populations	93.172	5R01HG006399-11		735,595	446,022
Light-Seq: Spatially targeted profiling of transcriptomic states in cells and tissue	93.172	1R01HG012926-01		13,635	-
Mechanisms of Transcriptional Control Revealed by Nascent Transcript Sequencing	93.172	2R01HG007173-10A1 REVISED		312,056	-
Mechanisms of Transcriptional Control Revealed by Nascent Transcript Sequencing	93.172	5R01HG007173-09 REVISED		47,001	-
New approaches for leveraging single-cell data to identify disease-critical genes and gene sets	93.172	1K99HG012203-01REVISED		57,982	-
Powering whole genome sequence-based genetic discovery for common human diseases	93.172	3U01HG009088-04S1 REVISED		43,131	14,230
Pragmatic randomized trial of polygenic risk scoring for common diseases in primary care	93.172	5R35HG010706-03 REVISED		110,962	-
Semi-permeable capsules for high-throughput single cell multi-omics	93.172	1R21HG012771-01		199,495	-
Statistical and high-throughput models of enhancer function and evolution	93.172	5R01HG011485-03 (REVISED)		650,765	170,368
Structurally complex genome loci in human populations and human phenotypes	93.172	5R01HG006855-11		509,849	-
Systematic Exploration of the Human Interactome III	93.172	5U24HG006673-10		(4,433)	-

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Systematic Exploration of the Human Interactome IV	93.172	5U24HG006673-12		913,586	-
Tagmentation-based Indexing for Methylation Sequencing as a novel method of high-throughput methylation clock measurement	93.172	1R21HG011850-01		445,499	-
The transcriptome-wide impact of biological perturbations	93.172	1F31HG013036-01		4,524	-
Training in Bioinformatics and Integrative Genomics	93.172	5T32HG002295-20		722,550	-
Total for Assistance Listing Number 93.172				**15,150,354**	**3,383,579**
Characterizing the Functional Architecture of the Necklace Olfactory System	93.173	3R01DC016222-05S1		42,043	-
Afferent-efferent interactions in the developing cochlea	93.173	5R01DC015974-05 REVISED		93,535	-
Assessment of speech- and fine-motor coordination and their link to language in children with autism spectrum disorder	93.173	5F31DC019509-02 REVISED		28,501	-
Binding of PCDH15 to TMC1 for Mechanosensation in the Inner Ear	93.173	5F32DC018713-03 REVISED		51,458	-
Clear speech in ALS: Effects of feedback from a novel ASR practice paradigm and practice dosage	93.173	5F31DC019016-02		5,506	-
Cortical feedback and olfactory processing	93.173	5R01DC016289-05 (REVISED)		414,632	-
Corticostriatal Contributions to Auditory Perceptual Hypersensitivity	93.173	5F31DC018974-03		25,395	-
Development of Specializations Required for Temporal Coding in Octopus Cells	93.173	5F32DC020070-02		71,202	-
Dissecting the neural substrates of interhemispheric integration in the larval Drosophila olfactory system	93.173	5F31DC020132-02		32,834	-
Elucidating the structural determinants of odor specificity in insect olfactory receptors	93.173	5R00DC019401-04		300,941	-
Emergence of valence coding in the ventral striatum	93.173	5R01DC017311-05		430,777	-
Gene Therapy for Hearing and Balance Disorders	93.173	5R01DC016932-05		356,443	42,098
Genetic Dissection of Auditory Circuit Assembly	93.173	5R01DC009223-14		529,184	-
Investigating cortex-brainstem interactions in conditioned taste aversion	93.173	5F31DC020631-02		27,634	-
Language-specific and language-general mechanisms in bilingual aphasic individuals	93.173	1K99DC019973-01A1 (REVISED)		118,246	-
Measuring and Modeling the Effects of Reticular Lamina Flexibility on Outer Hair Cell Bundle Phase and Cochlear Amplification	93.173	1F31DC021079-01 REVISED		18,142	-
Mechanisms of Hair Cell Mechanotransduction Channel Gating	93.173	5R21DC018631-03		131,045	-
Morphological and Molecular Development of Efferent Innervation of the Cochlea	93.173	5F32DC019009-03		68,310	-
Neuron-Glia Interactions in the Cochlea	93.173	5R01DC020182-02		494,993	-
Synaptic and Circuit Mechanisms of Olfactory Processing	93.173	5R01DC008174-15		225,450	-
The mechanism of inner ear pressure homeostasis by the endolymphatic sac	93.173	5R01DC015478-05		11,936	-
Training for Speech and Hearing Sciences	93.173	5T32DC000038-30 REVISED		60,456	-
Training for Speech and Hearing Sciences	93.173	5T32DC000038-32		417,691	-
What Causes Hearing Loss: Advancing the Methods	93.173	5R01DC017717-03		208,131	64,872
Total for Assistance Listing Number 93.173				**4,164,485**	**106,970**
Telehealth Technology Enabled Learning Program	93.211	6 U3IRH43510 02 02		504,150	-
Total for Assistance Listing Number 93.211				**504,150**	**-**
Sensory receptors of the vagus nerve	93.213	5DP1AT009497-05		45	-
2022 Teaching Kitchen Research Conference	93.213	1R13AT011986-01		23,777	-
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		143,396	-
Spinal Cord Nociceptive Circuits that Deliver Outputs to the Brain to Initiate Pain	93.213	1R01AT011447-01 REVISED		1,494,750	745,227
Total for Assistance Listing Number 93.213				**1,661,968**	**745,227**
Comparing Targeted and Non-Targeted Approaches to Improving the Value of Cancer Care Services	93.226	5R01HS026498-04		316,874	31,921
Deriving an Evidence Base for Emergency Management in U.S. Hospitals: Toward Resilience in the Midst of COVID-19	93.226	5R01HS028240-02		274,845	36,225
Drug markets and the opioid epidemic	93.226	1R36HS029104-01		1,474	-
Examining payment and delivery model impacts on health equity using novel quasi-experimental causal inference methods	93.226	5R01HS028985-02		229,240	14,735
Health Policy Training Grant	93.226	5T32HS000055-29		418,496	-
Identifying Predictors of Hospital Admission from the ED Among the Elderly	93.226	3R01HS025408-04S1 REVISED		281,264	108,747
Prescribing of opioids at hospital discharge and associated adverse patient outcomes	93.226	5R01HS026753-04 REVISED		543,725	166,525
Quality and Outcomes under Medicaid Managed Care: Evidence from Random Plan Assignment	93.226	5K01HS025786-05		111,872	-
R18 Closed Loop Diagnostics : AHRQ R18 Patient Safety Learning Laboratories	93.226	5R18HS027282-04		861,085	612,048
Risk Aversion, Fear of Malpractice, and Medical Decision Making in the Emergency Department	93.226	5R01HS026730-04		477,729	179,179

The accompanying notes are an integral part of this schedule.

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Variation in Adoption of Evidence-Based and Patient Centered Care at the Delivery System Level	93.226	1R36HS028537-01A1 REVISED		172	-
Total for Assistance Listing Number 93.226				**3,516,776**	**1,149,380**
Understanding the effects of sleep deprivation on the gut's cellular homeostatic process	93.233	1F32HL168844-01		15,535	-
Total for Assistance Listing Number 93.233				**15,535**	**-**
2/4 Powering Genetic Discovery for Severe Mental Illness in Latin American and African Ancestries	93.242	5U01MH125045-03REVISED		674,437	-
A novel output pathway from the cerebellum for regulation of diverse non-motor behaviors	93.242	5R01MH122570-04 REVISED		987,933	-
A Tool for Synapse-level Circuit Analysis of Human Cerebral Cortex Specimens.	93.242	5UG3MH123386-03		916,626	92,526
Basal ganglia circuit mechanisms for threat coping	93.242	1R01MH133950-01		103	-
Behavioral and Neurocognitive Mechanisms Linking Peer Victimization to Adolescent Psychopathology	93.242	5K99MH126163-02		122,748	-
Bidirectional Interactions of Cortex and Basal Ganglia During Action Selection	93.242	5F32MH125596-03		77,801	-
Biochemical and Biophysical Tuning of Presynaptic Function by the Clock Protein BMAL1	93.242	1F30MH132277-01		32,347	-
Biological/behavioral rhythms and suicidal behavior: A real-time monitoring study	93.242	5K23MH120439-04		165,143	-
Building a robust organoid platform to study the developmental potential and physiology of human specific cortical cell types	93.242	1RF1MH123948-01		548,803	-
Capturing the Structure and Dynamics of Suicidal Thinking	93.242	1F31MH130055-01A1		28,122	-
Characterizing pubertal and age mechanisms of neurodevelopment and association with rising internalizing symptoms	93.242	5R01MH129493-02 (REVISED)		521,826	207,467
Child Trauma and the Development of Neural Systems Underlying Emotion Regulation	93.242	7R01MH103291-05 REVISED		(1,738)	-
Clinician-Consumer Collaboration in Transdiagnostic, Modular Youth Psychotherapy	93.242	5F31MH127862-03		38,571	-
Comprehensive and multi-resolution mapping of cell morphology and wiring through X-ray holographic nano-tomography	93.242	1RF1MH128949-01 REVISED		300,599	8,909
Comprehensive single-cell atlas of the developing mouse brain	93.242	1U01MH130962-01 (REVISED)		1,416,410	362,998
Computational and neural underpinnings of decision-making in social contexts	93.242	5K00MH125856-04		78,488	-
Cortical interneuron subtypes adapt to signals from local pyramidal cells	93.242	5F32MH125464-02		74,197	-
Deprivation and Threat: Dimensions of Early Experience and Neural Development	93.242	5R01MH106482-05 REVISED		(10,369)	-
Developmental origins of mental illness: evolution and reversibility	93.242	5P50MH094271-10 (Revised)		1,948,591	429,637
Dissecting Mechanisms of Striatal Acetylcholine Transmission in the Vertebrate Brain	93.242	5F32MH131232-02		60,032	-
Dissecting the assembly of neurotransmitter release sites	93.242	5R01MH113349-07		653,719	-
Dissecting the assembly of vertebrate neurotransmitter release sites	93.242	5R01MH113349-05 REVISED		98	-
Distributed Neural Activity Patterns Underlying Practice-Based Learning	93.242	5K99MH127471-02		89,206	-
Efficacy of a differentiated care intervention for adolescents transitioning to adult HIV care in Peru	93.242	1R01MH131414-01 REVISED		296,492	3,024
Emotional Awareness: An integrative neural mechanism linking childhood trauma with psychopathology	93.242	5K99MH127248-02		112,404	-
ESSENCE (Enabling translation of Science to Service to ENhance Depression CarE)	93.242	5U19MH113211-05 REVISED		142,907	51,379
Ethical and Policy Aspects of Cortical Visual Prosthetics Research: An Empirical Neuroethics Study	93.242	5F32MH127776-03 REVISED		74,107	-
Event-related Neuroimaging of Human Memory Formation	93.242	5R01MH060941-22		395,473	-
Exploring a Novel Paradigm of Schizophrenia and Bipolar Disorder	93.242	5R01MH113279-05		(6,267)	-
Functional and population genetic architectures of complex disease	93.242	2R01MH101244-11 REVISED		652,760	180,833
Genetic Topography of Brain Morphology in Relation to Language in Large N Study of Schizophrenia	93.242	5R03MH122759-02 REVISED		36,603	-
Genomic mechanisms of firing rate homeostasis	93.242	5R01MH116223-05 REVISED		469,185	-
Health Policy Training Program: Promoting Outcomes, Quality, and Diffusion of Medical Advances	93.242	5T32MH019733-28		342,067	-
High throughput assaying of circuit activity and connectivity in brain organoids	93.242	1RF1MH123977-01 (REVISED)		716,484	57,033
Impact of Telemedicine on Medicare Beneficiaries with Mental Illness	93.242	5R01MH112829-04 REVISED		2,109	-
Improving Outcomes in Depression in Primary Care in a Low Resource Setting	93.242	5R01MH121632-02		735,601	339,279
In situ transcriptome imaging in single cells	93.242	5R01MH113094-05		(8,787)	-

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Integrating common and rare genetic variation in autism spectrum disorder	93.242	5F30MH129009-02 REVISED		43,690	-
Intensive longitudinal study of suicidal behaviors and related health outcomes	93.242	5U01MH116928-04 (REVISED)		926,499	99,465
Leveraging EHR data to evaluate key treatment decisions to prevent suiciderelated behaviors	93.242	5R01MH121478-04 REVISED		777,011	264,873
Maternal hair cortisol concentrations, prenatal psychopathology and offspring behavioral phenotypes	93.242	1R21MH128985-01A1		198,007	29,298
Mathematical and computational modeling of suicidal thoughts and behaviors	93.242	5F31MH125495-02 (REVISED)		32,494	-
Modeling ASD-linked genetic mutations in 3D human brain organoids	93.242	5R01MH112940-05 (REVISED)		360,075	141,857
Neural mechanisms of foraging decisions	93.242	5F32MH126505-03		68,247	-
Neurodevelopment In HEU Children Exposed In Utero To Dolutegravir Or Efavirenz	93.242	5R01MH121191-04		672,481	584,519
Neurodevelopmental Mechanisms Underlying Stress Vulnerability during Adolescence	93.242	5R37MH119194-04		1,571,728	-
New Methodologies for Connectomics	93.242	5K99MH128891-02		145,149	-
Non-invasive targeted neuromodulation via focused ultrasound BBB permeabilization	93.242	5R01MH116858-04		33,828	33,828
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		188,540	-
Ph.D. Training in Neuroscience	93.242	5T32MH020017-25		693,242	-
Platform technologies for scalable highly multiplexed proteomic phenotyping of the brain	93.242	1RF1MH128861-01 (REVISED)		2,151,717	1,507,517
Post Traumatic Stress Disorder and Accelerated Aging in Women	93.242	5R01MH101269-08REVISED		999,238	914,018
Precision Mapping the Human Cerebellum for Neuromodulation and Understanding of Brain Disorders	93.242	5R01MH124004-03		490,086	66,904
Pregnancy influences maternal immune cell function and fetal brain development	93.242	5R01MH119459-05		686,401	-
Rare and common variants in complex disease	93.242	7R01MH101244-10		384,581	176,270
Real-time fMRI Neurofeedback as a Tool to Mitigate Auditory Hallucinations in Patients with Schizophrenia	93.242	4R33MH113751-03 REVISED		58,042	58,042
Resting-state functional connectivity mapping using Magnetic Particle Imaging (MPI)	93.242	1F30MH129062-01A1		46,049	-
Robust Learning Approaches for Assessing Effects and Effect Heterogeneity of Real World Antipsychotic Treatment Regimes in Elderly Persons with Schizophrenia	93.242	1R01MH130213-01A1		250,347	56,814
Scalable electron tomography for connectomics	93.242	1RF1MH129261-01 REVISED		443,814	206,568
Somatic Mosaicism in Neuropsychiatric Disorders	93.242	5F31MH124292-02 REVISED		18,930	-
State-dependent and branch-specific neurotransmitter usage in a serotonergic/glutamatergic neural circuit regulating adaptation to seasonal photoperiod	93.242	5R21MH127341-02		167,197	-
Structural Stigma and HIV Prevention Outcomes	93.242	5R01MH112384-06 (REVISED)		283,007	227,393
Subcortical influence on the respiratory coordination of cortical neurodynamics related to cognition	93.242	1R21MH125242-01A1 REVISED		33,881	8,750
Testing FIRST in Youth Outpatient Psychotherapy	93.242	5R01MH124965-03		754,256	242,511
The Brain Wiring of Frontostriatal Connections in Early Psychosis	93.242	5R21MH121704-02 REVISED		76,757	54,685
The molecular and cellular basis of cortical interneuron divergence	93.242	5R37MH071679-18 REVISED		589,711	-
The molecular roles of RFX3 in neurodevelopment and Autism Spectrum disorder	93.242	1F30MH128995-01A1		34,622	-
The Optics of Health: Race Skin Tone Minority Health and Health Disparities in the U.S.	93.242	1DP2MH132941-01		814,870	-
Tools to broaden access to high-throughput functional connectomics	93.242	1RF1MH117808-01A1 REVISED		1,795,309	1,461,048
Training Program in Comparative Effectiveness Research for Suicide Prevention	93.242	5T32MH125815-02		36,757	-
Training Program in Psychiatric Genetics and Translational Research	93.242	5T32MH017119-36		440,643	-
Use of Telemedicine in the Treatment of Mental Illness	93.242	5R01MH112829-06		696,429	55,592
Total for Assistance Listing Number 93.242				**29,648,466**	**7,923,037**
COVID-19: The Harvard TH Chan School of Public Health Center for Work, Health and Wellbeing	93.262	6U19OH008861-16-01		1,630,866	677,559
Lung Disease in Chinese Textile Workers	93.262	6R01OH002421-26-01		465,494	26,067
The HSPH Education and Research Center of Occupational Safety and Health	93.262	6T42OH008416-18M002		2,000,278	-
Total for Assistance Listing Number 93.262				**4,096,638**	**703,626**

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Alcohol and Breast Cancer: Genetic Interactions and Effects on Aromatase Inhibitor Therapy	93.273	5K01AA027831-04		136,031	66
Medications for Alcohol Use Disorder: Unfilled Prescriptions and Treatment Trajectories	93.273	5R01AA029267-03		662,681	303,234
Telehealth in the Treatment of Alcohol Use Disorders: Impact on Access, Disparities, and Quality of Care	93.273	1R01AA030539-01		13,882	-
Total for Assistance Listing Number 93.273				**812,594**	**303,300**
Mechanisms for somatodendritic dopamine release in the midbrain	93.279	1R01DA056109-01A1		141,627	34,405
Multi-Study Integer Programming Methods for Human Voltammetry	93.279	5F31DA052153-02REVISED		(1,082)	-
Next Generation Cell-Type-Specific Viral Vectors for Non-Neuronal Brain Cell Types	93.279	1RF1DA048787-01		69,080	-
Opioid Prescribing and Chronic Pain in the Primary Care Setting	93.279	5F30DA052116-03		53,419	-
Precision pharmacology of the opioids	93.279	5DP1DA046586-05		480,897	-
Stress, Arousal and Mood: Affective Influences on Decisions under Uncertainty	93.279	5R01DA042855-05 (REVISED)		206,764	-
Telemedicine for Treatment of Opioid Use Disorder	93.279	5R01DA048533-04		645,625	104,434
The Development and Validation of an Index to Measure Vicarious Trauma Exposure Among Substance Use Providers	93.279	5R36DA055242-02		52,624	-
Tracking and regulation of nicotine dependence in the insular cortex	93.279	1F30DA057823-01		13,235	-
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		461,640	-
Total for Assistance Listing Number 93.279				**2,123,829**	**138,839**
Brain-wide Neuronal Circuit Mapping with X-ray Nano-Holography	93.286	5K99EB032217-02		72,452	-
Total for Assistance Listing Number 93.286				**72,452**	**-**
Advancing novel methods to measure and analyze multiple types of discrimination for population health research	93.307	5R01MD012793-05		442,763	210,453
DNA methylation and adversity: pathways from exposures to health inequities	93.307	5R01MD014304-04 REVISED		513,900	165,493
Evaluating an Intervention to Improve Medication Access and Quality of Care for Underserved Populations With Chronic Conditions	93.307	1R01MD017747-01REVISED		370,421	98,091
Field Experiment to Assess the Impact of Medicaid on Disparities in Dental Care Utilization	93.307	5R01MD017093-02		209,863	15,010
Health Reform and Oral Health Disparities: a Mixed Methods Evaluation	93.307	5R00MD012253-05 REVISED		175,783	-
Reducing oral health disparities in children using predictive analytics and mathematical modeling	93.307	5K99MD016895-02 REVISED		110,100	-
Work Requirements and Health Care Disparities in Medicaid: A Randomized Controlled Trial	93.307	5R01MD014970-04 REVISED		292,182	28,317
Total for Assistance Listing Number 93.307				**2,115,012**	**517,364**
4D Nucleome Network Data Coordination and Integration Center	93.310	5U01CA200059-08 REVISED		2,405,112	190,827
Constructing the nest - understanding the mechanisms of nidoviridae RNA genomes transcription and recombination	93.310	1DP2AI175475-01		552,599	-
Data Analysis Center for Somatic Mosaicism Across Human Tissues Network□	93.310	1UM1DA058230-01		32,829	-
Data Exploration and Visualization Tools for HuBMAP and a Human Reference Atlas	93.310	1OT2OD033758-01 REVISED		975,843	-
Exploring the unknown protein universe using evolutionary information	93.310	5DP5OD026389-05 (REVISED)		545,625	-
High-throughput single-molecule protein identification via super-resolution imaging	93.310	5DP1GM133052-05		728,968	-
High-Throughput, Highly Multiplexed In Situ Proteomic Imaging of Human Tissues	93.310	5UH3CA255133-04 (REVISED)		193,505	-
HuBMAP HIVE Tools Component Supplement	93.310	3OT2OD026677-01S4		(8,008)	-
Identifying Principles of Protein Mechanics by Applying Force and Observing Motion	93.310	1DP2GM141000-01		559,924	-
Interoperability and Collaboration with the Common Fund Data Ecosystem to Improve Utility of 4DN Data	93.310	3OT2OD032119-01S1 REVISED		507,223	-
Investigating Organ Formation and the Emergence of Complexity in the Visual System Using Comparative Developmental Approaches	93.310	5DP5OD023111-05		22,053	-
Molecular Causes of Down Syndrome Associated Congenital Heart Disease and Other Phenotypes	93.310	1R01HL151257-01 REVISED		433,349	-
Psychological functions of music in infancy	93.310	5DP5OD024566-05 (REVISED)		(15,674)	-
Research Training on Harnessing Data Science for Global Health Priorities in Africa	93.310	5U2RTW012140-02		315,384	192,950
Single-cell epigenomic and cellular plasticity	93.310	1DP2HL151353-01		675,226	-
Subcellular RNA-Proteome Mapping in Subtype- and Circuit-specific Growth Cones: Development, Cell Biology, Disease, and Regeneration	93.310	5DP1NS106665-05		580,707	-
The Harvard Dataverse repository: A generalist repository integrated with a Data Commons	93.310	1 OT2 DB000004-01		483,961	-
The Molecular Basis of Caste Development and Evolution in Ants	93.310	5DP5OD029792-03		462,948	-

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Tools to facilitate manipulation of protein-specific glycosylation stoichiometry in cells	93.310	5U01CA242098-03		25,993	-
Toward mechanistic cognitive neuroscience: cell types, connectivity, and patterned perturbations	93.310	5DP1MH125776-03		1,322,885	-
Uncovering molecular effectors of mammalian aging	93.310	5DP1AG063419-05		936,534	-
Total for Assistance Listing Number 93.310				**11,736,986**	**383,777**
1/3 Harvard Clinical and Translational Science Center	93.350	1UM1TR004408-01		619,503	-
Institutional Career Development Core	93.350	5KL2TR002542-05		1,451,708	1,411,949
NRSA Training Core	93.350	5TL1TR002543-05		739,177	-
Robotic Apparel to Enable Low Force Haptic Cueing for Improving Parkinson's Gait	93.350	5U01TR002775-03 (REVISED)		86,202	55,787
The Harvard Clinical and Translational Science Center	93.350	5UL1TR002541-05 REVISED		12,043,424	4,825,070
Total for Assistance Listing Number 93.350				**14,940,014**	**6,292,806**
Drosophila resources for modeling human diseases	93.351	5R24OD021997-04 REVISED		(10,426)	-
Next-generation Drosophila cell lines to elucidate the cellular basis of human diseases	93.351	5R24OD019847-04 REVISED		238,305	58,580
Resources for functional studies in Drosophila	93.351	5R24OD031952-02 REVISED		392,242	9,778
TRiP resources for modeling human disease	93.351	5R24OD030002-04		1,043,405	-
Using CRISPR technology to study the function of paralogous genes	93.351	5R24OD026435-04 REVISED		174,973	26,586
XenCAT: Xenopus Single Cell Atlas	93.351	1R24OD031956-01A1		391,597	74,130
Total for Assistance Listing Number 93.351				**2,230,096**	**169,074**
Biomaterials to Create T Cell Immunity	93.353	1U54CA244726-01		1,304,522	724,354
COVID-19: The Implementation Science Center for Cancer Control Equity	93.353	5P50CA244433-04REVISED		577,307	510,535
Integrative Visualization of Spatiotemporal Tumor Atlases	93.353	1R33CA263666-01 REVISED		128,597	-
The Implementation Science Center for Cancer Control Equity	93.353	5P50CA244433-04REVISED		1,948,687	1,381,943
The pre-cancer atlases of cutaneous and hematologic origin (PATCH Center)	93.353	3U2CCA233262-01S1 REVISED		2,007,246	1,088,273
Total for Assistance Listing Number 93.353				**5,966,359**	**3,705,105**
Cancer Cachexia Action Network	93.393	1OT2CA278689-01 REVISED		183,911	-
CANcer Cachexia Action Network/CANCAN	93.393	1OT2CA278654-01REVISED		198,699	-
Cancer Epidemiology Cohort in Male Health Professionals	93.393	2U01CA167552-11		1,633,397	52,837
Cancer Epidemiology Cohort in Male Health Professionals	93.393	5U01CA167552-10REVISED		293,776	23,059
Cellular engineering to improve the efficacy and specificity of targeted immunotherapy	93.393	5F99CA264312-02		34,136	-
Characterizing the effects of extracellular matrix viscoelasticity on dendritic cell activation	93.393	5K00CA253759-04		84,887	-
Colorectal carcinogenesis and Fusobacterium nucleatum: oncomicrobe, oncometabolites, and oncoimmunology	93.393	5R01CA154426-10		15,270	-
Comparative Modeling to Inform Cervical Cancer Control Policies	93.393	5U01CA253912-03Revised		1,895,274	1,412,695
Diet and Cancer Pooling Project	93.393	75N91021P00752		18,526	-
Improving Mammography Completion and Follow-Up in Community Health Centers	93.393	5R03CA256233-02REVISED		26,839	3,126
Informing anti-tobacco communications with affective and decision science: Application of the Appraisal Tendency Framework	93.393	5R01CA224545-04		483,347	42,738
Investigation of the carcinogenic effects of bactericidal antibiotics in the gut	93.393	5K00CA245801-05 (REVISED)		66,569	-
Life Course Cancer Epidemiology Cohort in Women	93.393	5U01CA176726-10REVISED		2,761,085	1,557,633
Marine omega-3 fatty acid, gut microbiome and colorectal cancer prevention	93.393	5R00CA215314-04		11,135	-
Molecular Biology of Oncogenic Papillomaviruses	93.393	5R35CA197262-07 REVISED		577,721	-
Molecular mechanisms of pathway choice in DNA double strand break repair	93.393	5R01CA272436-02		371,101	-
Multifactoral breast cancer risk prediction accounting for ethnic and tumor diversity	93.393	5U01CA249866-03REVISED		380,065	99,842

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Risk Factors for Breast Cancer in Younger Nurses	93.393	5R01CA050385-30		(41)	(41)
Single-molecule analysis of eukaryotic transcription activation	93.393	5R01CA246500-04		371,880	168,295
Statistical Methods for Analysis of Massive Genetic and Genomic Data in Cancer Research	93.393	2R35CA197449-08		783,584	-
Statistical Methods for Analysis of Massive Genetic and Genomic Data in Cancer Research	93.393	5R35CA197449-07		160,032	-
Statistical methods for cancer genomics and cell-free DNA analysis	93.393	5R01CA240299-04		395,452	60,426
T Cell Receptor Forces: From Molecular Mapping to Cancer Therapeutic Triggering	93.393	5K00CA234959-05		94,865	-
The Boston Lung Cancer Survival Cohort	93.393	2U01CA209414-07		68,034	-
The Boston Lung Cancer Survival Cohort	93.393	5U01CA209414-06Revised		1,999,075	455,809
The Genetic Architecture of Breast Parenchymal Textural Features and its Implications for Breast Cancer Risk	93.393	5R03CA224196-02REV		(4,597)	-
The Gut Microbiome, Lifestyle, and Colorectal Neoplasia	93.393	5U01CA261961-02		234,991	-
The Impact of a Changing Health Care Delivery System on the Quality of Oncology Care	93.393	3R01CA255035-03S1 REVISED		763,074	171,670
Theory and methods for mediation and interaction	93.393	5R01CA222147-05REVISED		321,579	98,857
Understanding the Mechanism of a Gut Microbial Genotoxin Involved in Colorectal Carcinogenesis	93.393	5R01CA208834-05		(1,959)	-
Total for Assistance Listing Number 93.393				**14,221,707**	**4,146,946**
Advancing technologies for the collection and analysis of high dimensional immunoprofiles and tumor images	93.394	1R50CA274277-01		149,334	-
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	1R01CA255184-01A1REVISED		165,797	20,799
COVID-19: Causal, Statistical and Mathematical Modeling with Serologic Data	93.394	1U01CA261277-01Rev		564,167	106,423
High dimensional digital pathology to investigate the tumor micro environment and its impact on response to therapy	93.394	5R50CA252138-03		222,252	-
Total for Assistance Listing Number 93.394				**1,101,550**	**127,222**
Biomaterial Cancer Vaccines that Generate Patient-Specific Antigen In Situ	93.395	5R01CA223255-05 (REVISED)		82,256	-
Coffee and metabolites modulating the gut microbiome for improved colorectal cancer survival	93.395	5R01CA263776-02		394,332	239,253
Developmental regulation of apoptosis as a modifiable driver of radiotherapy-induced neurocognitive impairment in pediatric patients	93.395	5R37CA248565-04		506,022	-
Identifying optimal dynamic strategies for prostate cancer control	93.395	5R00CA248335-04		193,259	-
Target MDM2/MDMX for reducing normal tissue toxicity induced by chemotherapy	93.395	5R01CA233558-03 REVISED		(263,205)	-
Total for Assistance Listing Number 93.395				**912,664**	**239,253**
3D Models of Immunotherapy	93.396	5U01CA214369-05		74,250	26,866
Cellular and molecular mechanism of Hippo signaling in suppressing liver tumor formation	93.396	5R01CA222571-05		304,782	-
Chemical Genetic Approaches to Study Chromatin Complexes	93.396	1R01CA274437-01A1		3,204	-
Colorectal carcinogenesis and Fusobacterium nucleatum: oncomicrobe, oncometabolites, and oncoimmunology	93.396	2R01CA154426-11		281,060	-
Decoding and targeting the PI3K-mTOR signaling network in cancer	93.396	5R35CA197459-07		21,638	21,638
Decoding and targeting the PI3K-mTOR signaling network in cancer	93.396	5R35CA197459-09		843,027	15,437
Defining mechanisms to promote antitumor immunity by modulating one-carbon metabolism	93.396	1R01CA276866-01		217,555	-
Dynamics of Notch Signaling	93.396	1R01CA272484-01		449,851	148,775
Identification of Transposable Element Insertions in the Kids First Data□	93.396	5R03CA249364-02		115,736	-
Micro-capsules for versatile multiplexed cytometry	93.396	1R33CA278392-01		31,212	-
Molecular mechanisms of Nutrient sensing in cancer	93.396	5R01CA213062-05		33,583	-
Mutational signature analysis: methods and applications to the clinic	93.396	5R01CA269805-02		499,549	-
Notch Signaling in Cancer	93.396	5R35CA220340-06		778,705	-
Progenitor cell states contributing to aging and lung cancer	93.396	5U01CA267827-02 REVISED		489,806	321,814
Roles of Eukaryotic Translation Initiation Factors in Gene Expression	93.396	5R01CA200913-05		(3,085)	-
Single Cell Genome-Wide Myeloid Response Profiling in Immunotherapy	93.396	5R01CA218579-05		647,527	282,046
Sirtuins and Cancer	93.396	5R01CA273461-02		551,805	138,207
Tracking the evolution of breast cancer through single cell analyses of premalignant breast tissues from women at high risk for cancer development	93.396	5R35CA242428-04		972,117	-
Understanding the Mechanism of a Gut Microbial Genotoxin Involved in Colorectal Carcinogenesis	93.396	5R01CA208834-07		510,161	44,088
Unraveling the Complexities of Risk and Mechanism in Cancer	93.396	5R35CA220523-05		889,420	67,606
Viscoelasticity and T Cell Production	93.396	1R01CA276459-01		265,127	-
WebMeV: A Robust Platform for Intuitive Genomic Data Analysis	93.396	5U24CA231846-04REVISED		636,238	-
Total for Assistance Listing Number 93.396				**8,613,268**	**1,066,477**
Systems Pharmacology of Therapeutic and Adverse Responses to ImmuneCheckpoint and Small Molecule Drugs	93.397	5U54CA225088-05		1,285,556	410,467
Total for Assistance Listing Number 93.397				**1,285,556**	**410,467**

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A new multi-pathway kinase activity assay applied to compound library screening in cancer biology	93.398	1K99CA273170-01 REVISED		98,700	-
Clinical trial data analysis to design novel treatment regimens in oncology	93.398	5F30CA260780-03		51,818	-
Deciphering the mechanism of colibactin-induced DNA damage through quantitative and biochemical approaches	93.398	5F32CA254165-03 (REVISED)		43,987	-
Deciphering the role of Six2 in regulating cancer stem cell properties and promoting late-stage metastasis in breast cancer	93.398	5K00CA223023-06		100,718	-
Defining the role of the BCL7 subunit of mammalian SWI/SNF chromatin remodeling complexes in human cancer	93.398	5F31CA271427-02		40,628	-
Determining the role of LSD1 in multiple myeloma through a multi-omics approach at single cell resolution	93.398	5F31CA257625-03 (REVISED)		41,500	-
Developing and evaluating a decision support tool to disseminate tobacco control research and inform policy implementation	93.398	1K99CA277135-01		44,672	-
Development of ubiquitin-specific protease 8 (USP8) inhibitors	93.398	5F31CA261127-03		37,096	-
Discovery of diverse nucleotide immune signals for use as novel immunotherapies	93.398	1F99CA274660-01 REVISED		31,022	-
Dissecting the Execution Phase of BAK-Mediated Apoptosis in Cancer	93.398	5F30CA264846-03		38,696	-
Engineering tumor-targeting bacteria to sense and deliver therapeutics	93.398	4K00CA253756-03 (REVISED)		70,597	-
Harvard Education Program in Cancer Prevention Control	93.398	5T32CA057711-29		374,883	-
Identifying gut bacterial molecules and mechanisms that promote an anti-tumor response to immunotherapy	93.398	5K22CA258960-02		138,365	-
Identifying optimal dynamic strategies for prostate cancer control	93.398	5K99CA248335-02 REVISED		120	-
Interrogating the role for ATP-dependent chromatin remodeling complexes in immune response	93.398	5F30CA239317-04 REVISED		45,164	-
Investigating how cancer cells maintain redox homeostasis to support biomass production	93.398	5F30CA268633-02 REVISED		50,656	-
Investigating the role of ALG3 in the regulation of N-glycosylation by PI3K/AKT signaling in breast and lung cancer	93.398	5F31CA250094-03 REVISED		29,830	-
Investigating the role of apoptosis regulation in cancer therapy-induced vascular toxicities	93.398	1F31CA275321-01		21,664	-
Investigating the role of EZH2 as a therapeutic target in colorectal cancers	93.398	5F31CA260804-03 REVISED		32,333	-
Machine Learning Methods to Predict Cancer Progression and Estimate Treatment Effectiveness	93.398	5F30CA268631-02		52,703	-
Mechanisms of tumor microenvironmental regulation of T-cell infiltration in melanoma	93.398	5F31CA260802-03 REVISED		30,071	-
Metabolomic signatures of inflammation and metabolic health in relation to colorectal cancer risk	93.398	1F30CA265012-01A1		32,347	-
Methods for Mendelian randomization and mediation analysis using integrative genetic and genomic data for breast cancer	93.398	5K99CA256513-02		3,871	-
Optimizing the therapeutic index for pediatric medulloblastomas by targeting apoptosis	93.398	5F31CA246811-02REVISED		27,666	-
Overcoming Tumor Resistance with Enzyme-Instructed Nanoscale Assemblies and Immunotherapies	93.398	5K00CA234746-06		93,317	-
Patient Administrative Burden in Cancer Care Delivery	93.398	1K99CA277367-01		51,184	-
Program for Training in Cancer Epidemiology	93.398	5T32CA009001-48		651,332	-
Racial disparities in advanced prostate cancer care: An analysis of treatment patterns and patient experience	93.398	5F30CA264965-02		39,182	-
Regulation by mTORC1 of the lysosomal efflux of essential amino acids	93.398	5F30CA236179-06 REVISED		50,478	-
Regulation of the cell cycle and growth signaling pathways by a sensing mechanism for Vitamin B5-Coenzyme A metabolism	93.398	5F31CA254169-03		12,033	-
Role of a Two-Factor Genetic Circuit Regulating Stemness in Colorectal Cancer	93.398	5F30CA260739-03		51,861	-
Role of the Gut Microbiota in Regulating Responses to anti-PD-1 Cancer Immunotherapy	93.398	5F32CA247072-03 REVISED		31,207	-
Small molecule inhibitors for the study of colibactin-induced carcinogenesis by gut microbes	93.398	5F31CA247069-03 (REVISED)		(2,000)	-
Substrates and Functions of the Sideroflexin Mitochondrial Transporter Family	93.398	5R00CA241332-05		155,952	-
Targeting the E1 Control Point of Protein Ubiquitination in Cancer	93.398	1F30CA275160-01 REVISED		34,542	-
Training Grant in Quantitative Sciences for Cancer Research	93.398	5T32CA009337-40		2,279	-
Training Grant in Quantitative Sciences for Cancer Research	93.398	5T32CA009337-42		511,853	-
Understanding the role of TWIST1 in colorectal cancer progression and metastasis	93.398	3F30CA260789-02S1		36,722	-
Unraveling the influence of genetic subtype on spatial configurations of tissue and immune compartment composition in clear cell renal cell carcinoma	93.398	5F31CA250136-03 (REVISED)		26,794	-
Total for Assistance Listing Number 93.398				**3,185,843**	**-**
A novel approach to professional development for early childhood educators and caregivers	93.647	90PD0305-02-02		17,120	-
Total for Assistance Listing Number 93.647				**17,120**	**-**

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A defend and destroy approach to curing HIV	93.837	5U19HL129903-05 REVISED		(5,610)	(5,610)
A Novel Cognition-based Guidance System to Improve Surgical Safety	93.837	5R01HL126896-06		392,075	324,499
Assessing the Implementation of US Programs and Policies for the Prevention of Food Insecurity and Obesity in Schools	93.837	1F31HL162250-01A1REVISED		23,798	-
Bioprinting A Physiologically Aligned, Thick Cardiac Tissue for Regenerative Medicine	93.837	5F31HL144043-03		5,186	-
Complement Activation and Initiation of Heart Regeneration	93.837	5R01HL137710-04		41,027	-
CVD Epidemiology Training Program in Behavior, the Environment and Global Health	93.837	5T32HL098048-14REVISED		413,257	-
Defining Genetic Architecture and Pathways of DCM	93.837	5R01HL080494-15		558,316	-
Determining the Involvement in PERK in TMAO Induced Atherosclerosis	93.837	5F31HL163871-02		36,014	-
Developing and Evaluating Health and Environmental Messages to Improve Diet in Emerging Adults	93.837	1K01HL158608-01A1REVISED		51,328	-
Dietary Etiologies of Heart Disease	93.837	5R01HL035464-32		725,367	453,614
Genetic Signals in Ventricular Hypertrophy	93.837	5R01HL084553-13		448,766	-
Integrating lifecourse approaches, biologic and digital phenotypes in support of heart and lung disease epidemiologic research.	93.837	3U01HL145386-05S1		2,478,427	1,368,022
Mechanisms of DNA interstrand cross-link repair	93.837	5R01HL098316-08		814	-
Mediterranean diet, Metabolites, and cardiovascular Disease	93.837	5R01HL118264-08REVISED		(4,694)	-
Mediterranean diet, Metabolites, and cardiovascular Disease	93.837	5R01HL118264-10		419,697	206,194
Modern Analytics to Improve Quality and Outcome Assessments Following Congenital Heart Surgery	93.837	5R01HL162893-02		662,739	184,731
Molecular Quiescence and Cardiomyocyte Maturation	93.837	5R01HL151684-04		339,305	-
Multi-scale modeling of inherited pediatric cardiomyopathies	93.837	3UH3HL141798-05S1		794,544	583,887
Myocardial Physiology of Growth Differentiation Factor Signaling	93.837	1R01HL169291-01		7,763	-
Neuronal and vascular interactions in the CNS	93.837	5R01HL153261-04		776,331	-
NHLBI Summer Training Experience to Increase Diversity in Health-Related Research	93.837	5R25HL121029-09		115,225	-
Novel pathways controlling macrophage inflammation and resolution in atherosclerosis	93.837	5R01HL148137-04		779,955	101,755
Precision Cardiovascular Medicine for Multi-Ethnic Populations	93.837	5K01HL138259-04		167,836	-
Statistical Methods for Integrative Analysis of Large-Scale Multi-Ethnic Whole Genome Sequencing Studies and Biobanks of Common Diseases	93.837	5R01HL163560-02		443,452	-
The Effects of Early Psychosocial Deprivation on Cardiometabolic Risk in Early Adulthood	93.837	5R01HL151848-03 REVISED		533,407	437,103
The role of mitochondrial DNA mutations in chemotherapy induced cardiomyopathy	93.837	3F32HL154644-04S1		69,250	-
Training in Interdisciplinary Pulmonary Sciences	93.837	5T32HL007118-45		(855)	-
Total for Assistance Listing Number 93.837				**10,272,720**	**3,654,195**
COVID-19: Lung-on-a-Chip Disease Models for Efficacy Testing	93.838	5UH3HL141797-05 (REVISED)		(8,437)	-
Function and application of lung surfactant proteins	93.838	5R01HL150520-04		287,811	194,617
Integrating polygenic and environmental risk factors for asthma in diverse populations	93.838	1F31HL167378-01 REVISED		13,618	-
Investigating the effects of airway injury on the alveolar compartment of the lung.	93.838	5F31HL159919-02		34,136	-
Lung-on-a-Chip Disease Models for Efficacy Testing	93.838	5UH3HL141797-05 (REVISED)		170,894	-
Neural-Epithelial Encoding of Airway Senses	93.838	5F32HL156583-03 REVISED		68,760	-
Physics of bronchial epithelial unjamming	93.838	5R01HL148152-04		339,674	-
Predicting Pulmonary and Cardiac Morbidity in Preterm Infants with Deep Learning	93.838	5K01HL141771-06		155,131	-
Training in Interdisciplinary Pulmonary Sciences	93.838	5T32HL007118-48		498,060	-
Total for Assistance Listing Number 93.838				**1,559,647**	**194,617**
Self-Assembling Peptide Nanoparticles for in vivo Genome Editor Delivery to Hematopoietic Stem Cells	93.839	1F31HL167533-01		2,262	-
Cap-Dependency in Hematopoietic Stem and Progenitor Cell Translation	93.839	5F31HL158020-03		32,069	-
DNA Damage Repair Pathways Play a Critical Role in Myeloid Differentiation	93.839	5F31HL159913-02 REVISED		33,675	-
Erythrocyte maturation through global remodeling of the proteome	93.839	5R01HL153970-03		543,227	253,274
Mechanisms of DNA interstrand cross-link repair	93.839	5R01HL098316-12		757,427	-
Recognition of Orphan Ribosomal Subunit Proteins by the Ubiquitin-Proteasome System	93.839	5F31HL157976-03		34,077	-
Single-Cell Profiling and Lineage Tracing of Zebrafish Hematopoiesis	93.839	5F30HL152628-04		51,970	-
Stem Cell-Niche Interactions in the Establishment of Hematopoietic Stem Cell Heterogeneity	93.839	5F31HL149154-03		4,306	-

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Structure and Function of the VWF Helical Tubule Required for Hemostasis	93.839	5F30HL162128-02 REVISED		39,060	-
Understanding the role of Id2 in T cell differentiation and activation during GVHD	93.839	5F31HL156288-03		31,249	-
Total for Assistance Listing Number 93.839				**1,529,322**	**253,274**
PRIMECare Trial: Preventing Ischemic Heart Disease with mHealth, electronic decision support, and Community Health Workers	93.840	5R01HL149912-03		864,912	407,912
Project Title: PROSPECT: Puerto Rico Observational Study of Psychosocial, Environmental, and Chronic Disease Trends	93.840	5R01HL143792-05		593,808	447,496
Simulation Modeling and Disparities in Obesity and Chronic Disease	93.840	5R01HL146625-04		311,628	-
Total for Assistance Listing Number 93.840				**1,770,348**	**855,408**
The role of mechanical stimulation in macrophage-mediated skeletal muscle regeneration in an in vitro injury model	93.846	5F31AR075367-04 (REVISED)		6,620	-
BMP2 Regulation of Periosteal Function	93.846	5R01AR077432-04		665,525	-
Characterization of the Insulin to Autophagy Pathway in Muscles	93.846	5R01AR057352-14		441,314	-
Development, Evaluation and Translation of Robotic Apparel for Alleviating Low Back Pain	93.846	1UH2AR076731-01		(18)	-
Development, Evaluation and Translation of Robotic Apparel for Alleviating Low Back Pain	93.846	4UH3AR076731-02 (REVISED)		1,243,519	201,656
Elucidation of the Role of Creb5 in Synovial Joint Formation	93.846	5R01AR074385-04 REVISED		511,392	-
Epigenetic regulation of skeletal patterning and morphogenesis during development	93.846	5K01AR069197-05 REVISED		3,704	-
Interdependence of lineages within the mammalian skin	93.846	5R01AR070825-05 (REVISED)		117,401	-
Investigating modes of cartilage cell size regulation and fate during endochondral ossification	93.846	3F32AR076187-03S1		(2,999)	-
Mechanism of action of PTH: New signaling components that regulate bone formation and bone marrow fat	93.846	5R01AR073774-03 REVISED		596,810	105,073
Mechanistic and Therapeutic Studies of Initiation and Expansion for Genetic and Acquired Heterotopic Ossification	93.846	5K99AR078929-02		92,151	-
Molecular architecture of the human knee joint and pelvis at single cell resolution	93.846	1R01AR081274-01A1		47,592	-
Molecular Mechanism of Wnt/Planar Cell Polarity Signaling	93.846	5R01AR070877-05 REVISED		415,153	-
Muscle Tregs in health and disease	93.846	5R01AR070334-08		569,899	-
Nerve-stem cell interactions during skin homeostasis and wound repair	93.846	5F32AR079252-03		67,187	-
Rapid functional genetics to study stem cell-niche interactions in the skin	93.846	5R01AR080110-02 (REVISED)		612,613	-
Real-time quantification of muscle-tendon dynamics for individualized and adaptive robot-assisted locomotion	93.846	5R21AR076686-02		136,319	8,619
Regulation and function of CCR2 on T cells in Rheumatoid Arthritis	93.846	1F31AR082658-01		4,524	-
The role of ALK4 signaling in skeletal homeostasis and pathogenesis	93.846	1R01AR081061-01A1		177,224	-
The Role of Creb5 in Maintaining Synovial Joint Homeostasis	93.846	5R01AR076562-02		474,606	-
The role of GGPS1 and CYP1A1 mutations in atypical femoral fracture	93.846	5R21AR076687-02 REVISED		129,234	-
The role of notochord derived signaling, mechanical force generation and AF derived Tgfβ signaling on intervertebral disc formation	93.846	5F32AR076226-03		71,261	-
Uncovering the Genetic Mechanisms Behind Joint-Specific Osteoarthritis	93.846	5R01AR070139-05 REVISED		570,695	277,998
Total for Assistance Listing Number 93.846				**6,951,726**	**593,346**
Adipose-tissue Tregs: important players in immunological control of metabolism	93.847	2R01DK092541-13		146,501	-
Adipose-tissue Tregs: important players in immunological control of metabolism	93.847	5R01DK092541-12		368,280	-
Aire, a zinc-finger protein that controls autoimmunity	93.847	5R01DK060027-20 REVISED		(10,406)	-
Aire, a zinc-finger protein that controls autoimmunity	93.847	5R01DK060027-22		554,790	-
Automated Glucose Regulation to improve Diabetes Control and Outcomes for Pregnant Women with Type 1 Diabetes and Fetus	93.847	5R01DK120358-03 (REVISED)		229,986	112,060
Bacterial metabolites controlling Th17 and Treg cells	93.847	5R01DK110559-08		971,469	-
Central circuitry controlling micturition	93.847	5R01DK114834-04		8,731	-
Characterization of a G Protein-Coupled Receptor Implicated in Intestinal Lipid Homeostasis of Drosophila melanogaster.	93.847	5F31DK130254-02 REVISED		35,343	-
Charting human islet maturation via combined soft nanoelectronics and single-cell spatial transcriptomics	93.847	3DP1DK130673-03S1		921,573	250,599
Control of Telomere Homeostasis by Nucleotide Metabolism in Hematopoiesis	93.847	1F30DK135340-01		4,524	-
Controlled release of RNA-targeting therapy to promote healing of diabetic ulcers	93.847	5F30DK130564-02		53,822	-
Coordination of Energy Metabolism Across Individual Tissues in Mammals	93.847	5R00DK117066-05REVISED		7,511	-
Defining Mechanisms of Dynamic mTORC1 Regulation in the Liver with Fasting and Feeding	93.847	5F31DK128873-02		31,327	-

The accompanying notes are an integral part of this schedule.

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Dietary Biomarkers Development Center at Harvard University	93.847	5U2CDK129670-02REVISED		1,056,785	339,293
Dissecting the molecular mechanisms underlying lipotoxicity in the kidney	93.847	5F31DK126252-03		30,697	-
Drosophila as a model to study modifiers of Cystic Fibrosis	93.847	5F32DK130290-02		68,454	-
Effect of Arrestin Domain-Containing 4 Protein on Glucose Metabolism	93.847	5F32DK126289-02 (REVISED)		67,396	-
Elucidating mechanisms of SIRT1 activation	93.847	5R01DK100263-05		(23,810)	-
Elucidating the role of the microbiome in inducing gut permeability and inflammation	93.847	5K99DK128503-02		92,020	-
Engineering scalable collecting duct networks for functional kidney tissue	93.847	5F32DK131821-02		62,214	-
Ex Vivo Generation of Functional Kidney Tissues for Transplantation	93.847	5UC2DK126023-04		714,871	421,548
Examining the role of succinate-SUCNR1 signaling in skeletal muscle remodeling following exercise	93.847	5F31DK128924-03		34,595	-
FOOD-BASED BIOMARKERS, DIET QUALITY, AND CARDIOMETABOLIC HEALTH	93.847	5R01DK120870-05		551,963	292,590
Gating of Leptin Transport into the Cerebrospinal Fluid at the Choroid Plexus	93.847	5F30DK131642-02		38,307	-
Hemoglobin A1c variability as a risk factor for diabetes complications	93.847	5R01DK114098-04 REVISED		132,963	107,261
High-throughput dissection of transcriptional regulation in kidney disease	93.847	4K00DK126120-03		58,034	-
Human Gut Microbiome and Incident Diabetes Risk in U.S. Populations	93.847	5R01DK126698-03REVISED		361,943	215,167
Identifying an implementation strategy to maximize the public health nutrition impact of the Child and Adult Care Food Program	93.847	5K01DK125278-03		169,067	-
Identifying targetable apoptotic vulnerabilities for the treatment of AL amyloidosis	93.847	5R01DK125263-04		393,898	-
Investigating mechanical regulation of nephrogenesis using viscoelastic biomaterials and kidney organoids	93.847	1F32DK134115-01		53,745	-
Investigating the role of PHD3 in lipid homeostasis	93.847	5R01DK127278-03		450,627	-
Investigation of the role of TMED9 in the accumulation of a mutant protein in MUC1 Kidney Disease (MKD)	93.847	5F30DK127546-03		34,093	-
Lifestyle Interventions, Metabolites, Microbiome, and Diabetes Risk	93.847	5R01DK127601-03		650,159	423,220
Lipid droplets and transcriptional regulation of metabolism	93.847	5R01DK124913-03Revised		46,416	-
Mapping protein communication between organs in homeostasis and disease	93.847	5R01DK121409-05		1,413,163	1,007,522
Molecular Mechanisms of Arrestin-Domain Containing Proteins in Metabolism	93.847	5R01DK126688-03		603,521	-
Molecular mechanisms of sensory transduction in the gut	93.847	5R00DK115879-04		(79)	-
Nociceptor neuron regulation of gastrointestinal barrier protection and host defense	93.847	5R01DK127257-03 REVISED		433,627	-
PTH resistance and marrow adipogenesis	93.847	5R01DK112374-04		6,362	-
Robust methods for missing data in electronic health records-based studies	93.847	5R01DK128150-03		475,788	136,956
Role of Adipokine FABP4 in Glucoregulation and Counter Regulatory Responses	93.847	5R01DK123458-04REVISED		643,867	-
Saliva and Plasma Metabolomic Signatures of Diabetes Progression in a Hispanic Cohort	93.847	5R01DK120560-03REVISED		556,236	104,303
Training Grant in Academic Nutrition	93.847	5T32DK007703-27		392,542	-
Training Program in Molecular Metabolism	93.847	5T32DK128781-03		107,994	-
Total for Assistance Listing Number 93.847				**13,000,909**	**3,410,519**
A Facility to Generate Connectomics Information	93.853	5U24NS109102-05 (REVISED)		912,154	-
A new model system for adult neurogenesis	93.853	5R21NS127312-02		264,803	-
A quantitative framework for understanding endosomal trafficking networks in Alzheimer’s disease	93.853	5R01NS110395-05		400,115	-
Action and interaction of ionotropic and metabotropic neurotransmission	93.853	5R37NS046579-19 REVISED		639,443	-
Anatomical and Functional Characterization of Gastrointestinal to Spinal Cord Circuits	93.853	1F31NS129103-01		36,104	-
Architecture and function of striatal dopamine signaling machinery	93.853	5R01NS103484-06		484,641	-
Area postrema neurons that mediate nausea-associated behaviors	93.853	5R01NS122767-02		693,944	-
Biomarkers and risk factors for prodromal Parkinson’s disease and its progression	93.853	5R01NS126260-02		415,248	37,852
Cerebellar Outputs Through an Unconventional Nucleus	93.853	5K99NS110978-02 REVISED		(12,341)	-
Characterizing a spectrum of mosaic variation in the population and across neurological disorders	93.853	5F31NS113414-03		2,153	-
Characterizing Population Differences between Clinical Trial and Real World Populations	93.853	5K99NS114850-02 REVISED		41,120	-
Contextual Representation of Tactile Information in Mouse Primary Somatosensory Cortex	93.853	5K99NS119739-02 REVISED		43,485	-
Development, Validation, and Application of a Stroke Policy Simulation Model	93.853	5R01NS104143-05		401,593	193,034
Diagnosing the Unknown for Care and Advancing Science (DUCAS)	93.853	1U2CNS132415-01		15,339	-

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Dissecting the Forward Trafficking of Presynaptic Voltage Gated Calcium Channels	93.853	1F31NS127399-01A1 REVISED		17,582	-
Dissecting the role of the direct and indirect pathways in moment-to-moment action selection	93.853	5F31NS113385-03		4,306	-
Distributional reinforcement learning in the brain	93.853	4R01NS116753-02		587,345	-
Distributional value coding and reinforcement learning in the brain	93.853	5F31NS124095-02		34,179	-
Divergence of tactile processing in the dorsal column nuclei	93.853	1F31NS124097-01A1		29,830	-
Dopaminergic regulation of spatial learning	93.853	1R01NS129647-01		259,906	-
Dynamics of cellular brain metabolism using mass spectrometry imaging	93.853	5R01NS126248-02		526,165	188,600
Effects of abnormal early experience on IT circuitry	93.853	1R01NS123778-01		699,578	37,084
Electrical Stimulation of Immediate Early Genes	93.853	5R01NS028829-34		590,522	-
Elucidating cutaneous mechanosensory circuits, from development to disease	93.853	5R35NS097344-07		895,631	-
Elucidating mechanisms of ATXN2 interaction with TDP-43 in human motor neuron models of Amyotrophic Lateral Sclerosis	93.853	5F31NS122138-02 REVISED		26,434	-
Functional analysis of whole-brain dynamics in learning	93.853	5R01NS115484-04 (REVISED)		520,145	217,617
Gasdermin-Driven Cell Death and Immune Activation in Parkinson's Disease	93.853	5F31NS122292-02 REVISED		24,399	-
Genetic and neural mechanisms underlying emerging social behavior in zebrafish	93.853	1R01NS124017-01		1,285,418	68,509
Hippocampal sharp-wave ripple and replay mechanisms underlying long-term memory	93.853	1F32NS129560-01 REVISED		17,535	-
HMS/BCH Center for Neuroscience Research	93.853	5P30NS072030-09 REVISED		2,400	-
Identifying and Correcting Dementia-Associated Changes in the Blood-Brain Barrier	93.853	1R01NS117407-01		645,582	-
Investigating a role for dopamine in organizing behavioral sequencing	93.853	5F31NS122155-02 REVISED		26,790	-
Investigating descending control of walking	93.853	1K99NS129759-01		86,192	-
Ion Channel Pharmacology for Pain and Epilepsy	93.853	5R35NS127216-02		342,600	-
Mechanisms and functions of synapses and circuits	93.853	5R35NS097284-07		1,076,457	-
Mechanisms of seizure resistance in a mouse genetic model with altered metabolism	93.853	5R01NS102586-05 REVISED		155,658	-
Mechanisms Regulating the Specification and Differentiation of Unique Types of Cholinergic Neurons During Development	93.853	5F32NS120936-03		69,947	-
Mechanisms underlying neuronal enhancer specification during postnatal CNS development	93.853	5R01NS115965-04		591,523	-
Mechanosensory feature extraction for directed motor control	93.853	5R01NS101157-05		484,161	-
Megaplexed Neuronal Visualization Using Combinatorial Labeling and Iterative Staining	93.853	5R01NS112716-02 (REVISED)		(137)	-
Metabolic coupling of neuronal ion transport	93.853	5F32NS116105-03 REVISED		1,381	-
microRNA-Mediated Mechanisms Essential for the Structural Plasticity of Drosophila Glutamatergic Synapses	93.853	1R56NS124811-01A1		507,891	-
Mind The Gap: Addressing	93.853	5UE5NS128294-02		62,830	-
miRNA Control of Synaptic Stability and Structural Plasticity	93.853	5F99NS115341-02 (REVISED)		4,340	-
Molecular and circuit mechanisms of nausea-associated behaviors	93.853	1K99NS129758-01 REVISED		93,114	-
Molecular and functional characterization of the cells and circuits underlying the fever response	93.853	5K99NS114107-02 (REVISED)		36,268	-
Molecular and genetic dissection of brain circuits controlling fever	93.853	5R01NS112399-04		524,932	-
Molecular Controls over Neurogenesis, Subtype Development, and Diversity of Cortical Output Projection Neurons	93.853	5R01NS045523-16 (REVISED)		(2,714)	-
Molecular Development and Diversity of Callosal Projection Neurons	93.853	5R01NS104055-04		421,600	-
Molecular Dissection of Active Zone Functions in Neurotransmitter Release	93.853	5R01NS083898-10		446,729	-
Molecular mechanisms for co-assembly of endocytic and exocytic machineries at a synapse	93.853	1K99NS129959-01		56,608	-
Molecular mechanisms of neuron motility and axon guidance	93.853	2R56NS069913-11 REVISED		175,586	-
Molecular mechanisms of neuron motility and axon guidance	93.853	2RF1NS069913-11A1		42,233	-
Molecular mechanisms of somatostatin interneuron diversity	93.853	1F31NS130915-01 REVISED		18,142	-
molecular mechanisms of the blood brain barrier function and regulation	93.853	5R35NS116820-04		1,551,370	-
Molecular principles of neuronal maturation and integration in the adult and aging brain	93.853	5R01NS103758-05		420,782	90,559

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Motion Sequencing for All: pipelining, distribution and training to enable broad adoption of a next-generation platform for behavioral and neurobehavioral analysis	93.853	5U24NS109520-04		574,872	-
Neural circuits underlying the acquisition and control of motor skills	93.853	5R01NS099323-07		422,256	-
Neural correlates of Sleep Homeostasis	93.853	1R01NS119227-01A1 REVISED		(7)	-
Neurodevelopmental Function of TBC1D7: A Core Component of the TSC Complex	93.853	1R21NS126952-01A1		174,644	-
Neuron-oligodendrocyte communication underlying myelin distribution in the neocortex	93.853	5R01NS128117-02		347,562	-
Novel Targets that Modulate Multiple Adult Models of ALS in Drosophila	93.853	1R21NS123207-01		177,493	-
Odor trail tracking: a new paradigm to unveil algorithms and neural circuits underlying active sensation and continuous decision making	93.853	1RF1NS128865-01		549,371	-
Parietal cortex networks for sensorimotor processing during navigation	93.853	5R01NS089521-09		942,449	-
Peripheral activity-dependent and molecular mechanisms that control somatosensory system development	93.853	5K99NS124993-02		83,542	-
Precision Mapping of Midbrain and Striatum Networks	93.853	8K00DA058542-02		44,306	-
Principles of multi-whisker stimulus integration in rodent somatosensory cortex	93.853	5K00NS105186-05		51,576	-
Prospective study of vitamin D and MS risk in African Americans	93.853	5R01NS103891-04		460,639	215,045
Regulation of PINK1 and PARKIN-dependent mitophagy	93.853	5R01NS083524-19		538,720	-
Sensorimotor processing, decision making, and internal states: towards a realistic multiscale circuit model of the larval zebrafish brain	93.853	5U19NS104653-05		1,102,875	875,518
Sexual Dimorphism Among Glia in the Nervous System	93.853	5F31NS122139-03		33,022	-
Single-cell computation in auditory brainstem and its impact on cortical coding and behavior	93.853	4R01NS118402-02		1,136,604	837,201
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		690,847	-
Structural variation in neuronal circuits as a basis for functional and behavioral individuality	93.853	1R01NS121874-01		1,201,099	348,118
Structure and function of the mouse parafasicular and entopeduncular nuclei	93.853	5R01NS103226-05		3,705	-
Studying perceptual decision-making across cortex by combining population imaging, connectomics, and computational modeling	93.853	5R01NS108410-05		801,813	-
Systematic and functional analysis of alternative mRNA splicing in an in vivo model of learning	93.853	1R21NS121825-01A1		186,988	-
Systems-level and in situ transcriptomics deconstruction of neural circuits underlying sensorimotor transformation in an innate behavior	93.853	1RF1NS116593-01 REVISED		1,353,897	-
The Development and Integration of Early Born SST-Expressing	93.853	5R01NS081297-10		375,124	-
The diversity of dopamine neurons: from connectivity and activity to functions	93.853	5R01NS108740-05		343,380	-
The encoding of uncertainty in the Drosophila compass system	93.853	1R34NS123819-01 REVISED		438,371	-
The Heart and the Mind: An Integrative Approach to Brain-Body Interactions in the Zebrafish	93.853	2U19NS104653-06 (REVISED)		3,495,044	156,833
The Impact of Telestroke on Patterns of Care and Long-Term Outcomes	93.853	3R01NS111952-04S1		407,125	169,875
The role of mechanosensory activity in the transcriptional maturation of primary somatosensory neurons	93.853	1F32NS129589-01 REVISED		26,889	-
The role of sciatic nerve inflammation in diabetic neuropathy	93.853	1F31NS127357-01 REVISED		32,026	-
The virtual rodent: a platform to study the artificial and biological control of natural behavior	93.853	5F99NS125834-02		34,222	-
Towards a unified framework for dopamine signaling in the striatum	93.853	3U19NS113201-04S1		3,272,715	713,460
Two-photon all-optical electrophysiology in behaving mice	93.853	1RF1NS126043-01		501,832	-
Visuomotor coordinate transformation during Drosophila chasing behavior	93.853	1F31NS130782-01 REVISED		20,404	-
Voltage-Dependent Ion Channels Controlling Firing Patterns of Central Neurons	93.853	5R01NS036855-25 REVISED		878,165	-
Total for Assistance Listing Number 93.853				**38,402,611**	**4,149,305**
Structural Basis for Translation Initiation in Leishmania Major	93.855	5R21AI156087-02		229,381	-
Using genetics and multi-scale imaging to understand the mechanisms underlying mycobacteriophage host choice	93.855	5R21AI156772-02		203,811	72,138
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	4U01AI135940-06		265,676	110,727
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	5U01AI135940-05REV		1,384,695	1,149,115
Acquisition, maintenance, and transmission of antibiotic resistance in Neisseria gonorrhoeae	93.855	5F32AI145157-03		13,179	-
Bacteriology PhD Training Program	93.855	5T32AI132120-05		37,414	-
Biostatistics/Epidemiology Training Grants in AIDS	93.855	5T32AI007358-34 REVISED		520,621	-
Botswana-Harvard T.H. Chan School of Public Health AIDS Initiative Partnership CTU	93.855	5UM1AI069456-17REVISED		1,783,334	1,436,688
Bridging Statistical Inference and Mechanistic Network Models for HIV/AIDS	93.855	5R01AI138901-05		519,234	-

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Cell envelope synthesis and antibiotic resistance in Staphylococcus aureus	93.855	5F32AI150002-03 REVISED		35,390	-
Cell surface biogenesis in Streptococcus pneumoniae	93.855	5R01AI139083-05		307,837	-
Characterizing a Serine-Threonine Phosphatase Essential for Asexual Replication in Plasmodium falciparum	93.855	5F31AI157041-02 REVISED		33,527	-
Characterizing the Genomic Basis of Immune-Mediated Resilience Against Tuberculosis in an Admixed Peruvian Population	93.855	5F30AI157385-02		32,789	-
Characterizing the Plasmodium falciparum Subpellicular Network	93.855	1F31AI172110-01		33,908	-
CONTROL AND ACTIVATION OF THE TUMOR NECROSIS FACTOR RECEPTORS	93.855	5R01AI150709-04 REVISED		782,575	427,599
COVID-19: Defining regulators of immunity to acute infection using CRISPR screens	93.855	3U19AI133524-05S1 REVISED		26,726	-
COVID-19: Statistical and Data Management Center (SDMC), AIDS Clinical Trials Group	93.855	5UM1AI068634-17S1REVISED		877,993	99,319
Cytotoxic T Cell Mediated Immunity to Chlamydia	93.855	5R01AI039558-27		1,094,550	-
Deep sequencing of pathogens to precisely define transmission networks using rare variants	93.855	5R01AI128344-05REVISED		548,978	113,227
Defining functional domains of a P. aeruginosa efflux pump using periplasmic nanobodies	93.855	5R21AI153471-02 REVISED		100,156	-
Defining regulators of immunity to acute infection using CRISPR screens	93.855	3U19AI133524-05S1 REVISED		1,481,763	471,151
Detection of transrenal Mycobacterium tuberculosis DNA in urine	93.855	5R03AI153554-02		9,716	-
Determining the interactions between mosquito oogenesis and Plasmodium falciparum survival and transmission	93.855	5R01AI153404-04		796,020	-
Developing a Barcoded Malaria Parasite Panel to Assess Broadly Neutralizing Antibodies	93.855	5R21AI171658-02		246,054	-
Developing comparative chemical genomics and genetic validation tools for Babesia spp.	93.855	5R21AI153945-02		(581)	-
Discovery and characterization of new bacterial cell wall targets and inhibitors to treat resistant infections	93.855	5R01AI148752-04		671,219	-
Discovery through chemical synthesis of antibiotics effective against modern bacterial pathogens	93.855	5R01AI168228-02		1,000,977	-
Dynamic Strategies for the clinical management of HIV disease	93.855	4R37AI102634-11		70,948	-
Dynamic Strategies for the clinical management of HIV disease	93.855	5R37AI102634-10		577,003	111,930
Early Infant Treatment	93.855	4U01AI114235-06 REVISED		12,698	11,950
Elucidating ligand-receptor interactions required for Plasmodium vivax blood-stage infection	93.855	5R01AI140751-05		297,750	-
Elucidating the Structural Requirements for Next-Gen Glycoconjugate Vaccines	93.855	5R01AI148273-04		563,840	-
Epidemiology of Infectious Diseases	93.855	5T32AI007535-22		259,352	-
Epitope focusing using structure-based immunogen design approaches	93.855	5F30AI160908-02 REVISED		55,980	-
Evaluating host-directed therapeutics against blood-stage malaria parasites	93.855	5R21AI166478-02		186,418	-
Expansion of research and mentoring to improve birth outcomes and treatment outcomes among HIV-affected children in Botswana	93.855	5K24AI131924-05REVISED		205,575	83,341
Exploiting membrane targets to overcome antibiotic resistance	93.855	5U19AI158028-02		2,392,483	-
Exploring the potential to improve azole efficacy against Trypanosoma cruzi by targeting glutamine metabolism	93.855	5R21AI166974-02		130,483	-
Exploring the roles of acquired immunity and functional constraint in sculpting malaria antigenic diversity in a longitudinal cohort	93.855	5R01AI141544-05		490,759	39,609
Fibroblast-mediated inflammatory resolution of rheumatoid arthritis	93.855	1F30AI174699-01 REVISED		19,864	-
Follicular helper T cells as drivers of epitope spreading	93.855	5F30AI160909-03		38,928	-
Functional analysis of epigenetic regulators of malaria blood-stage proliferation and transmission	93.855	5R01AI138551-05		220,206	-
Genetic Analysis of Toxinogenesis in Vibrio Cholerae	93.855	5R37AI018045-43		683,925	-
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		541,597	363,712
Genome-wide pooled CRISPR cell screening for the deer tick Ixodes scapularis, a vector of Lyme and other diseases	93.855	1R21AI168592-01		116,280	15,675
Genomics approaches to elucidating pathways to antibiotic resistance in Neisseria gonorrhoeae	93.855	2R01AI132606-06		9,399	-
Genomics approaches to elucidating pathways to antibiotic resistance in Neisseria gonorrhoeae	93.855	5R01AI132606-05REVISED		222,387	-
Harvard University Center for AIDS Research	93.855	5P30AI060354-19 (REVISED)		4,542,533	2,718,572
Hepatic survival and population dynamics of extraintestinal pathogenic Escherichia coli	93.855	5F31AI156949-03		34,222	-
Human adaptation and transmissibility of Mycobacterium tuberculosis genetic lineages. A genomic epidemiology study to guide TB control	93.855	5R21AI154089-02		223,338	-
Identification and analysis of compensatory mutations that support the evolution of antibiotic resistance in Neisseria gonorrhoeae	93.855	5R01AI153521-04		871,082	547,036
Identification and characterization of a comprehensive set of factors required for sporulation and germination in Bacillus anthracis	93.855	5R21AI171308-02		267,392	-
Identifying Chlamydia trachomatis factors that mediate PD-L1 upregulation	93.855	1R21AI178272-01		1,207	-

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Illuminating the immune system's genomic dark matter: functionally annotating the hidden translatome	93.855	1DP2AI169979-01		551,166	-
ImmGen: Gene Expression and Regulation in Immune Cells	93.855	5R24AI072073-15		417,667	17,084
ImmGen: Gene Expression and Regulation in Immune Cells	93.855	5R24AI072073-17		2,146,205	260,894
Incorporation of a histone variant into viral chromatin to promote herpes simplex virus replication	93.855	5F31AI145062-03		7,659	-
Infant blood epigenome and risks of IgE sensitization, obesity, and asthma: MARC-35/43 cohorts	93.855	5R01AI148338-03		463,962	206,134
Infectious cell entry pathway of human-infecting thogotoviruses	93.855	5F31AI154710-03 REVISED		28,996	-
Integrated Development and Discovery of Diagnostics for Drug Resistant Tuberculosis	93.855	5U19AI142793-05		3,010,199	1,651,788
Integrating protein structure and genomic data to predict antibiotic resistance in Mycobacterium tuberculosis	93.855	5F32AI161793-02 REVISED		57,305	-
Intravascular Immune Surveillance by Anti-viral T Cells	93.855	5R01AI155865-03		686,851	-
Investigating bacterial contributions to TB treatment response: a focus on in-host pathogen dynamics	93.855	3R01AI155765-03S1		641,796	362,067
Investigating the Integrator Complex's Role in Regulating Inflammatory Transcription	93.855	5F31AI160672-02 REVISED		32,498	-
Investigating the regulation of outer membrane homeostasis in Pseudomonas aeruginosa	93.855	5F32AI164630-02		72,749	-
Linking metabolite sensing and gene expression in malaria parasites	93.855	1R21AI168806-01A1		94,919	-
Malaria Genomic Epidemiology for Identifying Sources of Malaria Infection and Transmission	93.855	5R21AI141843-02Revised		15,390	-
Malaria parasite determinants of host cell tropism	93.855	5R01AI165755-02		524,618	144,611
Malaria transmission blocking through mosquito contact with treated surfaces	93.855	5R01AI148646-04REVISED		853,610	-
Mechanisms of macrolide synergy in Mycobacterium tuberculosis	93.855	1F31AI167560-01Revised		4,392	-
Mechanisms regulating vimentin-dependent invasion of the brain by Listeria monocytogenes	93.855	5R01AI146102-04		383,066	9,927
Modeling the Role of PrEP in Getting to Zero	93.855	1R56AI149736-01A1Revised		179,587	10,451
Molecular basis of antimalarial drug resistance in Plasmodium vivax	93.855	5R01AI168163-02		543,912	-
Molecular Basis of Spore Germination	93.855	5R01AI164647-02		557,157	-
Molecular Basis of Viral Infectivity	93.855	5T32AI007245-40		488,107	-
Molecular biology of trichomonasviruses	93.855	5R01AI132445-05		359,393	-
Neutrophil Dynamics in Nasal Mucosa	93.855	1R01AI175379-01		202,291	-
NK killing of coronavirus-infected cells	93.855	1F31AI176618-01		14,053	-
Novel Genetic Mechanism of Artemisinin Resistance for Malaria	93.855	5R01AI099105-08REVISED		124,268	-
Nuclear Sensing of Herpesviral DNA	93.855	5R01AI106934-08		476,206	-
Optimal targeting for individual and population-level TB prevention	93.855	5R01AI146555-04		714,166	84,503
Outer Membrane Biogenesis: New Antibiotic Targets	93.855	5R01AI081059-15		455,532	-
Pain and Neuro-immune Signaling in S. pyogenes pathogenesis	93.855	5R01AI130019-05 REVISED		137,326	120,555
Peptidoglycan Biogenesis in Escherichia Coli	93.855	5R01AI083365-14		507,286	101,727
Pinpointing how single-cell states affect genetic regulation of HLA expression in autoimmune diseases	93.855	5F30AI172238-02		39,014	-
Proline homeostasis: a novel mediator of drug tolerance in Plasmodium falciparum	93.855	5R01AI143723-04		708,308	190,598
Recording the role of persisters in infection relapse	93.855	1R21AI168524-01A1		179,820	-
Release of Extracellular DNA during Biofilm Formation in Staphylococcus aureus	93.855	5R01AI139011-05		450,352	-
Ribosome structure determination from Apicomplexan parasites	93.855	1R21AI178196-01		8,393	-
RNA polymerase and oxidative stress mediate ceftriaxone resistance in Neisseria gonorrhoeae	93.855	5F30AI160911-03		38,599	-
SDMC - IMPAACT Leadership Group	93.855	5UM1AI068616-17REVISED		10,973,767	5,062,356
SEAL (Stopping Atopic dermatitis and ALlergy) Study: Prevent allergy by enhancing the skin barrier	93.855	7U01AI147462-04		109,583	-
Social Epidemiology of COVID-19	93.855	5K08AI139361-04		140,872	-
Specification of Treg cells: learning from FoxP3 deficiencies	93.855	5R01AI165697-02		731,416	-
Staphylococcus aureus induced Itch and neuro-immune signaling in skin infections	93.855	5R01AI168005-02		407,514	60,569
Statistical and Data Management Center (SDMC), AIDS Clinical Trials Group	93.855	5UM1AI068634-17S1REVISED		16,462,479	7,564,845
Statistical Methods for Improving Real-Time Public Health Surveillance and Integrated Outbreak Detection	93.855	1F31AI172187-01		36,500	-
Strengthening evidence on optimal multidrug-resistant tuberculosis treatment regimens through improved epidemiologic methods	93.855	5R01AI146095-03		578,557	147,543
Structural Basis of Immune Cell Receptor Function	93.855	5R01AI037581-25		318	-
Structural understanding of the HIV-1 reverse transcription initiation process	93.855	5R01AI167684-02		449,739	63,580
Structure and Function of Tetraspanin Complexes	93.855	5R01AI172846-02		529,349	19,986

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Studies on the Biological Mechanisms of Antibiotics	93.855	5R01AI149778-20		850,096	-
T Cell Costimulatory Pathways: Functions and Interactions	93.855	5P01AI056299-19		2,455,800	1,683,795
T regulatory cell subsets at the microbial interface: determinism and function	93.855	5R01AI125603-05		17,211	-
Targeting Membrane Transport Steps in Cell Envelope Assembly	93.855	5R01AI153358-04		823,188	-
Targeting the Mitochondrion of P. falciparum	93.855	5R01AI093716-09REVISED		72,732	-
The Dynamics of DNA in Salmonella Persisters in Macrophages	93.855	1F31AI176589-01		4,524	-
The Graduate Program in Tropical Infectious Diseases (GPiTID)	93.855	5T32AI049928-20		245,438	-
The molecular mechanism of Aire	93.855	5R01AI088204-10 REVISED		63,712	-
The physiological activation and consequences of Toxin-Antitoxin systems in Salmonella	93.855	5R01AI155552-03		329,235	-
Treg cell diversity and homeostatic control	93.855	5R01AI150686-04		755,699	-
Trial of Zinc Supplements for Young Infants with Clinical Severe Infection in Tanzania	93.855	1R01AI175348-01		20,507	-
Understanding the Regulation and Biological Roles of Peptidoglycan Hydrolases in Staphylococcus aureus	93.855	5F30AI156972-03 REVISED		58,379	-
Using agent-based modeling to estimate the effectiveness of the Miami Getting to Zero HIV campaign	93.855	5K01AI138863-05Revised		9,301	-
Validating a potential interaction between error-prone polymerases and SSB as a therapeutic target for Mycobacterium tuberculosis	93.855	5R03AI159062-02		64,293	-
Viral and host mechanisms that tilt the HSV lytic/latent balance	93.855	5P01AI098681-10		2,548,046	639,101
Zika Virus in Pregnancy in Nigeria	93.855	5R21AI137840-02 REVISED		13,443	-
Total for Assistance Listing Number 93.855				**81,001,107**	**26,173,903**
Mechanistic Analysis of the Ubiquitin-Proteasome System	93.859	2R35GM127032-06		12,798	-
Mechanistic Analysis of the Ubiquitin-Proteasome System	93.859	5R35GM127032-05 REVISED		302,062	-
The genetic control of neuronal number and behavior	93.859	5K99GM146243-02		82,580	-
A novel and simple mechanism by which cells can sense enzymatic flux	93.859	1R01GM148497-01		166,129	-
A system for long-term high-resolution 3D tracking of movement kinematics in freely behaving animals	93.859	5R01GM136972-03 (REVISED)		317,461	176,993
Advancing Multiplexed Isobaric Tag-based Strategies for Proteome Profiling	93.859	5R01GM132129-04		331,175	-
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		385,881	-
An all-in-one web server for RNA structure prediction using evolutionary information	93.859	1R21GM148902-01		31,506	-
Analysis of conserved eukaryotic transcription elongation factors	93.859	5R01GM135251-03 REVISED		322,368	-
Anion Abstraction From Hypervalent Silanes: Enantioselective Synthesis of Compounds Bearing Carbon and Silicon Stereogenic Centers	93.859	5F32GM143919-02		66,796	-
Assembly and Maintenance of the Bacterial Cell Envelope	93.859	5F32GM146400-02		67,856	-
Asymmetric Nucleophilic Aromatic Substitution Enabled by Hydrogen-Bonding Catalysis	93.859	3F32GM136042-03S1 (REVISED)		67,821	-
Biophysical foundations of evolutionary dynamics	93.859	5R35GM139571-02		623,964	-
Biophysics of Nuclear Formation and Micronucleation	93.859	5F32GM131585-03		3,847	-
Broadly Applicable, Small Molecule Catalysts for Stereoselective and Site-Selective Glycosylation Reactions	93.859	5R01GM132571-04 (REVISED)		123,685	-
Catalytically Generated Amidyl Radicals for Site-Selective Intermolecular C-H Functionalization	93.859	1F32GM147975-01A1		10,760	-
Cell and Chemical Biology of Microtubules	93.859	5R35GM131753-05		806,694	-
Cell Envelope Homeostasis in Bacillus subtilis	93.859	5R01GM127399-04 REVISED		18,805	-
Characterization of silencer element-associated chromatin	93.859	5F31GM145107-02 REVISED		34,833	-
Characterization of the TBCEL-dependent Tubulin Degradation Mechanism	93.859	5F31GM142156-02		40,181	-
Chiral Complexes Designed to Catalyzed Organic Reactions	93.859	5R01GM043214-33 (REVISED)		570,696	-
Chromosome Dynamics in Bacillus Subtills	93.859	5R01GM086466-12		(8,749)	-
Chromosome organization and function in time and space: meiosis, mitosis and E.coli	93.859	5R35GM136322-04		1,051,659	109,448
Complementary Activation of Hydroxylamine Derivatives by Hydrogen-Bond Donor Catalysts to Enable Enantioselective Nitrogen-Atom Transfer Processes	93.859	5F32GM137576-03 (REVISED)		61,877	-
Deciphering the logic of glycolipid signaling at the host-microbiome interface	93.859	5R00GM130964-05		307,229	-
Decoding chromosome structure with multiplexed super-resolution microscopy	93.859	5R01GM124401-04		830,265	-
Decoding ribosome-triggered quality control mechanisms	93.859	1DP2GM137415-01		471,650	-

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Deep learning to design immune-evading viral vectors for gene therapy	93.859	1F32GM141007-01A1 REVISED		47,073	-
Defining OGT's Essential Functions to Guide Therapeutic Approaches	93.859	5R01GM094263-11 REVISED		652,352	-
Determine the mechanism of recognition of ubiquitin configurations by the 26S proteasome	93.859	3R01GM134064-04S1		317,690	-
Determining the source of missing heritability	93.859	5R01GM120122-05		(445)	-
Development, Elucidation, and Application of New Principles in Stereoselective Catalysis	93.859	1R35GM149244-01		76,674	-
Discovery of structural RNAs involved in human health and disease	93.859	1R01GM144423-01A1		240,008	-
Dissecting the establishment and regulation of human pluripotency	93.859	5P01GM099117-10		404,167	126,718
Diversity in Biomedical Sciences Via Personalized Research and Education Programs for Post-Baccalaureates	93.859	5R25GM109436-07		462,059	-
DNA-corralled nanodiscs for study of large membrane proteins and their complexes	93.859	5R01GM131401-04		298,682	197,751
Drosophila Transgenic RNAi Resource Project	93.859	5R01GM084947-12 REVISED		51,471	-
Dynamic mechanisms of transcriptional coactivator function in Notch signaling	93.859	5K99GM144750-02		113,055	-
Dynamic regulatory mechanisms of robust pattern formation in the neural tube	93.859	5R01GM107733-08		273,614	-
Dynamics, Regulation and Function of p53 in Single Cells	93.859	5R35GM139572-03 REVISED		861,680	-
Elucidating physiology of dormant bacteria to combat antibiotic persistence	93.859	5R35GM137895-03		571,613	-
Elucidating the Functional Role of Post-translational Aminoacylation in Chromatin Regulation	93.859	5F31GM143896-02 REVISED		33,567	-
Engineering fluid dynamics of cryo-plunging for improved vitrification	93.859	1R21GM146127-01		136,716	-
Epigenetic Inheritance of Heterochromatin	93.859	5R01GM072805-18 REVISED		411,785	-
Evolutionary Tradeoffs in Antibiotic Resistance	93.859	5R35GM133700-05		417,234	-
Federated and transfer learning methods for cross-ancestry and cross-phenotype integration of genomic datasets.	93.859	1R01GM148494-01		80,050	-
Feedback Control of the Cell Cycle	93.859	5R01GM043987-31		530,871	-
Function and Regulation of TRAIP at Replisome-Blocking DNA Lesions	93.859	5K99GM138763-02 REVISED		40,642	-
Functional genomics resources for the Drosophila and broader research communities	93.859	5P41GM132087-04		1,214,819	-
Furshpan and Potter Native American High School Summer Program	93.859	5R25GM129830-05		190,260	-
Genome-wide Mapping of Ribosome Occupancies with Inhibitor-Induced mRNA Covalent Labeling	93.859	1R21GM148899-01		116,268	-
Global control of co-transcriptional splicing	93.859	5R01GM136794-03 REVISED		384,574	-
Growth and differentiation in Bacillus subtilis	93.859	5R35GM145299-02		273,203	-
Harnessing intrinsic cell clocks to control growth and regeneration	93.859	5F32GM140779-02 (REVISED)		68,834	-
Harvard Chemical Biology PhD Program	93.859	5T32GM139775-02		495,350	-
Harvard Systems Biology Graduate Program	93.859	5T32GM135014-04		297,216	-
High-throughput disulfide and FRET scanning to reveal protein conformational ensembles in vitro and in vivo	93.859	5K99GM141459-02		95,470	-
High-throughput optimization of genetically-encoded fluorescent biosensors	93.859	5R01GM124038-04 REVISED		(21,717)	-
High-throughput optimization of genetically-encoded fluorescent biosensors	93.859	5R01GM124038-06		191,998	-
HPF-X: High-pressure freezing with buffer exchange	93.859	1R01GM146791-01		336,268	-
Human microbiome metabolites in health and disease	93.859	5R35GM128618-05		470,875	-
Identifying genetic pathways and cellular sources for neural regeneration in adult animals	93.859	5F31GM134633-02		1,637	-
Identifying the mechanisms of mechanosensing by the bacterial flagellar motor	93.859	5K99GM134124-02		9,784	-
Identifying the sequences and factors that govern the fate of elongating RNAPII	93.859	5R01GM139960-03		509,965	-
Illuminating molecular mechanisms of cellular functions by single-molecule and super-resolution imaging	93.859	5R35GM122487-05		(13,954)	-
Information Integration and Energy Expenditure in Eukaryotic Gene Regulation	93.859	5R01GM122928-06		415,023	-
Information Processing by Post-translational Modification	93.859	5R01GM105375-08		430,833	83,964
Interdisciplinary training: Statistical Genetics/Genomics and Computational Biology	93.859	5T32GM135117-04		385,223	-
Investigating DNA end-processing during non-homologous end joining	93.859	1F32GM143844-01A1 REVISED		67,443	-
Investigating molecular mechanisms and cellular functions of genomic imprinting	93.859	5R35GM146921-02		461,521	-
Joint Program in Molecules, Cells, and Organisms	93.859	5T32GM135143-03 (REVISED)		590,179	-
Lipotoxic Protective Response of the Endoplasmic Reticulum	93.859	5R01GM141050-02REV		68,001	-
Mapping Structure-Activity Relationships of Chemical Inhibitors via Genome- Editing	93.859	1DP2GM137494-01		322,535	-

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Maximizing Investigator's Research Award	93.859	5R35GM127136-05 (REVISED)		341,239	-
Measuring and modeling the dynamics of patterning in human stem cells	93.859	5R01GM131105-04 (REVISED)		156,783	-
Mechanism of Divalent Metal Transport by Nramp-Family Transporters	93.859	3R01GM120996-07S1		430,678	-
Mechanism of yeast gene regulation	93.859	5R35GM131801-05		797,827	-
Mechanisms of Lipid Droplet Formation	93.859	5R01GM124348-06REVISED		100,526	-
Mechanisms of Lipid Droplet Protein Targeting	93.859	5R01GM097194-12Revised		33,000	-
Mechanoregulation of Ciliary Motility	93.859	5R01GM141109-03		457,475	-
Medical Scientist Training Program	93.859	3T32GM007753-43S3		(11,405)	-
Medical Scientist Training Program	93.859	3T32GM144273-02S1		2,859,365	-
Microbial Adaptation and the Statistics of Epistasis and Pleiotropy	93.859	5R01GM104239-09		(17,162)	-
Microbial Adaptation and the Statistics of Epistasis and Pleiotropy	93.859	5R01GM104239-11		564,259	-
MIDAS Center for Communicable Disease Dynamics	93.859	5U54GM088558-10REV		(59,414)	-
Mitonuclear coordination of gene expression across complex cellular states using mitoribosome profiling	93.859	5F32GM139244-03		67,519	-
Molecular Biophysics Training Grant	93.859	5T32GM008313-35		593,724	-
Molecular mechanisms by which mild elevation of mitochondrial superoxide extends lifespan	93.859	5R01GM121756-04 REVISED		(999,778)	-
Molecular mechanisms of cell fate determinant assembly	93.859	5R01GM143611-02		167,387	-
Molecular Mechanisms of Integrative Signal Transduction	93.859	5R35GM142697-03		587,083	-
Molecular tuning of sensory systems in octopus	93.859	5F32GM148163-02		60,384	-
Molecular, Cellular and Developmental Dynamics PhD Program	93.859	3T32GM007226-46S1		51,786	-
Molecular, Cellular, and Developmental Mechanisms	93.859	5T32GM145407-02		926,283	-
mRNA Capping Enzyme	93.859	5R01GM056663-24 REVISED		485,960	11,023
Multi-nuclear Iron Clusters as Biomimics of Nitrogenase Enzyme Metallocofactors	93.859	1F32GM145088-01A1		53,540	-
New approaches to measuring and containing the spatial spread of human pathogens	93.859	5R35GM124715-05		25,552	-
New Sample Multiplexing Technologies to Identify Chemical Probes and Illuminate Ubiquitin Biology	93.859	5R01GM067945-20		460,718	-
Next Generation Solution NMR Techniques for GPCR Structure, Dynamics and Function	93.859	5R01GM129026-04		146,716	-
Noise, memory, and adaptation in the flagellum system in E.coli.	93.859	5R01GM134275-02		(1,085)	-
Novel strategies for high-specific multiplexed imaging of genomic interactions by signal amplification	93.859	1F32GM140783-01A1		16,303	-
Polynuclear iron complexes as functional mimics of the nitrogenase FeMo-cofactor	93.859	5R01GM098395-09		9	-
Prions in the bacterial domain of life	93.859	5R35GM136247-04		364,693	-
Probing the specificity and activity of the metazoan Integrator complex	93.859	5R01GM134539-04		678,974	370,316
Program in Genetics and Genomics PhD Training Grant	93.859	5T32GM141745-02		486,318	-
Protein Transport Across Membranes	93.859	5R01GM052586-28 REVISED		416,557	-
Reconstitution of heterochromatin and gene silencing in vivo	93.859	5K99GM137045-02 REVISED		19,596	-
Regulation of Proteasome Activity	93.859	5R35GM145246-02		419,340	-
Regulation of translesion synthesis by the bacterial replisome	93.859	5R01GM114065-08 REVISED		348,150	-
RNA Processing Machines in Biology and Disease	93.859	5R35GM122524-07		365,098	-
Robust, Generalizable, and Fair Machine Learning Models for Biomedicine	93.859	3R35GM142879-02S1 REVISED		712,415	-
Selective Oxidation of Primary C-H Bonds Using Late-Transition-Metal-Oxo Catalysts	93.859	1F32GM145065-01 (Revised)		64,925	-
Sending and receiving Hedgehog and Wnt signals	93.859	3R01GM122920-06S1		302,060	-
Sending and receiving Hedgehog signals	93.859	5R01GM122920-04 REVISED		(473)	-
Small regulatory RNA functions in the nucleus	93.859	5R01GM088289-13		385,731	-
Spatiotemporal Regulation of Liquid-like Condensates in the Germline	93.859	5R01GM132286-04 REVISED		123,107	-
Structural and Functional Roles of the Membrane-Related Components of Single-Pass Membrane Proteins	93.859	5R35GM140887-02 REVISED		179,576	-
Structural characterization of single, double and triple-headed axonemal dyneins	93.859	5R01GM143183-02		399,667	-

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Structure-Function Studies of Ribonucleotide Reductase	93.859	5R01GM047274-31 (REVISED)		383,330	-
Synaptonemal complex assembly and function in meiosis	93.859	3R01GM072551-17S1 REVISED		436,052	42,537
Systematic elucidation of allele specific proteome at Imprint Control Regions	93.859	5R01GM135377-04		405,814	-
The biosynthesis of N–N bond-containing natural products	93.859	5R01GM132564-04 (REVISED)		518,140	-
The dynamics and underlying mechanisms controlling cell size and canonical Wnt signaling	93.859	3R35GM145248-02S1		642,666	-
The genetics and genomics of reinforcement	93.859	5R35GM142742-03		533,334	-
The origin, the function and the phenotypic impact of human alleles	93.859	5R35GM127131-04		996,910	-
The RNA polymerase II transcription initiation complex	93.859	5R01GM046498-32		361,711	-
Training in Pharmacological Sciences	93.859	5T32GM132089-05		373,346	-
Transcriptional Activator Complex of the Mammalian Circadian Clock	93.859	5R01GM129275-04		460,244	-
Transcriptome-Scale,Condition-Specific Regulation of mRNA Isoform Stability Via the 3'UTR	93.859	5F32GM140555-02 REVISED		17,416	-
Transducing Hedgehog signals across the plasma membrane	93.859	5R01GM135262-03		404,850	-
Trapping reactive intermediates and their application towards catalysis	93.859	5R01GM145752-02 (REVISED)		365,934	-
Uncovering the substrate recognition mechanisms of the E3 ligase adaptor cereblon	93.859	5R01GM141406-02		447,767	-
Understanding the link between sleep deprivation and oxidative stress	93.859	5R01GM138872-03		449,582	-
Using a new regenerative model system to elucidate mechanisms for stem cell regulation	93.859	5R35GM128817-05		492,383	-
Visualizing DNA break repair: single-molecule studies of non-homologous end joining	93.859	5R01GM115487-08		331,552	-
Total for Assistance Listing Number 93.859				**41,666,032**	**1,118,750**
16th International Conference on Limb Development and Regeneration	93.865	1R13HD104440-01		43,041	2,923
A population-based online study of the transition of young adults with perinatal HIV infection to adult clinical care	93.865	5R01HD089853-05REV		120,888	13,243
Botswana Birth Outcomes Surveillance Extension	93.865	5R01HD095766-05		459,429	372,105
Closing Research Gaps in Antiretroviral Treatment for Pregnant Women and Infants Living with HIV	93.865	5P01HD107670-02		977,994	775,192
Comparative Safety of Non-Insulin Agents in Pregnant Women with Pregestational Diabetes	93.865	5R01HD097778-05		580,530	152,988
Culling the human genome of disease variants using ultraconserved elements	93.865	5R01HD091797-05 REVISED		(1,421)	-
Descending engagement of brainstem neuronal circuits that govern orofacial motor behaviors	93.865	5K99HD096512-02 REVISED		27,472	-
Determining lineage decisions and gene regulatory networks governing the generation of key progenitor cell types during early human brain development	93.865	5R01HD100036-04		696,323	-
Development of a Modular Soft Exosuit Platform Suitable for Community-Based Neurorehabilitation	93.865	5R01HD088619-06 (REVISED)		164,620	26,153
Development of children's language comprehension using ERPs during natural listening	93.865	5R03HD097629-02 REVISED		30,950	-
Developmental mechanisms of posterior axis termination in vertebrates	93.865	5F31HD104316-03		34,288	-
Does neurotransmitter plasticity of para-serotonergic neurons augment autoresuscitation following perinatal stress and buffer SIDS risk	93.865	5R01HD100823-03		597,127	249,784
Engaging and Supporting Fathers: A Parenting Intervention to Improve Early Child Development in Tanzania	93.865	5K99HD105984-02		147,400	-
Enhancing Assisted Reproductive Technologies with Deep Learning and Data Visualization	93.865	5R01HD104969-03		753,778	34,400
Examining distinct and shared mechanisms underlying arithmetic and reading development through behavioral and neural measures: a longitudinal investigation	93.865	5R01HD103358-03		843,908	31,421
Health Outcomes around Pregnancy and Exposure to HIV/ARV (HOPE): Extending the Reach of PHACS to Examine Women’s Health	93.865	5R01HD101351-03		2,566,892	1,706,492
Human iPSC-derived ovarian follicles as a model of female reproduction	93.865	1F31HD108898-01A1 (REVISED)		27,841	-
IDENTIFYING ROADBLOCKS TO LIMB REGENERATION	93.865	5R01HD095494-05		282,079	-
Illuminating the distribution of extreme evolutionary constraint in the human genome from fetal demise to severe developmental disorders	93.865	1F31HD111109-01		20,248	-
Integration of Mechanical Forces and Signaling in the Morphogenesis of the Gut	93.865	5R01HD089934-05		(272)	-
Intergenerational impact of maternal trauma history on preschoolers' behavioral health outcomes: Assessing links with caregiving sensitivity and DNA methylation	93.865	5R01HD102342-03		576,606	275,968
Language Input as a Mechanism Underlying Socioeconomic Disparities in Neurocognitive Development	93.865	1K99HD103873-01 (REVISED)		(33)	-
Leveraging Causal Inference and Machine Learning Methods to Advance Evidence-Based Maternal Care and Improve Newborn Health Outcomes	93.865	1F30HD111284-01 REVISED		15,415	-
Life history of the menstruating uterus	93.865	1DP2HD111708-01 (REVISED)		408,179	-
Long-term health consequences of birth by cesarean section	93.865	5R01HD093761-05		344,167	236,421

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Harvard University
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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
Mapping the signaling landscape of vertebrate development at single cell resolution	93.865	5R01HD096755-05		541,406	-
Maternal Exposure to Childhood Abuse and Disparities in Offspring Neurodevelopment: Identifying Mechanisms	93.865	5R01HD094725-04		1,094,874	472,381
Mechanisms modulating cell identity in regenerative mammalian epithelia	93.865	5R00HD101021-05 (REVISED)		237,639	-
Metabolic control of global gene expression during the Maternal-to-Zygotic Transition	93.865	5F32HD095590-02 REVISED		(624)	-
Methods for High-Dimensional Statistical Inference and Individualized Risk Prediction under Semi-Competing Risks	93.865	5F31HD102159-02		2,245	-
mHealth-Community Health Worker tool for comprehensive post-cesarean follow-up in rural Rwanda	93.865	5R21HD103052-02		197,792	74,153
Microcircuits underlying murine parental behavior	93.865	5R01HD082131-09		492,463	-
Pediatric HIV/AIDS Cohort Study (PHACS) 2020	93.865	5P01HD103133-03		18,350,112	13,899,978
Pediatric HIV/AIDS Cohort Study (PHACS) Data and Operations Center	93.865	5U01HD052102-15 REVISED		189,537	141,979
Proteomics of Cell Signaling in Embryogenesis	93.865	5R01HD091846-09		(21,289)	-
Sex, Physiological State, and Genetic Background Dependent Molecular Characterization of Circuits Governing Parental Behavior	93.865	1K99HD108801-01A1		29,777	-
Signals and mechanical forces controlling radial gut morphogenesis	93.865	5R01HD087234-07		236,405	-
Systems Analysis of cell type differentiation in Xenopus development	93.865	3R01HD073104-10S1		348,274	-
The Development and Nature of the Processes that Underlie the Representation of Center-embedded, Recursive Structures	93.865	5F32HD101208-03 (REVISED)		11,099	-
The neurodevelopmental mechanisms linking environmental experience and executive function	93.865	5K99HD099203-02 (REVISED)		5,014	-
The reprogramming of limb progenitor cells	93.865	5R01HD032443-25		(23,457)	-
The Role of Hypothalamic Pituitary - Adrenal Axis Dysregulation in Preterm Birth	93.865	5R21HD102822-02REVISED		96,213	29,027
The role of neurovascular interactions in the development and regulation of the blood-brain barrier	93.865	5K99HD103911-02 REVISED		114,594	-
The Training Program in Reproductive, Perinatal, and Pediatric Life Course Epidemiology	93.865	5T32HD104612-03		266,807	-
Total for Assistance Listing Number 93.865				**31,886,330**	**18,494,608**
(R37 Merit Extension) SIRT1 as a regulator of health and lifespan of mammals	93.866	5R37AG028730-15		77,220	-
A National Analysis of the Extent and Value of Medicare Advantage Physician Networks	93.866	5R01AG068122-03		328,318	91,193
A novel method to identify regulators of biological aging based on high-throughput sequencing of epigenetic clocks	93.866	5F99AG073499-02		31,940	-
A Research Mentoring Program in Geriatric Rehabilitative Care	93.866	5K24AG069176-08		125,011	18,242
Aging Memory	93.866	3R01AG008441-30S1 REVISED		280,707	-
Alteration of sleep and cortical parvalbumin interneurons in mouse model of Alzheimer's disease	93.866	5K01AG068366-03		116,036	-
Apoptotic Regulation and Neuroinflammation in Alzheimer's Disease	93.866	1F32AG077861-01		54,351	-
Assessment of Health-Related Work Capacity to Improve Independence of Older Adults	93.866	5R01AG046290-08		325,554	81,701
Behavioral, molecular, and functional dissection of corticospinal neurons in motor performance deficits of physiological and pathological aging	93.866	1F30AG074598-01A1 REVISED		39,014	-
Cell Non-autonomous Regulation of Aging via Neuronal TORC1	93.866	5R01AG059595-05		272,914	-
Characterizing the landscape of cell-type specific changes associated with Alzheimer's disease before death with single-cell genomics	93.866	5F30AG069446-04		51,666	-
Circulating Plasma Metabolites, Lifestyle Factors, and Mortality Risk	93.866	5R21AG070375-02 REVISED		203,140	-
Cis proline directed proteotoxicity in the early development and therapy of traumatic brain injury and vascular dementia	93.866	1K99AG076739-01		85,430	-
Cognitive Function, Alzheimer's Disease and Related Disorders in the HAALSI Cohort	93.866	5R01AG054066-05		1,028,434	608,365
Comparing hospitalization rates, outcomes, and treatment intensity for elderly patients across OECD countries	93.866	5R01AG058878-03		555,176	289,505
Controlling oscillations to treat Alzheimers disease targeting the basal forebrain parvalbumin system	93.866	5K99AG066819-02 REVISED		107,943	-
Deciding about Dialysis: Improving Decision-Making Among Older Adults with ESRD	93.866	3K23AG049088-05S1		95,780	-
Defining the pathogenic relationship of TDP-43 inclusions and cytoplasmic double stranded RNA in AD and FTD	93.866	1RF1AG078377-01 REVISED		642,084	292,045
Development of a Predictive Frailty Clock and Longitudinal Investigation of its Epigenetic Determinants	93.866	5K99AG070102-02 REVISED		27,676	-
Direct and Indirect Effects of GDF11 in the Aging Central Nervous System	93.866	5R01AG072086-04		765,866	-
Disability among Older Low-Skilled Workers	93.866	5R01AG056239-05		18,914	16,501
Dissecting the modulatory functions of interleukin-17 in Alzheimer's Disease	93.866	1RF1AG080738-01		146,080	-
Effects of Job Quality in the Service Sector on Health-Related Outcomes Across the Life Course	93.866	5R01AG066898-03		479,044	74,223
Elucidating SHIP1 in microglia in health and disease	93.866	5F31AG063398-03 REVISED		2,196	-
Epidemiologic, imaging and pathological studies of the role of blood pressure variability in dementia etiology	93.866	4R00AG071742-03		94,355	-

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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
Epidemiologic, imaging and pathological studies of the role of blood pressure variability in dementia etiology	93.866	5K99AG071742-02		87,345	-
Epigenetic Reprogramming to Counteract Neuronal Aging and Degeneration	93.866	5K99AG068303-02 REVISED		117,437	-
Exploration of MRI measures of neurodegeneration within individuals over short intervals	93.866	5R01AG067420-04		672,252	45,416
Frailty, Statins, and Cardiovascular Disease Burden in Older Adults	93.866	5R03AG060169-02 REVISED		85,223	78,436
Health and Aging in Africa: Longitudinal Studies of an INDEPTH Community	93.866	5P01AG041710-08 REVISED		1,270,486	433,663
Health and Human Capital over the Life Course	93.866	5R01AG056238-05		67,643	55,311
Health, Aging and Dementia in South Africa: A Longitudinal Study (HAALSI)	93.866	2P01AG041710-09		93,724	-
Identifying Targets for Interventions to Improve Functional Ability to Work over the Life Course	93.866	1R01AG078301-01A1		7,304	-
Impact of social cohesion on functional recovery after earthquake and tsunami	93.866	5R01AG042463-10		678,067	283,003
Improving Medicare in an Era of Change	93.866	3P01AG032952-14S1		2,262,945	150,761
Improving the quality of care provided through bundled payments for patients with Alzheimer's Disease or Other Forms of Dementia or Frailty	93.866	5R01AG060935-03REV		502,736	133,728
Intimate Partner Violence and Dementia Risk: Applying Lifecourse and Gender Analysis	93.866	1F31AG080869-01REVISED		22,611	-
Investigating GDF11 and MSTN as candidate circulating geronic factors	93.866	5R01AG057428-04 (REVISED)		267,372	-
MD-PhD Training Program in Aging and the Social/Behavioral Sciences	93.866	5T32AG051108-07		184,251	-
Mechanisms of Aging Regulation by Neuronal mTORC1 in C. elegans	93.866	5F31AG076296-02		33,397	-
Mechanisms of Intermittent Fasting and Longevity in C. elegans	93.866	5F31AG066458-03Revised		18,276	-
Mechanisms of stem cell aging that contribute to clonal outgrowth in head and neck tissues	93.866	5F32AG071208-03		69,070	-
Mechanisms Specific to the Beneficial Effects of Dietary Restriction	93.866	5R01AG044346-09		422,744	-
Molecular mechanisms linking epigenetic changes to longevity	93.866	3K99AG065508-02S1REVISED		61,949	-
Multifunctional tough adhesive hydrogels to recruit, expand, and deliver tendoncells during aging and injury	93.866	3K99AG065495-02S1		58,327	-
Muscle regulatory T cells in exercise and aging	93.866	5F32AG072874-03		70,105	-
National Cohort Studies of Alzheimer's Disease, Related Dementias and Air Pollution	93.866	5R01AG066793-03		885,088	16,170
Neurobehavioral phenotyping of AD model mice using Motion Sequencing	93.866	1RF1AG073625-01		1,076,562	-
Neuronal Circuit Maintenance in Healthy Aging	93.866	3K99AG064042-02S1		75,074	-
Novel Age-Dependent DNA Modifications	93.866	5R01AG063341-05		242,025	123,559
Nuclear transport as a molecular and cellular vulnerability in AD	93.866	1R21AG072516-01		308,208	169,313
Physician Subspecialization and the Health and Health Care of Older Americans	93.866	5R01AG076580-02		183,639	35,544
Post-Acute Care Referral and Outcomes for Patients with Alzheimer's Disease and Related Dementias	93.866	1R56AG062544-01A1 REVISED		6,598	-
Private Medicare Plans and Health Outcomes for Older Adults	93.866	5K01AG073583-03		122,581	-
Quality control of mislocalized membrane proteins	93.866	5R01AG073277-02		481,437	-
Rapid Longitudinal MRI to Detect Hippocampal Neurodegeneration in Early-Stage Alzheimer's	93.866	4K00AG068432-03 (REVISED)		57,787	-
Regulation and function of Growth Differentiation Factor 11 during development and aging	93.866	5R01AG048917-05 (REVISED)		7,336	(1)
Regulation of cortical circuit formation by subcellular compartmentalization of mRNA translation	93.866	5F32AG067661-02		70,244	-
Reverse Engineering of Cell Senescence	93.866	5R01AG073341-02		852,355	1,592
Reversing Loss of Metabolic Homeostasis to Ameliorate Alzheimer's Disease Pathogenicity	93.866	5R01AG067106-04		539,228	-
Role of epigenetic decay in cell senescence and aging	93.866	5R01AG019719-13 REVISED		271,074	-
Selective neuronal autophagy in phosphorylated tau degradation and Alzheimer's disease	93.866	1F31AG082393-01		2,262	-
Slow-wave activity as a modifier of the progression of neurodegeneration in Alzheimer's disease	93.866	1RF1AG061774-01 REVISED		152,962	81,818
Targeting REST in Alzheimer's Disease	93.866	5R01AG069042-03		776,795	33,128
Targeting RNA homeostasis to promote healthy aging	93.866	5R01AG051954-04REVISED		(385)	-
The Changing Landscape of Post-Acute Care and Health Outcomes for Older Adults	93.866	3K23AG058806-04S1REVISED		252,513	-
The confluence of extreme heat cold on the health and longevity of an Aging Population with Alzheimers and related Dementia	93.866	1RF1AG074372-01A1		630,703	142,776
The Longitudinal Aging Study in India	93.866	5R01AG042778-05REV		267,662	267,662
The Longitudinal and Dynamic Effects of Food Insecurity on Cognitive Impairment and Dementia Risk	93.866	5R01AG079286-02		301,311	105,835

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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
The role of mitochondrial dysfunction in age-related disease: a human genetic approach	93.866	5F30AG074507-02 REVISED		38,820	-
The Role of Nuclear Transport Dynamics in Metformin's Geroprotective Effects	93.866	5R36AG072073-02 REVISED		55,278	-
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	5R01AG075507-02		499,209	-
Training in the Molecular Biology of Neurodegeneration and Alzheimer's Disease	93.866	2T32AG000222-31		242,544	-
Training in the Molecular Biology of Neurodegeneration and Alzheimer's Disease	93.866	5T32AG000222-30 REVISED		374,098	-
Ubiquitin-mediated proteolysis and cell cycle control	93.866	2R01AG011085-30		17,414	-
Ubiquitin-mediated proteolysis and cell cycle control	93.866	5R01AG011085-29		411,205	228,177
Uncovering the Human Secretome	93.866	5DP1AG058605-05		790,288	-
Understanding Roles for Protein Homeostasis Machinery in Aging Brain Vasculature	93.866	5F32AG079593-02		56,762	-
Use of prescription opioids following surgery and associated adverse patient outcomes in older adults	93.866	5R56AG059620-02		132,068	6,779
Writing and erasing O-GlcNAc on target proteins in the brain	93.866	1RF1AG081475-01		14,007	-
Total for Assistance Listing Number 93.866				**23,202,865**	**3,864,445**
A novel mechanism for synapse localization in the retina	93.867	5R21EY032392-02 REVISED		69,211	-
AAV Induced Toxicity in the Eye	93.867	5R01EY029348-05		339,981	-
Characterizing and Remediating Recollection-Specific Face Recognition Deficits in Developmental Prosopagnosia	93.867	5R21EY031000-02		19,712	316
Cognitive and Neural Representations of Reachable Environments	93.867	5R21EY031867-02		102,539	-
CORE GRANT FOR VISION RESEARCH	93.867	5P30EY012196-25		755,248	80,428
Defining mechanisms for natural vision in the primate brain with machine learning	93.867	1DP2EY035176-01 REVISED		369,833	-
Determination of Cone Photoreceptor Fate	93.867	5R01EY029771-05		198,412	-
Development of domains in inferotemporal cortex	93.867	5R01EY025670-07		604,540	59,724
Elucidating the molecular and cellular mechanisms underlying cone survival in the peripheral retina in mouse models of Retinitis Pigmentosa	93.867	5K99EY032110-02 REVISED		53,458	-
HIGH THROUGHPUT SINGLE CELL TRANSCRIPTOMIC APPROACH TO IDENTIFY SUSCEPTIBLE CELL TYPES AND GENE EXPRESSION CHANGES IN HUMAN GLAUCOMA	93.867	5R21EY032219-02 (REVISED)		24,649	-
Investigation of the Mechanisms of Cone Degeneration in Retinitis Pigmentosa	93.867	3K99EY030951-02S1		(5,815)	-
Protein ticker-tapes for brain-wide neural recordings	93.867	5R21EY033669-02		375,498	-
Research Training in Visual Neuroscience	93.867	5T32EY007110-35		136,776	-
Reverse Correlation Mapping in Face Patches	93.867	5R01EY016187-15		81,902	-
Structure and Interactions of Conformational Intermediates in gamma-D Crystallin Aggregation, and Their Targeting for Cataract Prevention	93.867	5R01EY030444-04		407,947	-
The role of lineage in the temporospatial genesis of retinal bipolar cell subtypes	93.867	1K99EY034603-01		39,692	-
Ultrastructural Analysis of a Form of Macular Degeneration - Macular Telangiectasia	93.867	3R21EY030255-02S1		102,269	-
Total for Assistance Listing Number 93.867				**3,675,852**	**140,468**
Biases introduced by filtering electronic health records for patients with complete data	93.879	5R01LM013345-03		371,609	23,636
BIC TRAIN - Biomedical Informatics COVID-19 Training	93.879	5T15LM007092-30		441,379	-
Biomedical Informatics and Data Science Research Training Program (BIRT)	93.879	5T15LM007092-32		722,378	-
Methods for generalizing inferences from cluster randomized controlled trials to target populations	93.879	5R01LM013616-02		253,002	49,216
Semi-supervised Approaches to Denoising Electronic Health Records Data for Risk Prediction	93.879	5R01LM013614-03		402,219	215,114
Total for Assistance Listing Number 93.879				**2,190,587**	**287,966**
Academic Units for Primary Care Training and Enhancement	93.884	6 UH1HP29962 05 03		15,043	-
Primary Care Training and Enhancement Program	93.884	4 T0BHP29997 05 02		150,775	148,076
Total for Assistance Listing Number 93.884				**165,818**	**148,076**
Dietary Patterns and Risk of Cardiovascular Disease	93.897	5R01HL060712-19		116,504	32,187
Total for Assistance Listing Number 93.897				**116,504**	**32,187**
HRSA-Ryan White DRP 2022	93.924	6T22HA46955 01 01		5,484	-
Total for Assistance Listing Number 93.924				**5,484**	**-**
2/2-GEOHealth Health Effects of Selected Environmental Exposomes Across the Life CourSe (HEALS)-US	93.989	5U2RTW010108-07		48,964	-
Ethiopia Global Infectious Diseases Training Program	93.989	5D43TW011386-04		231,508	55,863
Feasibility of a community-engaged social marketing strategy to reduce HIV-related stigma and improve health among young people	93.989	1R01TW012394-01		118,707	16,113
Identifying genetic determinants of Rotavirus Vaccine Failure in Malawian Children	93.989	5K01TW010853-05		171,833	65,000
Launching Future Leaders in Global Health (LAUNCH) Research Training Program	93.989	5D43TW010543-07		1,192,482	11,440
Partnership for Global Health Research Training Program	93.989	5D43TW010543-05		188,813	25,703

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Telemedicine to improve the diagnosis of surgical site infections post-cesarean delivery in rural Rwanda	93.989	3R21TW011229-02S1		(4,830)	(4,830)
Training in HIV Genomics, Treatment, and Cure Research in Botswana	93.989	2D43TW009610-		72,630	-
Training in HIV/AIDS Prevention and Treatment Research in Botswana	93.989	5D43TW009610-10		230,056	178,864
Training Tanzanian Researchers for HIV/AIDS Implementation Science	93.989	2D43TW009775-06		(7)	-
Training Tanzanian Researchers for HIV/AIDS Implementation Science	93.989	5D43TW009775-07		232,025	147,158
Total for Assistance Listing Number 93.989				**2,482,181**	**495,311**
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		4,068	-
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		33,502	-
Human Organ Chips for Radiation Countermeasure Development	93.RD	75F40119C10098		1,826,566	322,241
Identifying Information Needs and communication Channels for researching at-risk populations during Emergencies	93.RD	75D30118C03566		114,166	2,500
Immune Mechanisms of Protection against Mycobacterium tuberculosis Center (IMPAc-TB)	93.RD	75N93019C00071		8,839,683	7,306,374
Long-term transgenerational health impacts of maternal obesity and gestational diabetes and their determinants	93.RD	HHSN275201600003I		271,323	-
Total for Assistance Listing Number 93.RD				**11,089,308**	**7,631,115**
Total for DHHS Direct Award Research and Development Cluster				**416,019,181**	**106,324,344**
Environmental Protection Agency					
Improving chemical mechanisms for regional/global models in support of US air quality management: application to the GEOS-Chem model	66.509	84001401		207,136	-
Regional Air Pollution Mixtures: The Past and Future Impacts of Emission Controls and Climate Change on Air Quality and Health	66.509	83587201		267,042	229,239
Total for Assistance Listing Number 66.509				**474,178**	**229,239**
Total for EPA Direct Award Research and Development Cluster				**474,178**	**229,239**
Institute of Museum and Library Services					
Software Citation Implementation: Action Plan Development	45.312	LG-246387-OLS-20		46,261	-
Total for Assistance Listing Number 45.312				**46,261**	**-**
Total for Institute of Museum and Library Services Direct Award Research and Development Cluster				**46,261**	**-**
Library of Congress					
Teaching Language and Literacy as an Act of Resistance	42.010	GA21C0096		49,037	-
Total for Assistance Listing Number 42.010				**49,037**	**-**
Total for Library of Congress Direct Award Research and Development Cluster				**49,037**	**-**
NASA					
21-XRP21-0010; MINERVA: A Dedicated, Global, Precise Radial Velocity Machine for Follow-up Observations of Transiting Planets V	43.001	80NSSC22K0233		103,868	56,081
A comprehensive state-of-science GEOS-Chem capability for atmospheric chemistry in the GEOS Earth System Model (ESM) and Data Assimilation System (DAS) at GMAO	43.001	80NSSC17K0134		(15,579)	-
A First Opportunity to Test Models of Atmospheric Escape for a Terrestrial Exoplanet	43.001	HST-GO-15704.002-A		(7)	-
A Homogeneous, Global Analysis of all Kepler and K2 Planets	43.001	80NSSC19K1014		99,121	-
Accelerated Expansion of the Early and Late Universe: Bridging Observations and Consistent Theories	43.001	80NSSC20K0506		15,510	-
Application of continuous ground-based remote sensing to analysis of OCO-2/3 XCO2 and SIF data in mosaic landscapes	43.001	80NSSC21K1069		112,158	-
Ca, K, Nd and Mg isotopic heterogeneities in the Solar System	43.001	80NSSC20K0346		362,788	-
Characterization and optimization of CdZnTe low energy threshold for the HREXI SmallSAT Prototype	43.001	80NSSC20K1537		4,048	-
Combining Satellite and In Situ Trace Gas Observations to Quantify the Stratospheric Circulation	43.001	80NSSC21K0943		208,725	-
Constraining Terrestrial Biosphere Model Predictions of Current and Future Carbon Fluxes with GEDI Waveform Lidar Measurements of Above-Ground Ecosystem Structure	43.001	80NSSC21K0197		202,892	20,884
Constraining the Late-Time Light Curve Behavior of Three Diverse Superluminous Supernovae	43.001	HST-GO-15162.002-A		27,522	-
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		279,269	-
Cosmic Storytelling with NASA Data: Tools for Exploring Data Science	43.001	80NSSC21M0002		675,676	46,267
Decoding the Isotopic Fingerprints of Solar System Volatiles: A Laboratory Investigation of Isotopic Fractionation Chemistry in Interstellar Ice Analogs	43.001	80NSSC21K0382		151,920	-
Development and deployment of an Autonomous Biogeochemical Instrument for In Situ Studies (the ABISS)	43.001	NNX17AB31G		41,428	-
Development of a Through Silicon Via (TSV)-enabled HREXI Detector Module (HDM)	43.001	80NSSC22K1892		239,287	3,972
Dynamics and Chemistry of the Summer Stratosphere	43.001	80NSSC19K0326		658,501	-
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		32,514	-
From Gravitational Wave Sources to Massive stars: a comprehensive framework to infer binary and cosmic evolution from future Gravitational Wave Catalogs	43.001	80NSSC22K1601		49,966	-
High-Cadence Radiative Transfer Modeling on Galactic Scales	43.001	HST-HF2-51475.001-A		(3,487)	-
HREXI prototype for 4piXIO	43.001	80NSSC22K0246		118,618	-
HREXI prototype for 4piXIO	43.001	NNX17AE62G		(9,008)	-
Imaging the transition of SN 1987A to SNR 1987A	43.001	HST-GO-15256.002-A		(2,789)	-

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Improved characterization of the tropospheric NO2 background for retrieval and interpretation of NO2 columns from satellites: application to interpret the long-term OMI record over the US in terms of NOx emissions and their trends	43.001	80NSSC20K0930		95,804	-
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 formaldehyde and glyoxal	43.001	80NSSC21K1443		51,019	-
Improving sub-seasonal temperature, precipitation, and hydrological forecasts over North America through online bias correction	43.001	80NSSC22K1837		129,272	-
Knitting Together the Milky Way: An Integrated Model of the Galaxy's Stars, Gas, and Dust	43.001	80NSSC21K0634		143,336	-
Laboratory Kinetics and Spectroscopic Studies of Halogens and Nitrogen Oxides in Support of the NASA Panel for Data Evaluation	43.001	80NSSC18K1063		49,723	-
Laboratory Kinetics, Photochemistry, and Data Evaluation in Support of the NASA Data Panel	43.001	80NSSC21K1052		139,889	-
Measurements of atmospheric trace species and greenhouse gases (CO2 , CH4 , CO , N2O) from airborne and balloon platforms	43.001	80NSSC21K1200		252,029	-
Metasurfaces for Compact, Next-Generation Polarimetric Remote Sensing of Aerosols and Clouds	43.001	80NSSC20K0318		326,969	-
Modeling the Turbulent Evolution of Galaxies over Cosmic Time	43.001	HST-HF2-51445.001-A		31,353	-
Quantifying and Partitioning the Global Methane Budget Using Satellite and Ground Based Measurements Of CH4 and Tracers of Its Sources and Sinks	43.001	80NSSC20K0009		56,951	-
Radial Velocity Measurements With Harps-N To Uncover The Formation Pathway Of Keystone Planets Around M Dwarfs	43.001	80NSSC22K0166		47,503	-
Rapid Observations of Short-Duration Gamma-Ray Bursts: Accurate Positions Hold the Key to the Progenitor Population	43.001	GO1-22059X		3,804	-
Reassessing Martian dynamo history using high-resolution paleomagnetic imaging and updated orbital magnetometry	43.001	80NSSC22K0135		78,280	4,540
Red Supergiant Binaries on the Path to Becoming Gravitational Wave Events	43.001	HST-HF2-51516.001-A		66,874	-
Simulating Luminous Black Hole Accretion Disks and Coronae	43.001	80NSSC22K0817		36,110	-
Support, development, and applications of the GEOS-Chem atmospheric chemistry module in the GEOS ESM	43.001	80NSSC23K0489		29,313	-
The 9th International GEOS-Chem Meeting (IGC9)	43.001	80NSSC19K0410		1,067	-
The 10th International GEOS-Chem Meeting (IGC10)	43.001	80NSSC22K0698		26,504	-
The Chemistry of Planet Formation: A JWST-ALMA Survey of 4 Planet-Forming Disks	43.001	JWST-GO-02025.001-A		28,931	-
The Milky Way in a Bottle: Realizing the promise of Galactic surveys	43.001	80NSSC20K1536		48,291	-
The Physical Origin Of The Rocky/Enveloped Transition Around Mid-To-Late M Dwarfs	43.001	80NSSC22K0296		151,275	-
Understand predictability and improve prediction of atmospheric blocking and associated extreme weathe	43.001	80NSSC17K0267		(387)	-
Using Linear Mixed Effects Modeling to Improve Stability of Total Solar Irradiance Reconstructions	43.001	80NSSC19K1327		9,882	-
UV to NIR Study of the First Robust Pulsational or Pair Instability Supernova Candidate and its Low Metallicity Environment	43.001	HST-GO-15863.002-A		33,147	-
Total for Assistance Listing Number 43.001				**5,189,880**	**131,744**
Accelerated Computational Design of Multifunctional Polymeric Materials with Machine Learning Dynamics	43.012	80NSSC20K1189		52,508	-
Developing a multi-scale understanding of the kinetics of dehydration and rehydration in a model cellular food system	43.012	80NSSC19K1146		73,464	-
Sole Source, NASA Open Innovation Research	43.012	80NSSC23M0003		30,560	-
Total for Assistance Listing Number 43.012				**156,532**	**-**
Anatomy of an ionized bubble at z equals 6.6: Which galaxies reionized the Universe	43.RD	JWST-GO-01933.002-A		54,452	-
The ever-changing face of SN 1987A	43.RD	HST-GO-16265.002-A		24,393	-
The Role of Physical Processes and the Environment in Star Formation	43.RD	HST-HF2-51506.001-A		106,371	-
The Stellar and Gas Content of Galaxies at Cosmic Noon	43.RD	JWST-GO-01810.002-A		41,423	-
UDF medium band survey: Using H-alpha emission to reconstruct Ly-alpha escape during the Epoch of Reionization	43.RD	JWST-GO-01963.009-A		2,961	-
Where Cosmic Dawn Breaks First: Mapping the Primordial Overdensity Powering a z~9 Ionized Bubble	43.RD	JWST-GO-02279.001-A		75,627	-
Total for Assistance Listing Number 43.RD				**305,227**	**-**
Total for NASA Direct Award Research and Development Cluster				**5,651,639**	**131,744**
National Endowment for the Arts					
Cambridge Rindge and Latin School Partnership	45.024	1884048-44-21		(47)	-
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		6,622	-
Dare to Know: Prints and Drawings in the Age of Enlightenment	45.024	1887443-44-22		20,000	-
Total for Assistance Listing Number 45.024				**26,575**	**-**
Total for National Endowment for the Arts Direct Award Research and Development Cluster				**26,575**	**-**
National Endowment for the Humanities					
Conservation Junior Fellowship Program	45.149	PE-284340-22		109,661	-
Total for Assistance Listing Number 45.149				**109,661**	**-**
Annotated Translation of Peach Blossom Fan (1699), a Classic of the Chinese Stage written by Kong Shangren	45.160	FEL-282569		62,210	-
Total for Assistance Listing Number 45.16				**62,210**	**-**
The Amendments Project: Rewriting the U.S. Constitution	45.164	MT-284709-22		27,446	-
Total for Assistance Listing Number 45.164				**27,446**	**-**
Bogoraz’s Itelmen Notebooks	47.075	PD-260979-18		8,800	-
Total for Assistance Listing Number 47.075				**8,800**	**-**
Total for National Endowment for the Humanities Direct Award Research and Development Cluster				**208,117**	**-**
National Science Foundation					
CAREER: Optimization, Control, and Incentive Design for Power Networks with High Levels of Distributed Energy Resources	47.041	ECCS-1553407		2,941	-

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Collaborative Research: Droplet-based selection to improve aflatoxin detoxification	47.041	CBET-2103538		102,616	-
Collaborative Research: Integrated memristor neural networks for in-situ analysis of intracellular neuronal recordings	47.041	ECCS-1915984		2,118	-
Collaborative Research: Programming non-linear waves in compliant mechanical metamaterials	47.041	CMMI-2041440		154,309	-
Collaborative Research: Use of Wearable Sensors to Track Muscle-Tendon Loading during Exosuit Assisted Locomotion	47.041	CBET-2019580		196,008	-
CPS: Medium: An AI-enabled Cyber-Physical-Biological System for Cardiac Organoid Maturation	47.041	ECCS-2038603		311,462	47,378
EAGER: Combining van der Waals heterostructures and superlattices: new approach to 2D tunable optoelectronic devices	47.041	ECCS-2015668		52,694	-
EAGER: Robotic Optic Technologies for Adaptive, Dynamic Lighting Applications	47.041	IIP-2133202		(11,111)	-
EFRI C3 SoRo: Textile Robotics: Integrative Design, Modeling, Manufacture, and Control of Soft Human-Interactive Apparel	47.041	EFMA-1830896		169,016	169,016
EFRI NewLAW: Topological Mechanical Metamaterials Science	47.041	EFMA-1741685		155,511	155,275
FW-HTF: Collaborative Research: The Next Mobile Office: Safe and Productive Work in Automated Vehicles	47.041	CMMI-1839870		14,754	-
I-Corps Teams: Tough Adhesive Hydrogels	47.041	IT-2040400		14,851	-
I-Corps: Algorithm-Hardware Co-Design for Large-Scale Machine Learning	47.041	TI-2137080		14,597	-
I-Corps: Soft Robotic Toolkit for Students and Researchers	47.041	TI-2121958		1,186	-
Kinetics and stability of redox-active organics for electrochemical systems	47.041	CBET-1914543		(34,338)	-
Mid-infrared reconfigurable pulse generators	47.041	ECCS-2221715		71,090	-
NNCI: The Center for Nanoscale System (CNS) at Harvard University	47.041	ECCS-1541959		222,739	-
NNCI: The Center for Nanoscale System (CNS) at Harvard University	47.041	ECCS-2025158		1,154,219	-
NRI: INT: Wearable Robots for the Community: Personalized Assistance using Human-in-the- loop Optimization	47.041	CMMI-1925085		64,348	60,431
Total for Assistance Listing Number 47.041				**2,659,010**	**432,100**
2020 Waterman Award	47.049	CHE-2038059		182,972	-
2021 Alan T. Waterman Award	47.049	DMS-2140043		129,825	-
A Theory of Learned Representations in Artificial and Natural Neural Networks	47.049	DMS-2134157		469,300	-
Admissible Lagrangians, Fukaya categories, and homological mirror symmetry.	47.049	DMS-1937869		18,407	-
Arithmetic Geometry and Applications	47.049	DMS-1902158		(1,688)	-
ATD: Collaborative Research: Causal Inference with Spatio-Temporal Data on Human Dynamics in Conflict Settings	47.049	DMS-2124463		56,670	-
CAREER: Adapting the fluid projection method to model elasto-plastic materials	47.049	DMS-1753203		71,826	-
CAREER: Beyond Conditional Independence: New Model-Free Targets for High-Dimensional Inference	47.049	DMS-2045981		49,535	-
CAREER: Extreme climate perturbations by meteorite impacts and volcanism on terrestrial planets	47.049	AST-1847120		119,733	-
CAREER: Learning Probabilistic Factor Models	47.049	DMS-1943902		82,003	-
CAREER: Manipulating Barocaloric Effects in Two-Dimensional Perovskites	47.049	DMR-2238113		73,195	-
CAREER: Nanobody technology to decipher the essential roles of O-GlcNAc in cells	47.049	CHE-1942574		137	-
CAREER: Observing topological magnetoelectric effects by magneto-optics and quantum transport	47.049	DMR-2143177		147,694	-
CAREER: Randomness in Number Theory and Beyond	47.049	DMS-2052036		74,901	-
CAREER: Stochastic effects in the microbial cell cycle: from single-cell level variability to population growth	47.049	PHY-1752024		77,117	-
CAREER: Towards Particle Physics Discoveries With Double Cascades In IceCube and Beyond	47.049	PHY-2239795		1,269	-
CAS: Collaborative Research: Electronic Structure/Function Relationships in Base Metal Complexes Spanning the Oxo/Oxene and Imide/Nitrene Continuum	47.049	CHE-1954690		(13,266)	-
CDS and E: AAG: Glupyter: Enabling multi-dimensional linked data visualization with glue in the browser	47.049	AST-1908419		23,806	-
CDSE:Collaborative Research: Development and Application of Machine Learning Classification of Optical Transients	47.049	AST-2108531		21,973	-
Center for Integrated Quantum Materials	47.049	DMR-1231319		5,055,281	2,640,051
Classification and invariants for Borel equivalence relations	47.049	DMS-2246746		43,291	-
Collaborative Research: Bayesian and Semi-Bayesian Methods for Detecting Relationships in High Dimensions	47.049	DMS-2015411		39,207	-
Collaborative Research: DMREF: Design of Superionic Conductors by Tuning Lattice Dynamics	47.049	DMR-2119351		143,464	-
Collaborative Research: Elements: Enriching Scholarly Communication with Augmented Reality	47.049	OAC-2209623		60,297	-
Collaborative Research: Exploring the physics of galaxy clusters with comprehensive cosmological simulations	47.049	AST-1815978		2,482	-
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		372,863	-
Collaborative Research: Imaging the Beginning of Time from the South Pole: Completing the BICEP Array Survey	47.049	OPP-2220446		941,419	-
Collaborative Research: MFB: Deciphering the Logic of PTM Crosstalk via Novel Chemical Technology: Histones and Beyond	47.049	2127882		495,180	244,668
Collaborative Research: MINERVA - A dedicated, global, precision radial velocity machine for TESS	47.049	AST-2007811		99,539	-
Collaborative Research: Multiscale engineering of active stress in biomaterials	47.049	DMR-2004380		123,884	-
Collaborative Research: Novel statistical tools for metagenomics and metabolomics data	47.049	DMS-1903139		113,484	-
Collaborative Research: Pioneering planet formation chemistry with ALMA	47.049	AST-1907832		125,940	-
Collaborative Research: The Heavy Metal Survey: Stellar Metallicities and Chemical Abundance Patterns of Massive Galaxies out to z~2.3	47.049	AST-1908748		45,626	-
Collaborative: Isotopologue Synthesis and Use for Elucidating Important Chemical Mechanisms of Organic Condensation Reactions in Atmospheric Particles	47.049	CHE-2003368		77,763	-
Completion of Scanning, Data Releases and Optimization of Analysis and Database for DASCH	47.049	AST-1910561		5,710	-
Complex Dynamics and Diophantine Geometry	47.049	DMS-2050037		61,139	-
Complex Dynamics and Moduli Spaces	47.049	DMS-1903764		151,884	-

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Conference: Current Developments in Mathematics	47.049	DMS-1933415		9,246	-
DMREF: Collaborative Research: Digital Magnetic Handshake Materials, Structures, and Machines	47.049	DMR-1921619		77,535	-
DMREF: Collaborative Research: The Search for Novel Superconductors in Moire Flat Bands	47.049	DMR-1922172		81,636	-
DMREF: Hydrogel-actuated cellular soft robotic materials with programmable mechanical properties	47.049	DMR-1922321		520,945	141,653
DMS-EPSRC Collaborative Research: Advancing Statistical Foundations and Frontiers for and from Emerging Astronomical Data Challenges	47.049	DMS-2113615		79,353	-
EAGER-QAC-QCH: Hybrid Quantum-Classical Algorithm for NMR Inference	47.049	CHE-2037687		135,100	-
EAGER: Physics of Living Systems Teacher (PoLST) Network: Increasing Student Conceptual Understanding of High School Physics	47.049	PHY-2016294		17,019	-
EAGER:SUPER: Optically-enhanced superconductivity in hydrogen-based materials	47.049	DMR-2132338		147,281	43,557
Foundations of Data Science Institute	47.049	DMS-2023528		125,738	-
FRG: Collaborative Research: Definability and Computability over arithmetically significant fields	47.049	DMS-2152149		55,452	-
FRG: Collaborative Research: Dimers in Combinatorics and Physics	47.049	DMS-1854316		43,845	-
FRG: Collaborative Research: Geometric and Topological Methods for Analyzing Shapes	47.049	DMS-1760471		13,392	-
Fundamental Physics from Astronomy and Cosmology	47.049	PHY-1915071		12,156	-
Geometric Langlands Correspondence: Further Directions	47.049	DMS-2005475		13,363	-
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		165,103	-
Hodge Filtration, Singularities, and Complex Birational Geometry	47.049	DMS-2040378		63,993	-
Induced Topological Superconductivity in Two Dimensional Systems	47.049	DMR-1708688		17,993	-
Inference for Functionals in High-Dimensional Regression	47.049	DMS-2113426		52,949	-
Instanton Homology in Low-Dimensional Topology	47.049	DMS-2005310		137,332	-
Institute for Theoretical, Atomic, Molecular and Optical Physics	47.049	PHY-1521560		479,308	358,870
Institute for Theoretical, Atomic, Molecular and Optical Physics (ITAMP)	47.049	PHY-2116679		601,647	225,558
Interactions of combinatorics and physics	47.049	DMS-2152991		91,419	-
Interactions of Particles, Fields, and Strings	47.049	PHY-2013858		54,107	-
Interfaces of Combinatorics and Physics	47.049	DMS-1854512		2,586	-
Investigating fundamental chemical and physical processes affecting gas-particle partitioning using levitated droplet-mass spectrometry	47.049	CHE-1808084		78,116	-
Investigating Laser-Activation of Structured Polymer Materials for Drug Delivery	47.049	PHY-1806434		124,523	-
Investigating Tunneling Across Self-Assembled Monolayers Using the Eutectic Galn Junction	47.049	CHE-1808361		14,255	-
Lie theory and Poisson geometry	47.049	DMS-2134169		671	-
Materials Research Science and Engineering Center	47.049	DMR-1420570		51,644	-
Materials Research Science and Engineering Center	47.049	DMR-2011754		2,537,668	-
Metallic Properties of the Isotopes of Hydrogen	47.049	DMR-1905943		129,941	-
MRI: Acquisition of Single-Crystal, DUO Diffractometer for Small Molecule Crystallography and Cryosystem	47.049	CHE-2216066		180,441	-
MRI: Development of a Scanning 4-Probe Microscope for Discovery and Characterization of Quantum Materials and Devices	47.049	DMR-1828569		394,825	-
Multi-Wavelength Observations and Modeling of Magnetic Fields in Ultracool Dwarfs and Giant Exoplanets	47.049	AST-2007411		171,294	-
New Frontiers in Homotopy Theory	47.049	DMS-1810917		86,738	-
New Paradigms of Quantum Criticality	47.049	DMR-2002850		32,813	-
NSF BSF: Nonlinear Photon Interactions in Cooperative Quantum Optical Systems	47.049	PHY-2207972		6,512	-
NSF-ANR: Developmental Mechanics Of Brain Evolution	47.049	PHY-2204058		113,336	-
NSF-BSF:Transport, fluctuation, and Nonequilibrium phase transition in atomically thin crystalline van der Waals superconductors	47.049	DMR-1809188		4,070	-
NSF-Simons Center for Mathematical and Statistical Analysis of Biology	47.049	DMS-1764269		847,391	-
Partially Wrapped Fukaya Categories and Functoriality in Mirror Symmetry	47.049	DMS-2202984		156,442	-
Photoactivation of Stable Bonds for Energy Conversion and Photoredox Catalysis	47.049	CHE-1855531		300,184	-
Physics and Applications of Quantum Nanophotonics Systems	47.049	PHY-2012023		132,096	-
QII-TAQS: Majorana Nanomanipulation for Topological Quantum Computing	47.049	OMA-1936246		351,445	204,890
QuIC-TAQS: Integrated Lithium Niobate Quantum Photonics Platform	47.049	OMA-2137723		711,895	318,563
RAISE-QAC-QSA: Open Quantum Systems on Noisy Intermediate-Scale Quantum Devices	47.049	DMR-2037783		6,281	4,166
Random Matrices, Random Schrödinger Operators and Applications	47.049	DMS-2153335		100,914	-
REU Site: Biomaterials Research Initiative Dedicated to Gateway Experiences	47.049	DMR-1559890		84,820	-
Shimura Varieties and Abelian Varieties	47.049	DMS-2200449		130,215	-
Simulating Spins with an Array of Single Molecules	47.049	PHY-2110225		148,471	-
Spindle Self-Organization and Bioenergetics in Vivo	47.049	PHY-2013874		447,247	-
Strange metals and the phases of quantum materials	47.049	DMR-2245246		5,998	-
Studies of Accretion onto Black Holes	47.049	AST-1816420		162,575	-
Synthesis of New Precursors for Vapor Deposition	47.049	1764338		(15,993)	-
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		125,780	-
The H3 Spectroscopic Survey and the Origin of the Galaxy	47.049	AST-2107253		210,218	-

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The HOD Project	47.049	DMS-1953093		101,592	-
Topics In General Relativity	47.049	PHY-2207659		107,446	-
Topological order and Anyons in and out of Equilibrium	47.049	DMR-2220703		183,080	-
Topology, Geometry and Physics	47.049	DMS-2002771		70,159	-
Transport in van der Waals Superconductor Heterostructures	47.049	DMR-2105048		82,815	3,556
Ultracold Triatomic Molecules	47.049	PHY-2109995		287,255	-
Understanding the Formation and Utilization of Halogenated Metabolites in Natural Product Biosynthesis	47.049	CHE-2003436		64,389	-
Unlikely Intersections in Diophantine Geometry and Dynamics	47.049	DMS -2200981		40,628	-
Workshops: Using Physics Education Research to Improve High and Middle School Physics	47.049	PHY-2025683		78,783	-
WoU-MMA: The Electromagnetic Counterparts of Gravitational Wave Sources	47.049	AST-2206110		25,976	-
WoU-MMA: Toward an Understanding of Common Envelope Interactions of Binary Stars	47.049	AST-1909203		(9,642)	-
HNDS-I: Bringing Differential Privacy to Social Science Data Repositories	47.049	BCS-2218803		15,981	-
Total for Assistance Listing Number 47.049				**21,423,860**	**4,185,532**
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		294,859	-
Belmont Forum Collaboration: Climate change, pollinator declines and the human diet	47.050	2020681		59,452	-
Belmont Forum Collaborative Research: Arctic Wetlands Ecosystems - Resilience through Restoration and Stewardship	47.050	ICER-2034778		43,235	-
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		132,736	-
Belmont Forum Collaborative Research: Governance of Sociotechnical Transformations	47.050	ICER-1856215		37,797	-
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		199,610	-
CAREER: Using Tracer Interrelationships to Understand Large-Scale Geophysical Flows and their Changes	47.050	AGS-2239242		32,109	-
CAREER:Exploring the early Earth with high-resolution paleomagnetism	47.050	EAR 1847042		174,411	-
Characterization of Oceanic Storm Systems using Microseism	47.050	EAR-2243407		16,875	-
Clumped Oxygen Isotope Signature of Marine Dissolved Oxygen	47.050	OCE-2049298		202,071	-
COLLABORATIVE RESEARCH: A multidimensional approach to understanding microbial carbon cycling beneath the seafloor during cool hydrothermal circulation	47.050	OCE-1635365		194	-
Collaborative Research: A Teleconnection between the Tropical Madden-Julian Oscillation and Arctic Sudden Stratospheric Warming Events in Warm Climates	47.050	AGS-1826635		3,329	-
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		117,378	-
Collaborative Research: Coupled flow-geomechanical models applied to assess earthquake triggering in tectonically active regions - The Los Angeles basin, CA	47.050	EAR-2141382		35,841	-
Collaborative Research: Development and Applications of GEOS-Chem Atmospheric Chemistry in CESM and MUSICA	47.050	AGS-2228359		17,630	-
Collaborative Research: EAGER--Novel Sampling and Isotopic Characterization of Upper Strato- to Mesospheric Photochemistry	47.050	AGS-2204475		12,830	-
Collaborative Research: Illuminating the Cenozoic Alkenone pCO2 Record	47.050	OCE-2100537		93,103	-
Collaborative Research: Imaging the Beginning of Time from the South Pole: The next Stage of the BICEP Program	47.050	OPP-1638957		729,973	-
Collaborative Research: Integrating GEOS-Chem atmospheric chemistry into the NCAR Community Earth System Model (CESM)	47.050	AGS-1914903		234,190	-
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		37,431	-
Collaborative Research: The Lake Superior basin: Natural geomorphic experiment, deepwater-terminating ice stream, and isostatically adjusting rift	47.050	EAR-2218460		38,810	-
Collaborative Research: Unlocking the Cenozoic/Cretaceous seawater sulfate record via inclusion of 17O in marine barite	47.050	OCE-1946137		223,115	-
Collaborative Research: Unmanned aerial vehicles for emissions and chemistry of volatile organic compounds over the Amazon tropical forest	47.050	AGS-1829025		(1,778)	-
Controls on ground surface deformation in thrust and reverse fault earthquakes	47.050	EAR-2207119		63,210	-
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		35,660	-
CSEDI Collaborative Research: The nature and timing of Earth's accretion	47.050	EAR-2054912		31,755	-
Development of a simple, low-cost device for sample collection and on-site preservation using a common oceanographic deployment platform	47.050	OCE-1924214		163,810	-
DISES: Environmental tipping points of cultural identity extinction in integrated human-ecological systems represented by small fishing nations	47.050	ICER-2108452		423,905	166,602
Evaluating the Impact of Future Volcanic Eruptions on Stratospheric Ozone: Influence of Multicomponent Injenction, Climate Change, Latitude, and Seasonality	47.050	AGS-1764171		(8,606)	-
Explaining the Surprising Simplicity of Continental Evapotranspiration	47.050	AGS-2129576		117,590	-
High spatial resolution assessment of the speleothem magnetization proxy	47.050	AGS-2202772		81,173	-
Immunotoxicity in Humans with Lifetime Exposure in Ocean Pollutants	47.050	OCE-1321612		(107,705)	-

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Schedule of Expenditures of Federal Awards
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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
Integrating the fossil record with computer simulation to reconstruct posture and locomotor evolution in the ancestors of mammals	47.050	EAR-2122115		165,435	-
NSF/GEO–NERC collaborative research: Dynamics of warm past and future climates	47.050	AGS-1924538		142,713	-
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		61,157	-
OTREC: Convective Heating Profiles and the Transition from Shallow to Deep Convection over the Tropical East Pacific and Southwest Caribbean	47.050	AGS-1759255		44,336	-
REU Site: Summer Program at Harvard in Earth and Environmental Research (SPHEER): Investigating a changing planet across multiple timescales	47.050	AGS-2150290		34,111	-
The Ninth International GEOS-Chem Meeting (IGC9); Cambridge, Massachusetts; May 6-9, 2019	47.050	AGS-1855750		2,864	-
The Tenth (10th) International GEOS-Chem Meeting (IGC10); Saint Louis, Missouri; June 7-10, 2022	47.050	AGS-2218241		16,179	-
Using hothouse climates to generalize understanding of convection, clouds, and circulation	47.050	AGS-2210757		137,902	-
Total for Assistance Listing Number 47.050				**4,140,690**	**166,602**
AF: Medium: Algorithmic Complexity in Computation and Biology	47.070	CCF-1509178		58,099	58,099
AF: Medium: Collaborative Research: Estimation, Learning, and Memory: The Quest for Statistically Optimal Algorithms	47.070	CCF-2212841		109,388	-
AF: Small: A Computational Lens on Participatory Democracy	47.070	CCF-2007080		73,357	-
AF: Small: Algorithms and Data Structures with Predictions	47.070	CCF-2101140		137,919	-
AF: Small: Streaming Complexity of Constraint Satisfaction Problems	47.070	CCF-2152413		90,410	-
AF:Small: Foundations for Data-driven Algorithmics	47.070	CCF-1816874		86,537	-
CAREER: Complexity of quantum many-body systems: learnability, approximations, and entanglement	47.070	CCF-2238836		15,620	-
CAREER: Defining how the primate visual system works under naturalistic conditions	47.070	2143077		73,018	-
CAREER: Generative Models for Targeted Domain Interpretability with Applications to Healthcare	47.070	IIS-1750358		103,303	-
CAREER: Information-Theoretic Foundations of Fairness in Machine Learning	47.070	CCF-1845852		101,359	-
CAREER: Multi-Agent Decision Making and Optimization using Communication as a Sensor	47.070	CNS-2114733		108,191	-
CIF: Medium: Collaborative Research: Information-theoretic Guarantees on Privacy in the Age of Learning	47.070	CCF-1900750		109,763	-
CIF: Small: Exploring and Exploiting the Universality Phenomenon in High-Dimensional Estimation	47.070	CCF-1910410		426	-
CNS Core: Medium: Approximation and Randomization in the Programmable Data Plane	47.070	CNS-2107078		175,754	-
Collaborative Research: CHS: Medium: Code demography: Addressing information needs at scale for programming interface users and designers	47.070	IIS-1955699		47,293	-
Collaborative Research: CNS Core: Medium: A Stateful Switch Architecture for In-Network Compute	47.070	CNS-2211383		5,902	-
Collaborative Research: CNS Core: Medium: Cross-Layer Design of Video Analytics for the Internet of Things	47.070	CNS-1955422		163,181	-
Collaborative Research: Computational Photo-Scatterography: Unraveling Scattered Photons for Bio-imaging	47.070	IIS-1730326		156,105	-
Collaborative Research: FMitF: Track I: Usable Synthesis-based End-User Programming with Rich Interaction Modalities	47.070	CCF-2123965		65,892	-
Collaborative Research: III: Medium: Situated Visual Information Spaces	47.070	IIS-2107328		182,650	-
Collaborative Research: MLWiNS: Distributed Learning over Multi-Access Channels: From Bandlimited Coordinate Descent to Gradient Sketching	47.070	CNS-2003111		32,632	-
Collaborative Research: RI: AF: Small: Wisdom of Crowds with Machines in the Loop	47.070	IIS-2007887		36,139	-
Collaborative Research: RI: Small: Post hoc Explanations in the Wild: Exposing Vulnerabilities and Ensuring Robustness	47.070	IIS-2008461		94,479	-
Collaborative Research: SaTC: CORE: Medium: Foundations of Trust-Centered Multi-Agent Distributed Coordination	47.070	CNS-2147694		83,872	-
Collaborative Research:PPoSS:Planning: Streamware - A Scalable Framework for Accelerating Streaming Data Science	47.070	CCF-2118985		37,338	-
CRCNS US-German Research Proposal: Neural Computations Underlying Mechanical -Flow Sensing in Zebrafish	47.070	IIS-1912293		4,310	-
CSR: SMALL: Virtualized accelerators for scalable, composable architectures	47.070	CNS-1718160		55,437	-
Elements: FLARE infrastructure for reproducible active learning of Bayesian force fields for ex-machina exascale molecular dynamics	47.070	OAC-2003725		144,188	-
FAI: Foundations of Fair AI in Medicine: Ensuring the Fair Use of Patient Attributes	47.070	IIS-2040880		136,418	-
HCC: Medium: Improving Human-AI Collaboration on Decision-Making Tasks	47.070	IIS-2107391		452,500	-
III: Medium: Visually Interactive Neural Probabilistic Models of Language	47.070	IIS-1901030		366,882	53,252
Making With Understanding: Using Augmented Reality to Support Peer Teaching in Makerspaces	47.070	IIS-1917716		203,824	-
NCS-FO: Empowering Data-Driven Hypothesis Generation for Scalable Connectomics Analysis	47.070	IIS-2124179		306,801	-
NRI: FND: Robust Grasping by Integrating Machine Learning with Physical Models	47.070	IIS-1924984		210,235	-
Phase II I/UCRC Harvard: Center for Spatiotemporal Thinking, Computing and Applications (STCA)	47.070	CNS-1841403		118,623	-
QCIS-FF: Quantum Computing and Information Science Faculty Fellow at Harvard University	47.070	CCF-2013303		222,351	-
RI: Medium: End-to-end Computational Sensing	47.070	IIS-1900847		187,158	-
RI: Small: Human Validation in Batch Reinforcement Learning	47.070	IIS-2007076		108,895	-
SHF:Medium:A Cloudless Universal Translator	47.070	CCF-1704834		344,732	-
Women In Theory Conference 2018	47.070	CCF-1830899		18,648	13,917
WORKSHOP: Student Innovation Challenge at User Interface Software and Technology 2019	47.070	IIS-1929082		(524)	-
Collaborative Research: DASS: Co-design of law and computer science for privacy in sociotechnical software systems	47.070	CCF-2217680		20,454	-
Collaborative Research: DASS: Enabling Standards- and Disclosure-Based Regulations in and through Software Systems: Making Algorithmic Work Management Software Accountable to Law	47.070	CCF-2217722		49,324	-
FAI: A Normative Economic Approach to Fairness in AI	47.070	IIS-2147187		190,930	-

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
Total for Assistance Listing Number 47.070				**5,289,813**	**125,268**
1000 species and counting: Harnessing the power of herbarium digitization, crowdsourcing, and phylofloristics to assess and predict phenological responses	47.074	DEB-1754584		117,911	-
BBSRC-NSF/BIO: Integrative analysis and Visualisation of Fly Cell Atlas datasets to enable cross-species comparisons	47.074	DBI-2035515		240,543	-
CAREER: Integrating brain-behavior evolution with real-world science impacts through working dog neuroscience	47.074	IOS-2238071		137,897	-
CAREER: Linking systemic stem cell activation to vertebrate limb regeneration	47.074	IOS-2145925		319,615	-
CAREER: Testing the contributions of selection, gene-flow, and recombination to reinforcement	47.074	DEB-1844906		248,505	-
CAREER: The evolution of gene regulatory networks for regeneration	47.074	IOS-1652104		130,854	-
CNH-L: Social-ecological traps and interactive dynamics of reef fisheries and human health	47.074	1826668		209,286	128,220
Collaborative Proposal: Redefining the ecological memory of disturbance over multiple temporal and spatial scales in forest ecosystems	47.074	DEB-1945910		217,562	-
Collaborative Proposal: Redefining the ecological memory of disturbance over multiple temporal and spatial scales in forest ecosystems	47.074	DEB-2231681		8,511	-
Collaborative Research: Comparative Genomics of Host-specific Adaptation and Life History Evolution in Brood Parasitic Birds	47.074	DEB-1754397		114	-
Collaborative Research: Convergent evolution and diversification of the crab body plan over 200 million years	47.074	DEB-1856679		184,232	-
Collaborative Research: Digitization and Enrichment of U.S. Herbarium Data from Tropical Africa to Enable Urgent Quantitative Conservation Assessments	47.074	DBI-2223880		80,587	-
Collaborative Research: Digitization TCN: Extending Anthophila research through image and trait digitization (Big-Bee)	47.074	DBI-2101908		60,806	-
Collaborative Research: EDGE FGT: Transformation and Genomic Resources to Advance Diverse, Emerging Model Angiosperms	47.074	IOS-2128195		150,283	-
Collaborative Research: Enabling control of Bacillus subtilis growth using non-standard amino acids	47.074	MCB-2027074		94,940	-
Collaborative Research: Evolving the mammalian forelimb: modeling musculoskeletal transformation in the forerunners of mammals	47.074	DEB-1754459		56,549	-
Collaborative Research: Higher-order processing in a peripheral neural structure of a nudibranch mollusc	47.074	IOS-2227964		31,881	-
Collaborative Research: Ideas Lab: Discovery of Novel Functional RNA Classes by Computational Integration of Massively-Parallel RBP Binding and Structure Data	47.074	MCB-2243704		46,784	-
Collaborative Research: LightningBug, An Integrated Pipeline to Overcome The Biodiversity Digitization Gap	47.074	DBI-2104150		32,083	-
Collaborative Research: MRA: Modeling and forecasting phenology across spatiotemporal and taxonomic scales using ecological observatory and mobilized digital herbarium data	47.074	DEB-2105903		68,979	-
Collaborative Research: PurSUiT: Understanding the Neotropical Velvet Worms (Onychophora, Peripatidae, Neopatida), a Cretaceous Radiation of Terrestrial Panarthropods	47.074	DEB-2154245		323,167	-
Collaborative Research: The Opiliones of New Zealand: Revisionary synthesis and application of species delimitation for testing biogeographic hypotheses	47.074	DEB-1754278		29,086	-
Combinatorial Inference: Statistical Uncertainty Assessment for Discrete Structures	47.074	1916211		18,736	-
Creating a Novel Museum-Based Resource for Neuroscience: Mass whole-slide imaging of the R. Glenn Northcutt Collection of Comparative Vertebrate Neuroanatomy and Embryology	47.074	DBI-2122620		96,453	-
CSBR: Natural History: Preserving the genomes of the type specimens in the Museum of Comparative Zoology	47.074	DBI-1946857		111,751	-
Designing a Minimized Genome Cyanobacterial Chassis for Efficient Bioproduction	47.074	MCB-2037995		175,458	-
Digitization TCN: Collaborative Research: Bringing Asia to digital life: mobilizing underrepresented Asian herbarium collections in the US to propel biodiversity discovery	47.074	DBI-2101884		320,861	35,009
Digitization TCN: Collaborative Research: Digitizing endless forms: Facilitating Research on Imperiled Plants with Extreme Morphologies	47.074	DBI-1802209		32,342	-
Digitization TCN: Collaborative Research: Documenting marine biodiversity through Digitization of Invertebrate collections (DigIn)	47.074	DBI-2001540		43,575	-
Digitization TCN: Collaborative Research: Enhancing Access to Taxonomic and Biogeographical Data to Stem the Tide of Extinction of the Highly Imperiled Pacific Island Land Snails	47.074	DBI-1902188		10,225	-
Digitization TCN: Collaborative Research: Mobilizing Millions of Marine Mollusks of the Eastern Seaboard	47.074	DBI-2001536		35,567	-
Digitization TCN: Collaborative Research: oVert: Open Exploration of Vertebrate Diversity in 3D	47.074	DBI-1702263		9,270	-
Dimensions US-BIOTA-Sao Paulo: Collaborative Proposal: Traits as predictors of adaptive diversification along the Brazilian Dry Diagonal	47.074	DEB-1831560		40,781	-
EDGE FGT: MUSH-IT: MUlti-Species Hemimetabolous Insect Tools	47.074	IOS-2220747		174,493	-
Examining the correlated molecular mechanisms of self and heterospecific pollen-pistil recognition	47.074	IOS-1906113		141,908	-
Expanding the functions of a 57 codon recoded E.coli genome	47.074	2123243		864,798	-
IntBIO COLLABORATIVE RESEARCH: Deep Time, Development, and Design: Evolution of shark skin teeth from genotype to phenotype to prototype.	47.074	IOS-2128033		134,200	-
Investigating the Rotation of Stator Units of the Bacterial Flagellar Motor	47.074	MCB-2146519		264,215	-
LTER: From Microbes to Macrosystems: Understanding the response of ecological systems to global change drivers and their interactions	47.074	DEB-1832210		965,792	216,622
MRI: Development of a Microelectromagnetic, Laser Ablation Instrument for Biomechanics	47.074	DBI-1919834		196,027	-
Remote homology detection with evolutionary profile HMMs	47.074	MCB-2151294		46,048	-
REU Site: Evolution, Ecology, Environment	47.074	DBI-1757780		57,262	-
REU Site: Genes, Ecosystems, Organisms	47.074	DBI-2150058		31,899	-
REU Site: Summer Research Program in Ecology at Harvard Forest	47.074	DBI-1950364		181,902	-
Revitalizing a field wireless network for research, education and outreach at the Harvard Forest	47.074	DBI-2129580		9,675	-
Sustaining Flybase: The Drosophila genomic and genetic database	47.074	DBI-2039324		294,412	-
Transitions: Spatiotemporal Behaviors of Metabolic Fluxes in Cell Biology	47.074	MCB-2052305		367,954	-
Total for Assistance Listing Number 47.074				**7,415,779**	**379,851**

Harvard University
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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
2022 Cooperative Election Study	47.075	SES-2148907		707,990	605,200
A Robust and Reliable Resource for Accessing, Sharing, and Analyzing Confidential Geospatial Research Data	47.075	BCS-2025783		11,722	-
CAREER: Engineering opportunity: Manipulating choice architecture to attenuate social bias	47.075	BCS-1653188		5,375	-
CAREER: Experimental pragmatics and semantics in visual language	47.075	BCS-1844186		200,701	-
CAREER: Global Transport Markets: impact on trade and efficiency	47.075	SES-1847555		29,862	-
CAREER: The AI Revolution and Autocratic Institutions	47.075	SES-2143343		177,104	-
CAREER: The Tuning and Topography of the Ventral Visual Stream	47.075	BCS-1942438		115,659	-
Collaborative Conference Proposal: Support for Conferences and Mentoring of Women and Underrepresented Groups in Political Methodology	47.075	SES-1922190		2,236	-
Collaborative research: Emirical Evidence of the Tax Administration Production Function	47.075	SES-1919073		425	-
Collaborative Research: How Events are Conceptualized by Users of Homesign and by Users of an Established Sign Language	47.075	BCS-2116702		125,250	-
Collaborative Research: Loopholes as a window into the learning of meaning	47.075	BCS-2118096		195,004	-
Collaborative Research: NCS-FO: Foundations of learning: individual variation, plasticity, and evolution	47.075	DRL-2219739		16,822	-
Collaborative Research: Reconstructing Classic Genetic and Social Kinship Networks	47.075	BCS-2150813		4,726	-
Collaborative Research: Understanding the Evolution of Political Campaign Advertisements over the Last Century	47.075	SES-2148928		7,826	-
COMPCOG: Intuitive Physics without Intuition or Physics: Leveraging Deep Neural Networks to Model Human Physical Reasoning	47.075	BCS-1946308		215,505	-
Conference: Toward a Holistic Developmental Science: Catalyzing Transdisciplinary Multi-Sector Collaborations to Understand and Support Human Development	47.075	BCS-2218351		19,557	-
COVID-19: Collaborative Research: U.S. Institutions after COVID-19: Trust, accountability, and public perceptions	47.075	SES-2116458		28,242	-
COVID-19: RAPID: Joint Epidemiological and Macroeconomic Outcomes from Non- Pharmaceutical Interventions in Response to the COVID-19 Pandemic	47.075	SES-2032493		(5,903)	-
DDRIE: Emigration: A Blessing or a Curse: Empirical Evidence	47.075	SES-2149140		30,423	-
Doctoral Dissertation Research in Economics: Belief Formation and Adaptation to Climate Change	47.075	SES-2242263		20,753	-
Doctoral dissertation research: “Making laboratory practice ‘good’: Negotiating transnational toxicological standards for chemical testing, 1971-2010”	47.075	SES-1754980		5,832	-
Doctoral Dissertation Research: Cellular Senescence in Human Age-Related Mortality and Lifespan	47.075	BCS-2116277		5,308	-
Doctoral Dissertation Research: Evaluating Risk and Uncertainty in Urban Infrastructural Planning	47.075	BCS-1917829		(1)	-
Doctoral Dissertation Research: Evolutionary mismatch and variation in physical activity and function	47.075	BCS-2235529		6,974	-
Doctoral Dissertation Research: Exploration of Positively Selected Regions of the Human Genome Shaping Pelvis and Scapula Evolution	47.075	BCS-1847979		21,049	-
Doctoral Dissertation Research: Exploring the Origins of Malaria Using Ancient DNA	47.075	BCS-2141896		20,102	-
Doctoral Dissertation Research: Networks of Support and Solidarity in Carceral Contexts	47.075	BCS-2148008		25,200	-
Doctoral Dissertation Research: Physiological tradeoffs arising from early-life disruption of the gut microbiome	47.075	BCS-2142073		18,233	-
Doctoral Dissertation Research: Prefixal Agreement, Verb Classes, and Serialization	47.075	BCS-2141097		10,497	-
Doctoral Dissertation Research: The Not-So-Inexhaustible Sea: Fisheries Science and Management 1863-present	47.075	SES-2043610		4,883	-
EAGER: Talk of the Town App for Research	47.075	BCS-2121842		31,988	-
Evaluating the Impacts of Machine Learning Algorithms on Human Decisions	47.075	SES-2051196		109,260	1,800
Financing the Trans-Atlantic Slave Trade	47.075	SES-2116150		3,131	-
HNDS-I: A global seafood trade network database for sustainable food systems, human health, and nutrition security	47.075	2121239		23,028	-
Identifying novel memory traces that improve action precision	47.075	BCS-2218427		147,657	-
Measuring and Reducing Algorithmic Discrimination with Quasi-Experimental Data	47.075	SES-2119849		148,260	13,835
Optimal Public Transportation Networks: Theory and Evidence.	47.075	SES-2049784		103,626	6,932
Our Inner Neandertal: Interrogating Positively Selected Introgressed Variants in Modern Human Genomes for Regulatory Functions	47.075	BCS-2020205		65,823	-
Policing and the Educational Performance of Minority Youth	47.075	SES 1850666		32,069	-
RIDIR: Collaborative Research: Bayesian analytical tools to improve survey estimates for subpopulations and small areas	47.075	SES-1926424		35,386	-
Social Structure Learning	47.075	BCS-2116543		180,194	-
Speech and Communicative Timing Across Languages and Linguistic Contexts	47.075	BCS-2306149		112,295	24,771
Urbanization and Economic Growth	47.075	SES-2117534		162,458	-
Workshop: Historical and Social Perspectives on the Life Sciences Concerning Life and Death: Naples, Italy, June 23-30, 2019	47.075	SES-1921617		7,472	-
Collaborative Research: DASS: Co-design of law and computer science for privacy in sociotechnical software systems	47.075	CCF-2217680		13,693	-
Collaborative Research: DASS: Enabling Standards- and Disclosure-Based Regulations in and through Software Systems: Making Algorithmic Work Management Software Accountable to Law	47.075	CCF-2217722		32,882	-
FAI: A Normative Economic Approach to Fairness in AI	47.075	IIS-2147187		41,345	-
HNDS-I: Bringing Differential Privacy to Social Science Data Repositories	47.075	BCS-2218803		121,788	-
Total for Assistance Listing Number 47.075				**3,399,711**	**652,538**
Collaborative Research: Developing rural girls' STEM competency and motivation through communicating scientific topics with advanced technology	47.076	DRL-1657017		934	-
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		171,897	-
Collaborative Research: Developing an Online Game to Teach Middle School Students Science Research Practices in the Life Sciences	47.076	DRL-1907398		151,036	-

Harvard University
Schedule of Expenditures of Federal Awards
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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
Collaborative Research: Investigating Gender Differences in Digital Learning Games with Educational Data Mining	47.076	DRL-2201799		26,995	-
Collaborative Research: Supporting Teachers to Develop Equitable Mathematics Instruction Through Rubric-Based Coaching	47.076	DRL-2100961		280,386	-
Core Systems for Learning Mathematics	47.076	DRL-1348140		(47)	-
Crowd-Sourced Online Nexus for Developing Assessments of Middle-school Physical Science Disciplinary Core Ideas	47.076	DRL-2101493		219,146	38,654
Getting Unstuck: Designing and Evaluating Teacher Resources to Support Conceptual and Creative Fluency with Programming	47.076	DRL-1908110		329	-
Graduate Research Fellowship Program	47.076	DGE-1745303		(1,421,646)	-
Graduate Research Fellowship Program	47.076	DGE-2140743		12,765,070	-
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		225,782	21,720
MOSART HSPS: Misconceptions Oriented Standards-Based Assessment Resource for Teachers of High School Physical Sciences	47.076	DRL-1621210		21,637	18,529
NCS-FO: Dynamic computational phenotyping of human cognition and brain function	47.076	DRL-2024462		269,664	-
Reconstructing Research in Teacher Education to Provide Usable Knowledge and Support Teacher Education Improvement	47.076	DUE-1920616		124,762	42,308
Researching Pre-College Factors that Lead to Persistence in Computer Science	47.076	DRL-2029256		135,704	43,876
Study of Preservice Teachers' Science Content Knowledge and Pedagogical Content Knowledge	47.076	DUE-2013263		327,574	28,894
The Mathematical Knowledge for Teaching Measures: Refreshing the Item Pool	47.076	DRL-1620914		66,742	-
Total for Assistance Listing Number 47.076				**13,365,965**	**193,981**
Collaborative Research: Bridging the scale gap between local and regional methane and carbon dioxide isotopic fluxes in the Arctic	47.078	OPP-1848620		1,378,239	-
Collaborative Research: Imaging the 3D Viscosity Structure of the Antarctic Mantle with Existing Observations from GPS and Relative Sea Level	47.078	OPP-2142593		11,808	-
Collaborative Research: Impacts of Global Change on Terrestrial Mercury in the Arctic	47.078	OPP-2210173		238,624	-
Total for Assistance Listing Number 47.078				**1,628,671**	**-**
FW-HTF-P: Future of Work for Strength and Movement Training Professionals	47.083	OIA-2129012		108,859	-
Total for Assistance Listing Number 47.083				**108,859**	**-**
NSF Convergence Accelerator: Track H: Restoring Arm Function with Connected Assistance and Rehabilitation Systems	47.084	ITE-2236157		163,480	-
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		52,814	-
Total for Assistance Listing Number 47.084				**216,294**	**-**
Total for National Science Foundation Direct Award Research and Development Cluster				**59,648,652**	**6,135,872**
Office of the Director of National Intelligence					
Rapid Tests for Virus Genes that Suppress the Host Antiviral Defenses	12.431	W911NF-17-2-0092		188,816	25,803
Total for Assistance Listing Number 12.431				**188,816**	**25,803**
Total for Office of the Director of National Intelligence Direct Award Research and Development Cluster				**188,816**	**25,803**
U.S. Office of Personnel Management					
OPM Meta Leadership Development	27.RD	24322623P0008		13,572	-
Total for Assistance Listing Number 27.RD				**13,572**	**-**
Total for U.S. Office of Personnel Management Direct Award Research and Development Cluster				**13,572**	**-**
Total for Reseach and Development Cluster Direct Awards				**544,056,666**	**126,862,617**
Subaward Received					
Agency for International Development					
Brigham and Women's Hospital, Inc - The HHI Executive Negotiation Project: Advanced Strategies for Humanitarian Leaders	98.001		124156	687,868	-
Concern Worldwide U.S. Inc - Humanitarian Leadership Program: Developing the Next Generation of Humanitarian Leaders	98.001		NNPHL2-HHI-004	76,616	-
Concern Worldwide U.S. Inc - NNPHL Phase III	98.001		NNPHL3-HHI-001	178,806	-
IMA World Health - Health Resilience at the Last Mile	98.001		MIHR-Harvard-001	136,625	-
International Medical Corps - Building a Better Response: Strengthening Non-governmental organization Capacity and Engagement in the International Humanitarian Architecture	98.001		104035.100.51	1,062,192	612,414
International Republican Institute - Advanced Negotiation and Leadership Program	98.001		No Award Number	4,742	-
International Republican Institute - Advanced Negotiation and Leadership Program	98.001		No Award Number	163,593	-
International Rescue Committee - Innovations in SEL Research and Practice	98.001		7200AA19FA00016	9,090	-
National Academy of Sciences - Targeting lipoprotein biogenesis in multi-drug resistant Acinetobacter baumannii for the development of new antibiotics	98.001		2000010561	975	-
Population Reference Bureau - MOMENTUM Round 2C	98.001		2020-030AL	767,434	107,908
Tufts University - Feed the Future Innovation Lab for Food Systems for Nutrition	98.001		104042	96,131	-
Total for Assistance Listing Number 98.001				**3,184,072**	**720,322**
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	109,265	-
Grand Challenges Canada - Visual Response Simulator (ViRS): Predictive Modeling for Humanitarian Epidemiological Response	98.RD		R-HGC-POC-2007-35040	1,964	-
PATH - President's Malaria Initiative	98.RD		AID.574718-01706921-SUB	34,289	-
Regents of the University of California - Davis - Credit for Social Change: Water Access and Improved Farming through Better Borrowing	98.RD		A20-1825-S012	140,332	132,716
SAR Cellulabs - Closing the Gaps in TB Care Cascade (CGC)	98.RD		72038620CA00012	83,453	-

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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
Total for Assistance Listing Number 98.RD				**369,303**	**132,716**
Total for Agency for International Development Subaward Received Research and Development Cluster				**3,553,375**	**853,038**
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	32,297	-
Total for Assistance Listing Number 10.001				**32,297**	**-**
Community Outreach and Patient Empowerment - Navajo Fruit and Vegetable Prescription Program	10.331		AVA0417.HMS.05012019	2,824	-
Total for Assistance Listing Number 10.331				**2,824**	**-**
University of Vermont - Integrating field and Landsat data to Monitor Forest Conditions in the New York City Watershed	10.664		AWD00000334SUB00000354	24,494	-
Total for Assistance Listing Number 10.664				**24,494**	**-**
Reed College - Engaging diverse undergraduate students in statistical investigations for forest inventories	10.707		40833-5326	44,258	-
Total for Assistance Listing Number 10.707				**44,258**	**-**
Total for Department of Agriculture Subaward Received Research and Development Cluster				**103,873**	**-**
Department of Commerce					
Trustees of Boston University - Towards an End-to-End Approach to Formal Privacy for Sample Surveys	11.016		4500003717	218,305	-
Total for Assistance Listing Number 11.016				**218,305**	**-**
Total for Department of Commerce Subaward Received Research and Development Cluster				**218,305**	**-**
Department of Defense					
Columbia University - Reengineering the Nervous System of a Cnidarian	12.300		1(GG016259)	64,448	-
Dana-Farber Cancer Institute - Nanoswitch Caliper Trains for High-Throughput, High-Resolution Structural Analysis of Complex DNA Nanostructures	12.300		3300401	51,559	-
Drexel University - Biologically derived approaches and prototypes for the control and propulsion of swimming vehicles for riverine environments	12.300		940026	156,736	-
Johns Hopkins University - Navigating in a Complex and Noisy Environment as a Group	12.300		2005184246	40,014	-
Lehigh University - Revealing the hydrodynamic principles of three-dimensional fish schools: from biology to schooling robotics	12.300		544655-78002	169,434	-
Massachusetts Institute of Technology - Hybrid Encoding for Singed Expressions (HESE) and Direct HESE Analog-to-Digital Converters	12.300		S5181	(4,326)	-
Purdue University - Meta-Cavity-Mediated Strong Light-Matter Coupling in Two-Dimensional Materials	12.300		13001182-040	307,128	-
Regents of the University of California - A Computational Cognitive Neuroscience Approach to Understanding Event Representation and Episodic Memory	12.300		A17-0260-S004	43,041	-
Regents of the University of California - Berkeley - Carbon-based Hierarchically Integrated Synthetic Electronics (CHISEL)	12.300		9294	(7,760)	-
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		D10034-02 SA736 A2 5A070C 780	87,732	-
Trustees of Boston University - Fundamental studies on the influence of angular momentum on light-matter interactions	12.300		4500003518	191,386	-
University of Pittsburgh - Topological Qubits based on Graphene Nanoribbons	12.300		AWD00003971 (417688-1)	196,502	-
University of Texas - Austin - Extraordinary Electronic Switching of Thermal Transport	12.300		UTA21-000333/ UTAUS-	261,020	-
University of Virginia - Bio-Inspired Flexible Propulsors for Fast, Efficient Swimming: What Physics are we missing	12.300		2339490	16,665	-
University of Washington - High Dimensional Causal Model Search	12.300		UWSC11180	35,691	-
Total for Assistance Listing Number 12.300				**1,609,270**	**-**
Los Alamos National Laboratory - The Rapid Assessment of Platform Technologies to Expedite Response	12.351		266452	79,046	-
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	71,829	-
Total for Assistance Listing Number 12.351				**150,875**	**-**
Brigham and Women's Hospital, Inc - Extremity regeneration of soft tissue injury using growth factor impregnated gels	12.420		115662	206,753	-
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 Metal Exposures	12.420		5488	16,972	-
Total for Assistance Listing Number 12.420				**223,725**	**-**
Board of Regents of the University of Wisconsin System - OPTION 1: Qubits in Gate-Defined Silicon Quantum Dots	12.431		752K205	86,894	-
Curators of the University of Missouri - Quantum State Control of Molecular Collision Dynamics	12.431		C00064278-1	94,471	-
Duke University - Evolutionary Mechanics of Impulsive Biological Systems: Guiding Scalable Synthetic Design	12.431		313-1037	32,556	-
Massachusetts Institute of Technology - Ab-Initio Solid-State Quantum Materials: Design, Production, and Characterization at the Atomic Scale	12.431		S4667-PO 226099	72,178	-
Massachusetts Institute of Technology - Efficient light-matter interfaces for Rydberg arrays and entanglement in topological quantum networks	12.431		S4963 - PO 420751	40,414	-
Massachusetts Institute of Technology - Multi- Qubit Enhanced Sensing and Metrology	12.431		5710003135	(11,559)	-
Massachusetts Institute of Technology - Quantum Heterostructures at Solid State and High Freq Electronics	12.431		s6014	10,058	-
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	102,509	-
Regents of the University of California - San Diego - Dynamic Artificial Cells Composed of Synthetic Bioorthogonal Membranes	12.431		28401353 (S900469)	77,407	-

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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
Regents of the University of California - Santa Barbara - Exotic Transport Properties and Unique Applications of Intercalated van der Waals Materials	12.431		KK1913	(43)	-
Regents of the University of Michigan - MultiScale Network Games of Collusion and Competition	12.431		SUBK00012224	121,711	-
Regents of the University of Minnesota - MURI: Multiscale Mathematical Modeling and Design Realization of Novel 2D Functional Materials	12.431		A004135001	(136)	-
University of Pittsburgh - Adaptive Self-assembled Systems: Exploiting Multifunctionality for Bottom-up Large-scale Engineering (ASSEMBLE)	12.431		CNVA00056411 (413469-1)	360,048	-
University of Rochester - Giant Nonlinear Response of ENZ Metastructures	12.431		417359 / URFAO: GR510802	11,784	-
University of Southern California - Closed-Loop Multisensory Brain-Computer Interface for Enhanced Decision Accuracy	12.431		79575749	63,002	-
University of Southern California - Realizing Cyber Inception: Towards a Science of Personalized Deception for Cyber Defense	12.431		123811799	190,208	-
Total for Assistance Listing Number 12.431				**1,251,502**	**-**
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	695,087	-
Henry M. Jackson Foundation for the Advancement of Military Medicine, Inc. - Identifying Predictors of Treatment Response in Servicemembers with Post traumatic Stress Disorder-Related Sleep Disturbances:Use of Large Datasets to Improve Treatment Selection over the Military Lif	12.750		4172	(5,361)	-
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	252,117	-
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	1,465,732	-
Total for Assistance Listing Number 12.750				**2,407,575**	**-**
Cornell University - Plant-inspired thermal metamaterials with tunable properties	12.800		139783-21204	49,812	-
Duke University - Meta-imaging: Sensing, Processing and Computing with Dynamic Metasurfaces	12.800		313-1118	186,983	-
Massachusetts Institute of Technology - Multiplexed Quantum Repeaters for High-Speed Quantum Networks	12.800		S5090 - PO 473660	181,375	-
Massachusetts Institute of Technology - Prediction, Statistical Quantification and Mitigation of Extreme Events Caused by Exogenous Causes or Intrinsic Instabilities	12.800		S5203	34,828	-
Stanford University - ANSRE: ANalysis and Synthesis of Rare Events	12.800		62455257-159327	174,530	-
University of Maryland, College Park - Photonic Quantum Matter	12.800		42692-Z8183002	(4,630)	-
University of Texas - Austin - ATOMIC-SCALE MANIPULATIONS OF INTERBAND OPTICAL NONLINEARITIES (ATOMS-IONS)	12.800		UTAUS-SUB00000688	158,317	-
University of Texas - Austin - Ultralow power, Ultrafast, Integrated Nano-Optoelectronics	12.800		UTA16-001252	72,053	-
Total for Assistance Listing Number 12.800				**853,268**	**-**
Arizona Board of Regents, University of Arizona - Global Reading and Assembly for Semantic, Probabilistic World Models (GRASP)	12.910		431715	11,648	-
Carnegie Mellon University - RECTIFY: Rechargeability Enabled by Coated inTerfaces and dIFferentable phYsical modeling	12.910		1190068-455964	197,212	-
International Business Machines Corporation - Harvard-IBM RFP for DARPA HR001117S0055 (DSSoC)	12.910		CW2914640	306,535	-
Massachusetts Institute of Technology - Many-body atomic clocks based on non-equilibrium correlated quantum matter	12.910		S4759 - PO 278105	(14)	-
Regents of the University of California - Berkeley - Driven Quantum Matter for Metrology (DQM2)	12.910		9965	11,674	-
Regents of the University of California - San Diego - Non-equilibrium Order Parameter Optoelectronics for Quantum Information Processing	12.910		111684807	39,663	-
Stottler Henke Associates, Inc. - Pathogen Classification Tool	12.910		7872192-01	124,858	-
Total for Assistance Listing Number 12.910				**691,576**	**-**
Georgia Institute of Technology/Georgia Tech Research Corporation - Human Lung Chip Testbed for Influenza Therapeutics	12.RD		No Award Number	331,000	-
International Business Machines Corporation - Artificial Mental Models for Machine Common Sense	12.RD		CW3013552	251,984	-
Lincoln Laboratory - Cryogenic Lithium Niobate Devices for Scalable Memory-Enabled Quantum Networks	12.RD		7000514813	10,537	-
Maritime Applied Physics Corporation - Methane Harvesting for Seafloor Generation	12.RD		V03343 -051920	(5,565)	-
Melanoma Research Alliance - Developing and validating a risk prediction model for rare melanomas	12.RD		W81XWH2110819-Harvard01	15,032	-
Perceptronics Solutions - Topology-Agnostic Resource Management and Control (TARMAC)	12.RD		No Award Number	123,511	-
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	446	-
Regents of the University of Michigan - Applications Driving Architectures (ADA) Center	12.RD		3004811120	320,180	-
Total for Assistance Listing Number 12.RD				**1,047,125**	**-**
Total for Department of Defense Subaward Received Research and Development Cluster				**8,234,916**	**-**
Department of Education					
American Institutes for Research - Building and Sustaining the Capacity of Local Math Coaches to Support College- and Career-Ready Mathematics Instruction	84.305		482000001	80,147	-
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	4,230	-
Manpower Demonstration Research Corporation - Identifying Best Practices for Estimating Average Treatment Effects in Cluster Randomized Trials	84.305		1475-HU-2000-01	85,619	-
Regents of the University of California - Berkeley - Improving methods for policy impact evaluation with group panel data in education research	84.305		10415	74,932	-
Total for Assistance Listing Number 84.305				**244,928**	**-**

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Guilford Public Schools - Supporting Controversial Issues Discussions 1	84.424A		No Award Number	24,467	-
Guilford Public Schools - Supporting Controversial Issues Discussions 2	84.424A		No Award Number	10,000	-
Total for Assistance Listing Number 84.424A				**34,467**	**-**
COVID-19: Boston After School and Beyond - School Year 2022-23 OIF Program Details for BoSTEM	84.425U		No Award Number	31,068	-
COVID-19: Ohio Department of Education - Proving Ground: Ohio Attendance Network	84.425U		No Award Number	408,462	-
Total for Assistance Listing Number 84.425U				**439,530**	**-**
Total for Department of Education Subaward Received Research and Development Cluster				**718,925**	**-**
Department of Energy					
Lawrence Berkeley National Lab - Center for Novel Pathways to Quantum Coherence in Materials	81.000		7677901	11,470	-
Lawrence Berkeley National Lab - Conceptual Engineering Design and Prototype of Small Aperture Telescope (SAT) Optical System	81.000		7590651	219,317	-
Lawrence Berkeley National Lab - Operation of the Harvard Forest Core Site in the AmeriFlux Network Management Project (ANMP)	81.000		7549117	196,859	-
Lawrence Berkeley National Lab - Quantum Systems Accelerator	81.000		7568717	3,544,688	-
Total for Assistance Listing Number 81.000				**3,972,334**	**-**
California Institute of Technology - Hybrid Electro- and Acoustic-Dynamical Systems for Quantum Optical Networks (HEADS-QON)	81.049		S470646	(4,262)	-
California Institute of Technology - Quantum Communication Channels for Fundamental Figures Physics (QCCFP)	81.049		S490356	232,967	-
Carnegie Mellon University - Van der Waals Reprogrammable Quantum Simulator	81.049		1070142-450783	(2,468)	-
Dana-Farber Cancer Institute - Optimizing enzymes for plastic upcycling using machine learning design and high throughput experiments	81.049		4805802	135,751	-
Northwestern University - Center for Bio-Inspired Energy Science (CBES)	81.049		SP0027267-PROJ0007138	56,875	-
Northwestern University - Center for Bio Inspired Energy Science	81.049		60038340 HA	12,908	-
Purdue University - Quantum Computing Algorithms and Applications for Coherent and Strongly Correlated Chemical Systems	81.049		14000393-017	(2,538)	-
Stanford University - Controlled synthesis of solid-state quantum emitter arrays for quantum computing and simulation	81.049		62267247-151086	175,876	-
University of Illinois at Urbana-Champaign - EFRC Regenerative Energy-Efficient Manufacturing of Thermoset Polymeric Materials (REMAT)	81.049		110904-19218	101,720	-
University of Texas - Arlington - QPix: Achieving kiloton scale pixelated readout for Liquid Argon Time Projection Chambers	81.049		2019GC5293	62,782	-
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)	119,740	-
Total for Assistance Listing Number 81.049				**889,351**	**-**
Princeton University - Membrane Dehumidification as Facade-integrated Building Screens for Latent Cooling	81.086		SUB0000465	(843)	-
Total for Assistance Listing Number 81.086				**(843)**	**-**
Massachusetts Institute of Technology - Micro-mechanically guided high-throughput alloy design exploration towards metastability-induced hydrogen embrittlement resistance Technical	81.087		S5045	(2,301)	-
Quino Energy, Inc. - Flow Battery Systems Manufacturing	81.087		QE-SC-2022-02	376,061	-
Total for Assistance Listing Number 81.087				**373,760**	**-**
Trustees of Boston University - A New Risk Assessment and Management Paradigm (NewRAMP) in Electricity Markets	81.135		4500003690	11,044	-
University of Houston - MINI-PULPS: Miniaturized Pulsed Power Systems for Mission Critical Applications	81.135		R-23-0002	78,998	-
University of Maryland, College Park - New Environmental-Thermal Barrier Coatings for Ultrahigh Temperature Alloys	81.135		98476-Z7130202	45,797	-
Total for Assistance Listing Number 81.135				**135,839**	**-**
Brookhaven National Laboratory - ATLAS NSW Front-end Electronics Commissioning and Maintenance	81.RD		415554	75,823	-
Brookhaven National Laboratory - ATLAS NSW Front-end Electronics Commissioning and Maintenance	81.RD		394993	34,241	-
Brookhaven National Laboratory - Co-design Center for Quantum Advantage (C2QA)	81.RD		390035	193,664	-
Brookhaven National Laboratory - Dynamics and Control of Magnetic and Charge Order in Complex Oxides	81.RD		411807	104,608	-
Brookhaven National Laboratory - Inorganic-Polymer-Composite Electrolyte with architecture design for Lithium Metal Solid State Batteries	81.RD		414652	102,968	-
Iowa State University - EFRC: Center for the Advancement of Topological Semimetals	81.RD		SC-19-488	49,352	-
Lawrence Livermore National Laboratory - Shape Changing of Responsive Elastometer Structures (SCoRES)	81.RD		B650176	61,944	-
Oak Ridge National Laboratory - Abisko Codesign in the Wild	81.RD		CW34496	60,815	-
Oak Ridge National Laboratory - Quantum Science Center	81.RD		4000187220	906,015	-
Pacific Northwest National Laboratory - Long Lifetime Aqueous Soluble Organic Flow Battery Development	81.RD		535264	50,756	-
Pacific Northwest National Laboratory - Long Lifetime Aqueous Soluble Organic Flow Battery Development	81.RD		654799	14,509	-
Pacific Northwest National Laboratory - Remodeling Practices and the Energy Retrofit Challenge: Identifying and Addressing Remodeling Industry Factors	81.RD		Subcontract No. 632548	216,479	-
Total for Assistance Listing Number 81.RD				**1,871,174**	**-**
Total for Department of Energy Subaward Received Research and Development Cluster				**7,241,615**	**-**
Department of Homeland Security					
Rand Corporation - At the Vanguard: The Future of Emergency Management Executive Leadership Seminar Presentation	97.RD		SCON-00000563	67,906	-
Rand Corporation - EMI Thought Leadership and Executive Crisis Leadership Project	97.RD		SCON-00000422	71,746	-
Rand Corporation - Vanguard: The Future of Emergency Management Executive Leadership seminar	97.RD		SCON-00000570	71,148	-
Total for Assistance Listing Number 97.RD				**210,800**	**-**
Total for Department of Homeland Security Subaward Received Research and Development Cluster				**210,800**	**-**
Department of Housing & Urban Development					

The accompanying notes are an integral part of this schedule.

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The German Marshall Fund of the United States - Shared Housing: What can the United States learn from the Federal Republic of Germany's Shared Multigenerational Housing Model	14.506		No Award Number	9,255	-
Total for Assistance Listing Number 14.506				**9,255**	**-**
George Washington University - The impact of housing assistance on residential environmental exposures	14.906		20-M01	(2,098)	-
Total for Assistance Listing Number 14.906				**(2,098)**	**-**
Total for Department of Housing & Urban Development Subaward Received Research and Development Cluster				**7,157**	**-**
Department of State					
Fulbright University Vietnam USA - Open Policy Dialogue and Academic Collaboration with Fulbright University Vietnam	19.451		100006-3099-1	9,330	-
Fulbright University Vietnam USA - Open Policy Dialogue and Academic Collaboration with Fulbright University Vietnam	19.451		100007-0090-1	150,000	-
Total for Assistance Listing Number 19.451				**159,330**	**-**
CRDF Global - Training to Disrupt People's Republic of China's Acquisition of WMD Applicable Technology from African STEM Institutions	19.RD		PO20-01110	7,558	-
Total for Assistance Listing Number 19.RD				**7,558**	**-**
Total for Department of State Subaward Received Research and Development Cluster				**166,888**	**-**
Department of the Interior					
Southern California Earthquake Center - 2022 SCEC-USGS Research Collaboration at Harvard University	15.808		SCON-00003728	67,418	-
Total for Assistance Listing Number 15.808				**67,418**	**-**
Total for Department of the Interior Subaward Received Research and Development Cluster				**67,418**	**-**
Department of the Treasury					
COVID-19: Wyoming Business Council - Wyoming's Pathways to Growth, Jobs, and Prosperity	21.027		No Award Number	873,200	-
Total for Assistance Listing Number 21.027				**873,200**	**-**
Total for Department of the Treasury Subaward Received Research and Development Cluster				**873,200**	**-**
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	319,851	-
Total for Assistance Listing Number 64.RD				**319,851**	**-**
Total for Department of Veterans Affairs Subaward Received Research and Development Cluster				**319,851**	**-**
Department of Health and Human Services					
AIDS Prevention Initiative in Nigeria, Ltd/Gte. - Accelerated Comprehensive AIDs Response for Epidemic control and Sustainability (CARES)	93.067		GH2416	290,251	-
Total for Assistance Listing Number 93.067				**290,251**	**-**
Silent Spring Institute - Assessment of PFAS exposures and health effects in two Massachusetts communities with PFAS drinking water contamination	93.070		7101-HSPH-Y1	238,624	-
Total for Assistance Listing Number 93.070				**238,624**	**-**
Stanford University - Prevention Policy Modeling Lab	93.084		62380390-148206	417,319	-
University of Utah - Modeling and Simulation to Support Epidemiological Decision-Making in Healthcare Settings	93.084		10056438-01	155,220	-
Total for Assistance Listing Number 93.084				**572,539**	**-**
Charles River Analytics Inc. - ART Provider and Patient Resource to Improve Communication about Outcomes and Treatment (APRICOT)	93.103		SC2023001	51,928	6,510
Harvard Pilgrim Health Care - Sentinel Initiative	93.103		WO2008	19,646	-
Total for Assistance Listing Number 93.103				**71,574**	**6,510**
The Board of Regents of the University of Oklahoma - TeamBirth Oklahoma (OPQIC Project)	93.110		RS20210327-01	235,556	-
Total for Assistance Listing Number 93.110				**235,556**	**-**
Arizona State University - Aflatoxin Exposure, Growth Faltering, and the Gut Microbiome among Children in Rural Guatemala	93.113		ASUB00001297	10,417	-
Beth Israel Deaconess Medical Center - A Randomized Controlled Trial of Home Air Purification for Eosinophilic COPD	93.113		1062311	17,935	-
Beth Israel Deaconess Medical Center - Maternal organophosphate pesticide exposure, low birth weight and placental injury	93.113		1060906	21,917	-
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 - Development and testing of response surface methods for investigating the epidemiology of exposure to mixtures	93.113		4500002635	27,945	-
Boston University School of Public Health - Evidence to improve heat warning effectiveness in reducing morbidity and mortality	93.113		4500003573	190,288	-
Brigham and Women's Hospital, Inc - Early Life Exposure to the Natural Built and Social Environments and Incident Hypertension	93.113		121157	312,317	-
Brigham and Women's Hospital, Inc - Exposure to phthalates and OP flame retardants and long-term maternal cardiovascular and metabolic health	93.113		127478	170,848	-
Brigham and Women's Hospital, Inc - The effects of environmental exposures on semen quality and the sperm epigenome	93.113		118582	60,065	-
Children's Hospital Boston - Arsenic-related cystic fibrosis.	93.113		GENFD0001830939	17,136	-
Children's Hospital Boston - Indoor Air Quality and Respiratory Morbidity in School-Aged Children with Bronchopulmonary Dysplasia	93.113		GENFD0002318985	50,853	-
Columbia University - Air Pollution and Pregnancy Loss	93.113		3(GG017459-01)	162,791	-
Columbia University - Effect of Early-Life Exposure to Metal Mixtures on Lung Function and Mitochondrial DNA in Children	93.113		3(GG015212-01)	18,791	-
Columbia University - Extracellular vesicles in Environmental Epidemiology Studies of Aging	93.113		1(GG017540-02)	40,853	-
Columbia University - Integrating air pollution prediction models: Uncertainty quantification and propagation in health studies	93.113		1(GG014961-01)	319,282	-
Drexel University - Examining dietary modifiers of associations between air pollution and autism-related traits	93.113		900159	90,294	-

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Emory University - Climate Penalty: Climate-driven Increases in Ozone and PM2.5 Levels and Mortality	93.113		A504190	46,155	-
Emory University - the 5-Year Effects of a 500-day Liquefied Petroleum Gas Cooking Intervention: Continued Follow Up of Participants from the Household Air Pollution Intervention Network (HAPIN) trial	93.113		A588513	2,116	-
Emory University - the 5-Year Effects of a 500-day Liquefied Petroleum Gas Cooking Intervention: Continued Follow Up of Participants from the Household Air Pollution Intervention Network (HAPIN) trial	93.113		A741292	23,028	-
Icahn School of Medicine at Mount Sinai - Methods for data integration and risk assessment for environmental mixtures	93.113		0255-A401-4609	47,346	-
Icahn School of Medicine at Mount Sinai - Novel Biomarker to Identify Critical Windows of Susceptibility to Metal Mixtures: Resubmission	93.113		0255-1871-4609	334	-
Icahn School of Medicine at Mount Sinai - Organic-metal mixtures and neurodevelopment	93.113		0255-G891-4609	32,419	-
Icahn School of Medicine at Mount Sinai - Prenatal metal mixtures and neurodevelopment: Role of placental extracellular microRNAs	93.113		0255-B981-4609	213,904	-
Icahn School of Medicine at Mount Sinai - Stress-Chemical Interactions and Neurobehavior in School Age Children	93.113		0255-5545-4609	10,457	-
New York University Langone Medical Center - Brain Influences of Phthalates and Bisphenols in Adolescents	93.113		20-A0-00-1005266	41,276	-
Rutgers, The State University of New Jersey - Ambient Air Pollution, Weather, and Placental Abruption (APWA)	93.113		2101	9,571	-
Silent Spring Institute - Expanding effective report-back of environmental exposures among new researchers and clinic-based studies.	93.113		7372-HSPH	30,960	-
University of Southern California - The role of air pollution in emotional neurodevelopment and risk for psychiatric disorders	93.113		138940130	12,701	-
University of Southern California - Urban air pollution and neurobehavioral trajectories in the ABCD study	93.113		138940268	77,773	-
University of Texas - Causal Inference with Interference for Evaluating Air Quality Policies	93.113		UTA19-000141	21,710	-
University of Utah - The Influence of Multiple Exposures on Suicide Risk	93.113		10057452-01	16,606	-
Wayne State University - Paternal preconception phthalates and reproductive health - potential mediation through sperm DNA methylation	93.113		WSU22055	56,611	-
Yale University - Statistical Methods to Account for Exposure Uncertainty in Environmental Epidemiology	93.113		GR104702 (CON-80001508)	320,636	-
Total for Assistance Listing Number 93.113				**2,495,880**	**-**
Kaiser Foundation Research Institute - Particulate Air Pollution, Cardiovascular Events, and Susceptibility Factors (PACES)	93.117		RNG209805-HSPH-01	229	-
Total for Assistance Listing Number 93.117				**229**	**-**
Case Western Reserve University - Multi-Level Interventions to Reduce Oral Health Disparities among Adults in Primary Care Settings	93.121		RES517348	15,043	-
Regents of the University of California - Los Angeles - Personalized Digital Behavior Change Interventions to Promote Oral Health	93.121		1350 G LA770	105,847	-
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	342,586	-
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	95,151	-
Virginia Commonwealth University - Epigenetic Regulation of Periodontal Inflammation	93.121		FP00010440 SA003	36,762	-
Total for Assistance Listing Number 93.121				**595,389**	**-**
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	14,381	-
Regents of the University of Minnesota - Anti-Bullying Laws and Youth Violence in the United States: A Longitudinal Evaluation of Efficacy and Implementation	93.136		P006360104	(18)	-
Total for Assistance Listing Number 93.136				**14,363**	**-**
University of Rhode Island - Assessing the Contribution of Polyfluoroakyl Precursors to Diverse PFAS Exposures near Contaminated Sites-Project 1	93.143		0009912/112822Harvard	310,693	-
University of Rhode Island - Impacts of geochemistry and transport on PFAS exposures from drinking water and fish	93.143		0006745-11317	19,480	(53)
University of Rhode Island - Sources, Transport, Exposure and Effects of Perfluoroalkyl Substances (STEEP) Center	93.143		0006746-11217	1,271	1,271
Total for Assistance Listing Number 93.143				**331,444**	**1,218**
Boston VA Research Institute, Inc. - Pragmatic randomized trial of polygenic risk scoring for common diseases in primary Care	93.172		0223FEDa	20,219	-
Brigham and Women's Hospital, Inc - Integrated pathogenicity assessment of clinically actionable genetic variants	93.172		120308	12,839	-
Brigham and Women's Hospital, Inc - Network tools to Understand Sex- and Gender-Specific Drivers of Disease	93.172		125975	149,724	-
Brigham and Women's Hospital, Inc - Predicting the impact of genetic variants, genes and pathways on human disease	93.172		126094	243,787	-
California Institute of Technology - Alliance Central: A platform for sustainable development of next generation genome knowledgebases	93.172		S454486	493,688	-
Children's Hospital Boston - Providing ethical guidance for the development of individualized genomic medicine as rare as n-of-one	93.172		GENFD0002264202	25,191	-
Columbia University - Single-Molecule Electronic Nucleic Acid Sequencing-by-Synthesis Using Novel Tagged Nucleotides and Nanopore Constructs	93.172		1(GG015773)	162,256	-
Johns Hopkins University - Direct nanopore detection of modified RNA to probe structure and dynamics	93.172		2004249613	44,108	-
Stanford University - ELSI.hub: National Center for ELSI Resources and Analysis	93.172		62424230-139696	67,210	-
The Broad Institute - A Foundational Resource of Functional Elements, TF footprints and Gene Regulatory Interactions	93.172		5001227-5500001653	443,221	-
The Feinstein Institute for Medical Research - Polygenic Embryo Screening: Towards Informed Decision-Making	93.172		AWD00001403-Harvard	212,210	-
University of Massachusetts Medical School - Predictive Modeling of the Functional and Phenotypic Impacts of Genetic Variants	93.172		SUB00000066	243,297	-
University of Utah - Calypso: a web software system supporting team-based, longitudinal genomic diagnostic care	93.172		10061038-02-HARV	22,779	-
Total for Assistance Listing Number 93.172				**2,140,529**	**-**
Brandeis University - Towards molecular mechanisms of invertebrate Gustatory Receptors	93.173		GR403926	697	-
Massachusetts Eye and Ear Infirmary - Cochlear Synaptopathy: Prevalence, Diagnosis and Functional Consequences	93.173		530045	14,856	-
Massachusetts Eye and Ear Infirmary - Cochlear Synaptopathy: Prevalence, Diagnosis and Functional Consequences	93.173		531087	71,783	-
Massachusetts Eye and Ear Infirmary - Development of Gene Therapy for Hereditary Deafness using Rational Protein Engineering	93.173		531049	112,152	-

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Massachusetts General Hospital - Enhanced gene delivery for CNS and Sensory Disorders	93.173		234217	29,092	-
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	75,050	-
Total for Assistance Listing Number 93.173				**303,630**	**-**
Brigham and Women's Hospital, Inc - Contribution of phytochemicals to gut symbiont colonization and synthesis of immunomodulatory sphingolipids	93.213		120907	94,421	-
Total for Assistance Listing Number 93.213				**94,421**	**-**
Children's Hospital Boston - Improving Child Health and Healthcare through Dissemination and Implementation of Pediatric Quality Measures	93.226		GENFD0002121570	9,998	-
Massachusetts General Hospital - Medicaid Payment Policy and Access to Care for Dual-Eligible Beneficiaries	93.226		229188	(7,554)	-
National Bureau of Economic Research - Measuring the Clinical and Economic Outcomes Associated with Delivery Systems	93.226		41610.05.33.00- HMS1	287,650	-
University of Chicago - Effects of Ambulance, Transport Distance, and Hospital Destination on Health Outcomes of Out of Hospital Medical Emergencies	93.226		FP066242	(67,376)	-
Yale University - Consumer Assessment of Healthcare Providers and Systems (CAHPS V)	93.226		CON-80003354 (GR114883)	28,171	-
Total for Assistance Listing Number 93.226				**250,889**	**-**
Beth Israel Deaconess Medical Center - Mechanisms of arousal in sleep apnea	93.233		1064246	176,260	-
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	118,468	-
Total for Assistance Listing Number 93.233				**294,728**	**-**
Allen Institute for Brain Science - A comprehensive whole-brain atlas of cell types in the mouse	93.242		2017-0570	(3,498)	-
Baylor College of Medicine - Brainshare: Sharing Data in BRAIN Initiative Studies	93.242		P700000284	12,092	-
Baylor College of Medicine - Neuroethics of aDBS Systems Targeting Neuropsychiatric and Movement Disorders	93.242		7000001555	33,491	-
Baylor College of Medicine - Pediatric Deep Brain Stimulation: Neuroethics and Decision Making	93.242		7000001720	310,318	-
Baylor College of Medicine - Polygenic Risk Scores in Child and Adolescent Psychiatry: Ethical, Clinical, and Legal Implications	93.242		7000001461	217,849	-
Bradley Hospital - What works for Whom in Pediatric OCD	93.242		712-7678	6,686	-
Brigham and Women's Hospital, Inc - In-utero exposure to psychotropic medications and the risk of neurodevelopmental disorders	93.242		119487	14,844	-
Brigham and Women's Hospital, Inc - Rare and common variants in complex disease	93.242		117943	(7,928)	-
Cambridge Health Alliance - ALACRITY for Early Screening and Treatment of High Risk Youth (E-SToRY) - Methods Core	93.242		HMS 3354-Methods	40,272	-
Cambridge Health Alliance - ALACRITY for Early Screening and Treatment of High Risk Youth (E-SToRY)- R34-2	93.242		HMS 3354-R34-2	18,226	-
Cambridge Health Alliance - ALACRITY for Early Screening and Treatment of High Risk Youth (R34- 3) Understanding the Role of Trauma Over the Life Course in Order to Improve Trauma-Informed Care	93.242		HMS 3354-R34-3	21,192	-
Cambridge Health Alliance - Medicaid Value Based Payment Models and Healthcare Equity for Adults with Serious Mental Illnesses	93.242		3304-4-HMS	39,117	-
Carnegie Mellon University - Flexible Hybrid Cloud Infrastructure for Seamless Management of HuBMAP resources	93.242		1090672-461154	10,170	-
Children's Hospital Boston - Molecular Codes for the Establishment of Functionally Segregated Dopaminergic Circuits	93.242		GENFD0002188598	272,367	-
Children's Hospital Boston - Neural-immune mechanisms and synaptic connectivity in psychiatric illness	93.242		GENFD0002315408	300,497	-
Children's Hospital Boston - Novel epigenetic mechanisms in neuronal development and cognitive function	93.242		GENFD0002188667	112,656	-
Children's Hospital Boston - Research Support Core: Complement regulation and critical periods in diverse CNS cell types	93.242		GENFD0002068128	4,469	-
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 Program on mental health-related hospitalizations and suicide among youth in a LMIC	93.242		4600009620	32,887	-
Cold Spring Harbor Laboratory - A Comprehensive Center for Mouse Brain Cell Atlas	93.242		64580521 / 64580529	578,211	-
Dimagi, Inc - A novel digital platform for measurement-based peer supervision of non-specialist providers conducting brief psychological interventions	93.242		No Award Number	60,553	-
Georgia Institute of Technology/Georgia Tech Research Corporation - Modularly built, complete, coordinate- and template-free brain atlases	93.242		AWD-003314-G1	236,376	-
Harvard Pilgrim Health Care - Sex-specific heterogeneity in genetic association studies of depression	93.242		PH000857A	49,484	-
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 - EPPHZT42	52,321	-
Luxel Corporation - Grid-Tape: A High-Throughput Platform for Brain Connectomics and Nanoscale Structural Analysis	93.242		20124	11,463	-
Massachusetts General Hospital - Cellular models of fetal neurodevelopment in maternal SARS-CoV-2 infection	93.242		242014	112,542	-
Massachusetts General Hospital - Data-driven subtyping in major depressive disorder	93.242		238763	300,716	-
Massachusetts General Hospital - Fostering diversity in the next generation of HIV researchers to improve the HIV continuum of care.	93.242		237315	84,876	-
Massachusetts General Hospital - Improved multifactorial prediction of suicidal behavior through integration of multiple datasets	93.242		233187	30,129	-
Massachusetts General Hospital - Sex Differences in Major Depression: Impact of Prenatal Stress-Immune and Autonomic Dysregulation	93.242		236501	35,194	-
Massachusetts Institute of Technology - A Molecular and Cellular Atlas of the Marmoset Brain	93.242		S4495 PO 671662	294,497	294,497
Massachusetts Institute of Technology - Multiplexed Nanoscale Protein Mapping Through Expansion Microscopy and Immuno-SABER	93.242		S5212	397,097	-
Massachusetts Institute of Technology - Structured light temporal focusing depth-resolved wide-field FLIM-FRET for in vivo synaptic imaging	93.242		S5749	51,587	-
Michigan State University - Genetic Influences on Infant Brain Development: Understanding the Developmental Origins of Mental Illness	93.242		RC112665F	28,364	-

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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	214,576	-
Purdue University - High-throughput, ultra-high resolution, multiplexed single molecule nanscopy and functional characterization of impaired neural circuits in mouse models of autism	93.242		11001055-012	187,711	-
Regents of the University of California - Irvine - Understanding neural circuits for associative memory in the lateral entorhinal cortex	93.242		2019-3822	17,875	-
Regents of the University of California - Los Angeles - Joint Genomic and Statistical Analyses of Schizophrenia and Bipolar to Decipher Genetic Susceptibility	93.242		2000GVR227	58,010	-
Regents of the University of California - San Diego - Psychiatric Genomics Consortium for PTSD	93.242		123557538	79,957	-
Regents of the University of Michigan - Development of a scalable strategy for reconstructing cell-type determined connectome of the mammalian brain	93.242		SUBK0002615	228,124	-
Regents of the University of Minnesota - Highly Portable and Cloud-Enabled Neuroimaging Research: Confronting Ethics Challenges in Field Research with New Populations	93.242		No Award Number	101,912	-
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	26,528	-
Rutgers University - New Brunswick - Real-time Intervention for Reducing Suicide Risk	93.242		942	3	-
Stanford University - Sex hormones and post-traumatic stress disorder (PTSD)	93.242		62477243-141397	89,277	-
The Broad Institute - Genetic neuroscience: How human genes and alleles shape neuronal phenotypes	93.242		5000485-5500001075	217,836	-
The Broad Institute - Genetic neuroscience: How human genes and alleles shape neuronal phenotypes	93.242		5000485-5500001103	654,441	-
The Broad Institute - Psychosis Genetics Research in Africa: Building Capacity by Investing in People	93.242		5000704-5500001338	128,149	-
The Broad Institute - Statistical methods to localize disease heritability and identify biological mechanisms	93.242		5000747-5500001474	46,131	-
The Broad Institute - Statistical methods to localize disease heritability and identify biological mechanisms	93.242		5001510-5500001234	72,012	-
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	740,536	-
The McLean Hospital Corporation - Dysregulation of Appetitive and Aversive Amygdala Circuits in Bipolar Disorder	93.242		401677	184,256	-
The McLean Hospital Corporation - Laboratory for Early Psychosis Research (LEAP) - Methods Core	93.242		401567	158,111	-
The McLean Hospital Corporation - Laboratory for Early Psychosis Research (LEAP) - Project 3	93.242		401659	27,507	-
The McLean Hospital Corporation - Laboratory for Early Psychosis Research (LEAP) – Admin Core	93.242		401568	16,455	-
The McLean Hospital Corporation - Predicting the onset of depression in at-risk adolescents from endophenotype profiles	93.242		401500	71,956	-
Trustees of Boston University - SCH: INT: Collaborative Research: Passive sensing of social isolation and loneliness: A digital phenotyping approach	93.242		4500003257	59,222	-
University of California, San Diego - Toward a human adult brain cell atlas with single-cell technologies	93.242		111911793 (S9002169)	174,520	-
University of Maryland, Baltimore - Internal Dynamics of the Postsynaptic Density	93.242		F301577-3	128,789	-
University of Maryland, College Park - Effects of Early Psychosocial deprivation on mental health in early adulthood	93.242		85120-Z0264204	52,542	-
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	23,541	-
University of North Carolina - Chapel Hill - Do dimensions of adversity differentially predict neural development and psychopathology in young children	93.242		5112038	25,596	-
University of North Carolina - Chapel Hill - PRIMARY CILIA: A SIGNALING GATEWAY TO NEURAL MODULATION	93.242		5125724	65,556	-
University of Pittsburgh - Imaging the Suicidal Mind using Neurosemantics Signatures as Markers of Suicidal Ideation and Behavior	93.242		CNVA00059460 (131200-2)	26,699	-
University of Washington - Integrated PrEP and ART delivered in Ugandan public health clinics to improve HIV and ART outcomes for HIV serodiscordant couples	93.242		UWSC10102	(80)	-
Yale University - Biopsychosocial mechanisms underlying internalizing psychopathology in a prospective, population-based cohort of sexual minority young adults	93.242		CON-80003007 (GR112951)	203,408	-
Total for Assistance Listing Number 93.242				**7,840,273**	**294,497**
RTI International - Mental Disorders Prevalence Study (MDPS)	93.243		7-312-0217186-65732L	69,786	-
Total for Assistance Listing Number 93.243				**69,786**	**-**
San Diego State University Research Foundation - Administrative Core of the CIFASD (U24)	93.273		D8574-05 SA 604A5 53253T	6,689	-
Total for Assistance Listing Number 93.273				**6,689**	**-**
Arizona State University - Unpacking Disparities in Opioid Use Disorder Treatment Quality	93.279		ASUB00001227	76,746	-
Brandeis University - Center to Improve System Performance for Substance Use Disorder Treatment	93.279		GR404456 HMS	36,026	-
Brandeis University - Center to Improve System Performance for Substance Use Disorder Treatment - Policy Core	93.279		GR404458 HMS	61,388	-
Brandeis University - Center to Improve System Performance for Substance Use Disorder Treatment -Pilot Core	93.279		GR404459 HMS	33,226	-
Brandeis University - Center to Improve System Performance for Substance Use Disorder Treatment- Research Core	93.279		GR404457 HMS	129,434	-
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	36,488	-
Johns Hopkins University - Consumer-Directed Health Plans and Substance Use Disorder Treatment	93.279		2004055395	9,988	-
Regents of the University of California - San Diego - The Healthy Brain and Child Development National Consortium Administrative Core	93.279		704935	36,065	-
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	606,043	-

The accompanying notes are an integral part of this schedule.

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Trustees of Dartmouth College - Stemming the Tide: The Role of Payment and Delivery System Reform in Combating the Opioid Epidemic	93.279		R1468	210,372	-
Total for Assistance Listing Number 93.279				**1,235,776**	**-**
COVID-19: Stanford University - COVID-19 Policy Modeling and Forecasting for Public Health Decision Making	93.283		62888823-250198	72,942	-
Total for Assistance Listing Number 93.283				**72,942**	**-**
Brigham and Women's Hospital, Inc - Optimization of ultrasound-mediated drug delivery to the brain under clinically relevant conditions	93.286		127834	45,921	-
Columbia University - Multi-tissue platform for modeling systemic pathologies	93.286		4(GG015644-06)	90,285	-
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	52,190	-
Massachusetts General Hospital - Vascularized kidney organoids on chip for efficacy and toxicity testing of somatic genome editing	93.286		238776	73,722	-
The University of Memphis - mHealth Resource Center for Discovery, Optimization, and Translations (mDOT)	93.286		A21-0019-S001-A03	162,315	-
Total for Assistance Listing Number 93.286				**424,433**	**-**
Boston College - Targeting Health Disparities through Housing Redevelopment: A Natural Experiment of Housing Quality, Stability, and Economic Integration	93.307		5111871-2	91,857	-
Brigham and Women's Hospital, Inc - Enhanced measurement and causal modeling of sleep electrophysiology to better understand sleep disparities	93.307		122194	48,358	-
Columbia University - Impact of Social Cohesion and Social Capital in PrEP Uptake and Adherence Among Transwomen of Color	93.307		2(GG014329-01)	45,549	-
Harvard Pilgrim Health Care - Sexual orientation-related disparities in obstetrical and perinatal health	93.307		AH000827	44,417	-
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	18,899	-
Massachusetts General Hospital - The Transition from Medicaid to Medicare and Impacts on Disparities in Coverage and Care	93.307		240768	25,191	-
Regents of the University of California - Irvine - Culturally Adapted Multilevel Decision Support Navigation Trial to Reduce Colorectal Cancer Disparity Among At-Risk Asian American Primary Care Patients	93.307		2021-1451	13,268	-
Regents of the University of California - Irvine - Sleep and health disparities among Asian Americans: roles of stressors and protective factors	93.307		2021-1498	28,288	-
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	17,159	-
Regents of the University of California - San Francisco - Reducing Oral Health Disparities in Children: Assessing the Multilevel Impact of a Standardized	93.307		11566sc	31,825	-
Tufts University - Social Stressors, Epigenetics and Health Status in Underrepresented Minorities	93.307		PO-EP0226726	20,237	-
University of South Florida - Epigenomic Predictors of PTSD and Traumatic Stress in an African American Cohort	93.307		6408-1149-00-A	53,840	-
Yale University - Air Pollution, Heat, Cold, and Health: Disparities in the Rural South	93.307		CON-80004083 (GR117950)	73,254	-
Yale University - Environmental Health Disparities in an Older Population	93.307		GR101389 (CON-80001010)	49,617	-
Total for Assistance Listing Number 93.307				**561,759**	**-**
Baylor College of Medicine - Ethical and Human Factors Impacting Successful Translation of Perceptual Computing to Improve Clinical Care	93.310		7000001796	34,637	-
Board of Regents of the University of Wisconsin System - Children's Respiratory and Environmental Workgroup (CREW)	93.310		2431	269,055	-
Brandeis University - Ubiquitin-independent targeted protein degradation	93.310		GR404054	1,399	-
Brigham and Women's Hospital, Inc - Multi-omic approaches to mechanisms of vitamin D, environmental influences, and the microbiome on asthma	93.310		119919	21,291	-
Carnegie Mellon University - Multiscale Analyses of 4D Nucleome Structure and Function by Comprehensive Multimodal Data Integration	93.310		1090746 - 437142	263,708	-
COVID-19: Brown University - Improved Testing for COVID-19 in Skilled Nursing Facilities: IMPACT-C	93.310		1721	(202)	-
Harvard Pilgrim Health Care - Common and distinct early environmental influences on cardiometabolic and respiratory health: Mechanisms and methods	93.310		PH000615G	234,270	-
Icahn School of Medicine at Mount Sinai - ECHO Consortium on Perinatal Programming of Neurodevelopment	93.310		0255-2299-4609	39,511	-
Massachusetts General Hospital - A Patient-Focused Collaborative Hospital Repository Uniting Standards (CHoRUS) for Equitable AI	93.310		2021A011737	6,350	-
Massachusetts General Hospital - Designer probiotics for the treatment of intestinal infection and inflammation	93.310		229595	4,061	-
COVID-19: Massachusetts General Hospital - Interactive Data Portals and Robust Analytic Tools to Wrap PASC Cohorts (iDRAW)	93.310		239079	130,719	-
COVID-19: Massachusetts General Hospital - Interactive Data Portals and Robust Analytic Tools to Wrap PASC Cohorts (iDRAW)	93.310		239079	2,254,388	-
National Alliance Against Disparities in Patient Health - AIM-AHEAD	93.310		RF00250-2022-0048	675,545	-
Regents of the University of California - Irvine - Making antibody generation rapid, scalable, and democratic through machine learning and continuous evolution	93.310		2020-1392	1,012,429	-
Regents of the University of California - San Diego - KULMAP: Human Kidney, urinary tract and lung mapping center	93.310		117273558 (S9002339)	89,634	-
UC San Diego School of Medicine - Center for Integrated Multi-modal and Multi-scale Nucleome Research	93.310		704234	380,282	-
University of California, San Diego - Center for Integrated Multi-modal and Multi-scale Nucleome Research	93.310		704233	84,886	-
University of Massachusetts Medical School - Center for 3D Structure and Physics of the Genome	93.310		OSP33133-01	220,243	-
University of North Carolina - Chapel Hill - Illuminating Function of the Understudied Druggable Kinome	93.310		5125952	584,900	-
University of Pittsburgh - Cellular Senescence Network (SenNet) Consortium Organization and Data Coordinating Center (CODCC)	93.310		AWD00004814 (136877-5)	98,965	-
University of North Texas Health Science Center - Infrastructure 1 and Research Fellowship Administration	93.310		RF00250-SUB00067	1,590,372	-

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Total for Assistance Listing Number 93.310				**7,996,443**	**-**
Brigham and Women's Hospital, Inc - Kidney Microphysiological Analysis Platforms (MAP) to Optimize Function and Model Disease	93.350		122148	92,350	-
Children's Hospital Boston - Instrumenting the Delivery System for a Genomics Research Information Commons	93.350		GENFD0002338182	164,030	-
Children's Hospital Boston - Tissue chips for precision treatment of catecholaminergic polymorphic ventricular tachycardia (UG3)	93.350		GENFD0002151032	25,311	-
Children's Hospital Boston - Tissue chips for precision treatment of catecholaminergic polymorphic ventricular tachycardia (UG3)	93.350		GENFD0002291481	8,341	-
University of Pittsburgh - ENACT: Translating Health Informatics Tools to Research and Clinical Decision Making	93.350		AWD00006171 (138487-6)	355,591	-
Total for Assistance Listing Number 93.350				**645,623**	**-**
Brigham and Women's Hospital, Inc - A Community Zebrafish Resource for Modeling GWAS Biology	93.351		119850	148,094	-
Total for Assistance Listing Number 93.351				**148,094**	**-**
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	114,191	-
Dana-Farber Cancer Institute - The Cellular Geography of Therapeutic Resistance in Cancer	93.353		1206305	197,844	-
Oregon Health and Science University - Omic and Multidimensional Spatial Atlas of Metastatic Breast and Prostate Cancers	93.353		1013337 HARVARD	535,620	-
Regents of the University of California - Davis - University of California Minority Patient-Derived Xenograft (PDX) Development and Trial Center UCaMP) to Reduce Cancer Health Disparities	93.353		A19-0791-S008	303,881	-
Total for Assistance Listing Number 93.353				**1,151,536**	**-**
Boston College - Leveraging community behavioral health services to increase vaccine uptake in Latinx adults with poor mental health	93.361		5113571-3	32,940	-
Washington University School of Medicine - Rural-Urban Disparities in Spillover Effects of COVID-19	93.361		WU-23-0592	33,204	-
Total for Assistance Listing Number 93.361				**66,144**	**-**
Scripps Research Institute - Technology to Empower Changes in Health (TECH) Network Participant Technologies Center - S4S YR4	93.368		5-54960	789,166	233,831
Total for Assistance Listing Number 93.368				**789,166**	**233,831**
Baylor College of Medicine - Integrative analysis of lung cancer etiology and risk	93.393		7000001378	92,337	-
Baylor College of Medicine - Integrative Analysis of Lung Cancer Etiology and Risk	93.393		700000128	49,698	-
Brigham and Women's Hospital, Inc - Accelerating Transdisciplinary Epidemiology of Colorectal Cancer	93.393		121840	13,205	-
Brigham and Women's Hospital, Inc - Comprehensive characterization of prostate stromal gene expression and association with lethal prostate cancer	93.393		118830	44,662	-
Brigham and Women's Hospital, Inc - Decoding mechanisms underlying metabolic dysregulation in obesity and digestive cancer risk	93.393		127984	26,318	-
Brigham and Women's Hospital, Inc - Helicobacter Infection and Liver Cancer Risk among African Americans and Whites in the United States	93.393		125785	50,656	-
Brigham and Women's Hospital, Inc - Multidisciplinary Study of Folate Intake and Colorectal Cancer	93.393		125945	27,247	-
Brigham and Women's Hospital, Inc - Perfluoroalkyl Substances (PFASs) and Liver Cancer Risk in the United States	93.393		127445	32,730	-
Columbia University - Comparative modeling of gastric cancer disparities and prevention in the US and globally	93.393		5-GG015389-01	61,854	-
Dana-Farber Cancer Institute - A functional genomic approach to identification and interpretation of germline-tumor genetic interactions	93.393		1201305	104,744	-
Dana-Farber Cancer Institute - Adapting and evaluating a brief advice tobacco intervention in high-reach, low-resource settings in India	93.393		1311504	72,430	-
Dana-Farber Cancer Institute - Discovering substrates of Adenomatous Polyposis Coli (APC) protein	93.393		1138814	51,545	-
Duke University - Structural Racism and Biological Embodiment of Risk in Breast Cancer Mortality	93.393		303001543	24,963	-
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	79,187	-
Health Research, Inc. - Consortium on Methods Evaluating Tobacco (COMET): Filter Ventilation and Product Standards	93.393		289-01	29,707	-
Indiana University - Integrative functional characterization of genetic loci for cutaneous basal cell carcinoma	93.393		8766	(162)	-
Lawrence Berkeley National Lab - Structural Cell Biology of DNA Repair Machines	93.393		7615189	67,484	-
Memorial Sloan Kettering Cancer Center - The Impact of DNA Damage Repair Abnormalities in Prostate Cancer	93.393		SB00000316AM3	99,042	-
Regents of the University of Michigan - Detecting Racial Disparities in Cancer Survival by Integrating Multiple High-Dimensional Observational Studies	93.393		SUBK00018559	24,754	-
Regents of the University of Michigan - New Statistical Methods for Modelling Cancer Outcomes	93.393		SUBK00012669	19,779	-
Regents of the University of Minnesota - Role of RBBP4/p300 in recovery from therapy induced DNA damage in glioblastoma	93.393		P010011201	45,565	-
Region Hovedstaden - Prenatal Exposure to Endocrine Disrupting Chemicals and Risk of Testicular Cancer	93.393		A236816	41,776	-
Research Foundation of CUNY (City University of New York) - Exploiting public metagenomic data to uncover cancer/microbiome relationships	93.393		CM00005126	148,056	-
St. Jude Children's Research Hospital - Role of the SWI/SNF complex in tumor suppression	93.393		11226011A-8117580	76,354	-
St. Jude Children's Research Hospital - The Function of Snf5 (SMARCB1), an Epigenetic Tumor Suppressor	93.393		11226119A-8134539	51,418	-
Stanford University - Evaluation of genetic, clinical, and environmental risk factors to establish effective screening strategies for second primary lung cancer	93.393		61958611-130956	(679)	-
University of Pennsylvania - PROJECT RESIST: Increasing Resistance to Tobacco Marketing Among Young Adult Sexual Minority Women Using Inoculation Message Approaches	93.393		580371	62,918	-
University of Southern California - Increasing Access to Genetic Testing in Underserved Patients Using a Multilingual Conversational Agent	93.393		SCON-00003706	45,727	-
University of Southern California - Leveraging Diversity in Cancer Epidemiology Cohorts and Novel Methods to Improve Polygenic Risk Scores	93.393		SCON-00003753	84,875	-

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Harvard University
Schedule of Expenditures of Federal Awards
Year Ended June 30, 2023

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
University of Texas - Dallas - A Bayesian Meta-Analysis Approach for Estimation of Penetrance and its Application to PALB2 gene for Breast Cancer Risk	93.393		1907701	9,783	-
University of Washington - Leveraging cross-cancer shared heritability to better understand the genetic architecture of cancer	93.393		UWSC11959	171,838	-
Weill Medical College of Cornell University - Prediagnostic exposures, germline genetics, and triple negative breast cancer mutational and immune profiles	93.393		221964-4	116,741	-
Total for Assistance Listing Number 93.393				**1,826,552**	**-**
Fred Hutchinson Cancer Center - Statistical Methods for Prospective Evaluation of Biomarkers	93.394		1121030	60,247	-
RareCyte, Inc. - Rapid highly multi-plexed immuno-profiling of solid tumors by SpectralEdge imaging	93.394		2R44CA224503-02SUB	177,556	-
Total for Assistance Listing Number 93.394				**237,803**	**-**
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	87,993	-
Brigham and Women's Hospital, Inc - Project 2: Combining Immune Checkpoint Blockade with T cell Activation	93.395		124415	65,507	-
Massachusetts General Hospital - Abbreviated Targeted Therapy to Improve Anti-PD-1 Inhibitor Efficacy in Melanoma	93.395		232616	(81,194)	-
Massachusetts General Hospital - Strategies to Overcome Immune Resistance in Head and Neck Cancers	93.395		235469	16,334	-
Massachusetts General Hospital - Transcriptional mechanisms and melanoma - Project 2	93.395		235351	397,603	-
Regents of the University of Michigan - Novel use of mHealth data to identify states of vulnerability and receptivity to JITAIs	93.395		SUBK00008226	11,794	-
Stanford University - CDK7 R01 : Targeting CDK7 in CCNE1-amplified Ovarian Cancer	93.395		62839397-221674	293,841	-
Total for Assistance Listing Number 93.395				**791,878**	**-**
Brigham and Women's Hospital, Inc - Identifying new therapeutic avenues to selectively target tumors with uncontrolled mTORC1 activation	93.396		120102	262,766	-
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	191,087	-
Dana-Farber Cancer Institute - Developing Informatics Technologies to Model Cancer Gene Regulation	93.396		1170704	81,085	-
Massachusetts General Hospital - Designer EcN for treatment of solid tumors	93.396		240531	27,652	-
Massachusetts General Hospital - Prebiotic effect of eicosapentaenoic acid treatment for colorectal cancer	93.396		236707	185,433	-
Massachusetts General Hospital - Reverse transciptase inhibitor effects on the mobillome of colon cancer	93.396		234829	84,585	-
Memorial Sloan Kettering Cancer Center - The cBioPortal for Cancer Genomics	93.396		MSKSUB00000152	107,392	-
Regents of the University of California - Davis - Biological implications of breast cancer protective variants in Latin American women with high Indigenous American ancestry	93.396		A21-2136-S001	14,007	-
Sage Bionetworks - Multi-Consortia Coordinating Center (MC2 Center) for Cancer Biology: Building Interdisciplinary Scientific Communities, Coordinating Impactful Resource Sharing, and Advancing Cancer Research	93.396		2022.7	123,658	-
University of Pittsburgh - Pathogenesis of Cancer - Role of EGF Receptor Endocytosis	93.396		AWD00001291 (133630-1)	43,685	-
University of Texas Southwestern Medical Center - Imaging mechanisms of metastatic colonization in situ.	93.396		PO: 0000002520A	345,228	-
Total for Assistance Listing Number 93.396				**1,466,578**	**-**
Beth Israel Deaconess Medical Center - Discovery and Characterization of Immune Targets to Enhance PD-1/VEGFR2 Directed Therapy	93.397		GRT65039	22,770	-
Dana-Farber Cancer Institute - 2/2 The UMB-DF/HCC U54 Comprehensive Partnership for Cancer Disparities Research	93.397		1217812	109,551	-
Dana-Farber Cancer Institute - 2/2 The UMB-DF/HCC U54 Comprehensive Partnership for Cancer Disparities Research	93.397		1323711	111,070	-
Dana-Farber Cancer Institute - A National Evaluation of Cancer Centers' Use of Evidence-Based Interventions in Community Outreach and Engagement	93.397		1311058	5,441	-
Dana-Farber Cancer Institute - Cancer Center Support Grant	93.397		HSPH-56	(670)	-
Dana-Farber Cancer Institute - Cancer Center Support Grant	93.397		HSPH-58	399,131	-
Dana-Farber Cancer Institute - Dana Farber/ Harvard Cancer Center SPORE in Gastrointestinal Cancer	93.397		1132214	32,198	-
Dana-Farber Cancer Institute - Dana-Farber/Harvard Cancer Center Ovarian Cancer SPORE Grant	93.397		1316303	157,365	-
Dana-Farber Cancer Institute - Dana-Farber/Harvard Cancer Center SPORE in Breast Cancer	93.397		1230009	9,788	-
Dana-Farber Cancer Institute - Dana-Farber/Harvard Cancer Center Support Grant	93.397		HMS-56	(1,729)	-
Dana-Farber Cancer Institute - Dana-Farber/Harvard Cancer Center Support Grant	93.397		HMS-58	1,021,020	-
Dana-Farber Cancer Institute - Development of degraders for novel targets in ovarian cancer	93.397		1316903	94,048	-
Dana-Farber Cancer Institute - DF/HCC SPORE in Gastrointestinal Cancer	93.397		1132414	94,032	-
Total for Assistance Listing Number 93.397				**2,054,015**	**-**
Association of State and Territorial Health Officials - ASTHO Resiliency Project	93.421		00-FE-2096-05-00	218,554	-
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	66,468	-
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 2),"	93.421		00-FE-2700-04-00	458,479	232,765
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	450,563	151,123
Total for Assistance Listing Number 93.421				**1,194,064**	**383,888**
Shirley Ryan AbilityLab - Collaborative Machines Enhancing Therapies (COMET)	93.433		7247	65,306	-
Syracuse University - Employment Policy Research and Resource Center (EPRRC)	93.433		31838-05703-S01	200,366	-
The Spaulding Rehabilitation Hospital Corporation - Spaulding-Harvard Traumatic Brain Injury Model System	93.433		500626	12,327	-

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Harvard University
Schedule of Expenditures of Federal Awards
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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
Total for Assistance Listing Number 93.433				**277,999**	**-**
COVID-19: Boston Public Health Commission - Community Health Workers for Covid Response and Resilient Communities (CCR)	93.495		FY23024260	69,391	-
Total for Assistance Listing Number 93.495				**69,391**	**-**
Denver Health and Hospital Authority - Mountain Plains Regional Disaster Health Response System	93.817		A20-0137-S002	78,087	-
Massachusetts General Hospital - MA/Region 1 Partnership for Regional Health Disaster Response	93.817		241937	6,518	-
Nebraska Medicine - Nebraska-Region 7 Partnership for Regional Health Disaster Response	93.817		1003054-GR30541130	90,971	-
Total for Assistance Listing Number 93.817				**175,576**	**-**
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	23,659	-
Brigham and Women's Hospital, Inc - Adipose Dependent Mechanisms of Dietary Protein Restriction Protective Effects on Vein Graft	93.837		115081	182	-
Brigham and Women's Hospital, Inc - Boston Biomedical Innovation Center	93.837		114756	1,273	-
Brigham and Women's Hospital, Inc - Cardiac exosomes in myocardial ischemic injury	93.837		123168	5,951	-
Brigham and Women's Hospital, Inc - Genomics of Post-op Atrial Fibrillation After Cardiac Surgery	93.837		125218	225,951	-
Brigham and Women's Hospital, Inc - Risk Factors of CVD in Women	93.837		120938	57,516	-
Brigham and Women's Hospital, Inc - Targeted immune therapies in heart transplantation	93.837		128575	3,281	-
Brigham and Women's Hospital, Inc - Using Metabolomics to Understand CVD Risk in Women with a History of Preterm Delivery	93.837		125858	138,632	-
Children's Hospital Boston - Computational Prioritization of Coding and Non-Coding Variants in Congenital Heart Disease	93.837		GENFD0002243723	35,846	-
Children's Hospital Boston - Exploring the relationship between advanced multimodal brain MRI phenotypes, genes and cognitive outcome in adults with CHD	93.837		GENFD0002346786	93,079	-
Children's Hospital Boston - Pathogenesis of Dyslipidemia and Atherosclerosis in the Diabetic State	93.837		GENFD0002257447	120,558	-
Columbia University - Phosphorylation-dependent regulation of calcium channels by macromolecular complexes	93.837		1(GG015807-01)	2,879	-
Duke University - Mechanisms of Maladaptation in Heart Failure	93.837		A032119	45,899	-
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 Cardiovascular Health	93.837		AH000766	68,446	-
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-C314-4609	35,422	-
Lawrence Berkeley National Lab - In vivo Characterization of Regulatory Variant Pathogenicity in Congenital Heart Disease	93.837		7631203	69,692	-
Massachusetts General Hospital - Clonal hematopoiesis of indeterminate potential and HIV in the REPRIEVE trial	93.837		237407	6,222	-
Massachusetts General Hospital - Identifying novel cardiopulmonary disease intervention targets among people with HIV in rural sub-Saharan Africa	93.837		232954	(674)	-
Massachusetts General Hospital - Mechanisms of Cardiac Dysfunction in HIV and the Effect of Statins	93.837		230744	31,093	-
Massachusetts General Hospital - Reducing Arterial Inflammation and Improving Metabolic Health by Dual CCR2 and CCR5 Antagonism in People Living with HIV	93.837		237424	41,627	-
Massachusetts General Hospital - REPRIEVE CCC	93.837		236575	429,457	-
Regents of the University of California - San Francisco - Predicting and preventing drug metabolism by the human gut microbiome	93.837		13030sc	48,611	-
Stanford University - Precision Medicine by Harmonizing Real World Evidence and RCT Data	93.837		62356619-44738	146,480	-
The Broad Institute - Cardiovascular disease, metabolic syndrome, microbes and metabolites in FHS	93.837		5001356-5500001682	232,093	-
Tufts University - Cost-Effectiveness of Health System and State-Level Strategies to Improve Diet and Reduce Cardiometabolic Diseases	93.837		NH0001	48,226	-
University at Buffalo (State University of New York) - Cardiac Toxicity in Perinatally HIV-Infected Adolescents and Young Adults, a Longitudinal Study	93.837		R1186469	98,241	-
University of Florida - Bayesian machine earning for complex missing data and causal inference with a focus on cardiovascular and obesity studies	93.837		SUB00003698	3,671	-
University of North Carolina - Bringing Covid Data to the BioData Catalyst Ecosystem	93.837		5120206	101,142	-
Washington University School of Medicine - The Impact of Bundled Payments for Cardiopulmonary Disease on High-Risk Populations	93.837		WU-20-85-MOD-4	153,155	-
Total for Assistance Listing Number 93.837				**2,267,610**	**-**
Brigham and Women's Hospital, Inc - Genetic Epidemiology of COPD (2 of 2)	93.838		117868	36,506	14,954
Brigham and Women's Hospital, Inc - Interstitial Lung Abnormalities: Defining the Phenotype, Causes, and Consequenses	93.838		120957	53,911	-
Brigham and Women's Hospital, Inc - Systems Biology of Airway Disease	93.838		115975	15,728	-
Children's Hospital Boston - Cell-cell interactions governing lung epithelial progenitor cells	93.838		GENFD0002164432	7,683	-
Children's Hospital Boston - Environmental Risk Factors for Pediatric Sleep Disordered Breathing	93.838		GENFD0001858748	15,949	-
Regents of the University of California - San Diego - Genomics and Pharmacogenomics of Symptoms in Asthma	93.838		KR705129	196,733	-
Weill Medical College of Cornell University - Distinct and Overlapping Pathways of Fibrosis and Emphysema in Cigarette Smokers	93.838		222850-06	112,750	-
Total for Assistance Listing Number 93.838				**439,260**	**14,954**
Children's Hospital Boston - Bone Marrow Spatial Transcriptomics to Enhance In Vitro Platelet Production	93.839		GENFD0002251204	66,136	-
Massachusetts General Hospital - Functional dissection of clonal hematopoiesis	93.839		230441	3,522	-
University of Maryland, College Park - Relationship of ambient air pollution exposures with vaso-occlusive pain crises in sickle cell disease	93.839		66027-Z0155201	65	-
University of Massachusetts Medical School - Novel Growth Factor Regulators of Early Erythropoieisis	93.839		OSP2018073	16,954	-
University of Pennsylvania - Vascular delivery of nanocarriers by erythrocytes	93.839		574882	(33,729)	-
Total for Assistance Listing Number 93.839				**52,948**	**-**

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Harvard University
Schedule of Expenditures of Federal Awards
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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
Brigham and Women's Hospital, Inc - Acid-Base Status as a Novel Risk Factor for Fractures	93.846		121220	43,610	-
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	102,387	-
Brigham and Women's Hospital, Inc - Development of enthesopathy in the mouse model of X-linked hypophosphatemia	93.846		124725	18,086	-
Brigham and Women's Hospital, Inc - Studying exceptional treatment non-responders and genetics to predict treatment response in rheumatoid arthritis	93.846		125580	52,231	-
Brigham and Women's Hospital, Inc - VERITY: Value and Evidence in Rheumatology using bioInformaTics, and advanced analytics	93.846		118064	25,268	-
Children's Hospital Boston - Cfp1 Action in Cartilage Development	93.846		GENFD0002253902	8,539	-
Children's Hospital Boston - Defining the human articular chondrocyte lineage	93.846		GENFD0002328849	18,496	-
Massachusetts General Hospital - Investigating the direct reprogramming of fibroblasts into skeletal muscle progenitors	93.846		237246	34,433	-
Massachusetts General Hospital - Posttranscriptional control of epidermal progenitors senescence	93.846		234150	107,953	-
Massachusetts General Hospital - Regulation of Axin2-expressing cells in the adult tendon	93.846		241147	1,562	-
Trustees of Boston University - Sustained Release Relaxin-2 for the Treatment of Frozen Shoulder	93.846		4500004416	151,486	-
Trustees of Boston University - The Conundrum of Absentee Receptors: Efficacy Potentiation Through Drug-Receptor Modulation	93.846		4500004646	8,102	-
University of North Carolina - Chapel Hill - Collaborative Utilization and Assessment of Biomechanics Technologies Within the BACPAC Consortium	93.846		5126159	59,756	-
Total for Assistance Listing Number 93.846				**631,909**	**-**
Albert Einstein College of Medicine - Metabolomics signatures underlying diet, lifestyle and gut microbiota for diabetes	93.847		311433	157,200	-
Beth Israel Deaconess Medical Center - Generation of a Cellular Atlas of Adipose Tissue in Mouse and Man	93.847		1060496	383,555	-
Beth Israel Deaconess Medical Center - Leveraging the Rich Genetic Diversity of Vagal Motor Neurons to Decode Brain-to-Gut Communication	93.847		1061842	567,782	-
Boston Medical Center - Boston Obesity Nutrition Research Center	93.847		6750	(11,846)	-
Brigham and Women's Hospital, Inc - A microbiome-dependent bile acid metabolite improves type 2 diabetes	93.847		124675	346,851	-
Brigham and Women's Hospital, Inc - Circulating plasma metabolites, diet, and risk of type 2 diabetes	93.847		118780	44,496	-
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	33,079	-
Brown University - Asprosin, Body Weight, and Risk of Type 2 Diabetes in Men and Women	93.847		1627	26,131	-
Buck Institute for Research on Aging - The B Cell Insulin Receptor in Health and in Insulin Resistance	93.847		SA48002-HU	53,539	-
Children's Hospital Boston - Assessing the relationship between environmental enteric dysfunction and poor growth via a newly developed 11-plex array	93.847		GENFD0001888578	344	-
Children's Hospital Boston - Integrated Epithelial and Muscosal Biology	93.847		GENFD0002063533	36,355	-
Children's Hospital Boston - Integrated Epithelial and Muscosal Biology	93.847		GENFD0002063534	56,250	-
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	42,487	-
Children's Hospital Boston - Molecular Circuits in the Hematopoietic Stem Cell Niche	93.847		GENFD0002214910	390,399	-
Duke University - Duke: Microbial regulation of intestinal lipid metabolism and its physiological consequences	93.847		303000251	48,706	-
Harvard Pilgrim Health Care - New Insights into the Federal Calorie Labeling Law	93.847		AH000668	84,649	-
Jaeb Center for Health Research Foundation, Inc - MD-PSCH Clinical Acceptance of the Artificial Pancreas: The International Diabetes Closed Loop (iDCL) Trial	93.847		DCLP4	(4,737)	-
Massachusetts General Hospital - A Prospective Study of Lifestyle, the Gut Microbiome, and Diverticulitis	93.847		235385	115,048	-
Massachusetts General Hospital - Center for the Study of Inflammatory Bowel Disease	93.847		238642	25,484	-
Massachusetts General Hospital - Creating Opportunities for Underrepresented Researchers to Achieve Growth and Excellence (COURAGE)	93.847		241424	27,916	-
Massachusetts General Hospital - Identification of immunometabolic alterations in adipo-pulmonary axis to treat obesity related asthma	93.847		231091	3,515	-
Massachusetts General Hospital - Investigating how coordinated response from nAchRs and gap junctions promotes healing of the intestinal epithelium	93.847		238644	36,862	-
Massachusetts General Hospital - The role of macrophages in disease tolerance	93.847		238644	32,793	-
Regents of the University of California - Food Insecurity, Poor Diet, and Metabolic Syndrome: Cortisol's Amplifying Role	93.847		0875-G-LA484	10,140	-
Regents of the University of Michigan - KPMP Kidney Mapping and Atlas Project (KMAP)	93.847		SUBK00016235	46,634	-
The Broad Institute - A comprehensive platform for novel therapy development from the microbiome	93.847		5000472-5500001054	362,479	-
Tulane University - Nutrigenetics and Nutrigenomics for Precision Weight-Loss Diet Interventions	93.847		TUL-HSC-560241-21/22	58,200	-
Tulane University - Obesity Genes, Energy Regulation in Response to Weight-Loss Diets	93.847		TUL-HSC-556619-18/19	18,226	-
Tulane University - Weight-Loss Diet Intervention on Cardiometabolic Factors of Gut Microbiota	93.847		TUL-HSC-558086-19-20	36,478	-
University of Alabama - Effect of Pitavastatin on Kidney Function in HIV-infected Persons	93.847		000509533-SC005	5,949	-
University of Kansas Medical Center Research Institute - Role of claudin-2 in calcium homeostasis and kidney stone disease	93.847		ZAY00030-GR12396	(7,714)	-
University of Massachusetts Medical School - Humanized Mouse Avatars for T1D	93.847		OSP30522-03	58,680	-
University of Texas - Austin - Robust Statistical Methods to Identify and Use Surrogate Markers in Diabetes	93.847		UTAUS-SUB00000525	21,574	-
Yale University - Data and Biostatistics Core : Amazon Center of Excellence in Malaria Research	93.847		CON-80004308 (GR119845)	92,674	-
Total for Assistance Listing Number 93.847				**3,200,178**	**-**

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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
Beth Israel Deaconess Medical Center - The functional neuroanatomy of the human physiological stress response	93.853		1061570	11,536	-
Brigham and Women's Hospital, Inc - Cell and Molecular Consequences of Alzheimer's Disease Genetic Variants on BBB Integrity and Function	93.853		124009	442,728	-
Brigham and Women's Hospital, Inc - α-synuclein membrane vs. cyotosol excess: two different pathways to synucleinopathy	93.853		125138	5,258	-
California Institute of Technology - A Brain Circuit Program for Understanding the Sensorimotor Basis of Behavior	93.853		S397744	409,991	339,871
California Institute of Technology - Comprehensive Analysis of a Decision Circuit	93.853		S447071	11,508	-
California Institute of Technology - Neural representation of mating partners by male C. elegans	93.853		S447423	204,831	-
Children's Hospital Boston - Cell Identity Determination In Human Brain: Somatic mutation and cell lineage	93.853		GENFD0002256385	116,853	-
Columbia University - Project 2 - Neural Basis of Motor Pattern Loops	93.853		1(GG012999-05)	90,381	-
Lawrence Berkeley National Lab - Chemical Fingerprinting: cell-type specific DNA repair in the brain	93.853		7527795	83,349	-
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 and disease change	93.853		238666	39,826	-
Massachusetts General Hospital - Cortical-Basal Ganglia Speech Networks	93.853		237602	18,893	-
Massachusetts General Hospital - Simultaneous functional MRI and Micro-Magnetic Nervous System Stimulation	93.853		238936	271,928	-
New York University - Mechanisms of synaptic dopamine signaling in the control of behavior	93.853		20-A0-00-1004068	315,737	-
New York University Langone Medical Center - Project 3: Cracking the Olfactory Code	93.853		19-A0-00-1002081	316,804	-
New York University Langone Medical Center - Project 4: Cracking the Olfactory Code	93.853		19-A0-00-1002081	482,431	-
New York University School of Medicine - Development and Function of 5HT3aR-Expressing Cortical GABAergic Interneurons (Project 1)	93.853		18-A1-00-008334	289,242	-
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	259,038	-
Stanford University - Automated Phenotyping in Epilepsy	93.853		62389164-143494	339,368	-
Stanford University - Project 3- Neural Basis of Sensory-Guided Actions	93.853		61745076-130506	(326)	-
Tufts Medical Center - Discovery of the Biomarker Signature for Neuropathic Corneal Pain	93.853		5017155-SERV	1,208	-
Tufts Medical Center - Discovery of the Biomarker Signature for Neuropathic Corneal Pain	93.853		5023848-SERV	13,412	-
University of Massachusetts - Lowell - The Gut Microbiome In Parkinson Disease	93.853		S51110000036435	29,781	-
University of Miami - Clinical Research in ALS and related disorders for Therapeutic Development (CReATe)	93.853		OS00000671	15,988	-
University of North Carolina - Bcl-xL-regulated apoptosis in cerebellar development and medulloblastoma treatment	93.853		5110620	(851)	-
University of Pittsburgh - Integrating EHR and Genomics to Predict Multiple Sclerosis Drug Response	93.853		AWD00002658 (135057-1)	1,655	-
University of Pittsburgh - Leveraging electronic health records to optimize treatment selection and response in multiple sclerosis	93.853		AWD00006595 (138681-2)	71,152	-
University of Rochester - U19 Data Science Core	93.853		417832-G / UR FAO GR511106	318,837	-
University of Rochester - U19 Project A (theory project)	93.853		417833G / UR FAO GR511107	242,173	-
Total for Assistance Listing Number 93.853				**4,402,731**	**339,871**
Beth Israel Deaconess Medical Center - Ad26 Based Therapeutic Vaccines for HIV	93.855		1064175	56,329	-
Beth Israel Deaconess Medical Center - Viral dynamics of rebound and control following early treatment of HIV/SIV	93.855		1062673	(6,597)	-
Board of Regents of the University of Wisconsin System - Novel antimicrobials targeting MDR pathogens from animal microbial symbionts	93.855		2913	645,902	-
Board of Regents of the University of Wisconsin System - Novel antimicrobials targeting MDR pathogens from animal microbial symbionts	93.855		2914	217,755	-
Boston College - Comparative systems biology of apicomplexan cell division	93.855		5113071 -02	277,070	-
Brandeis University - The molecular and cellular basis of short-range host cue sensing in mosquito vectors	93.855		GR404067	178,234	-
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	10,472	-
Brigham and Women's Hospital, Inc - Brush cell sensing of aeroallergen-elicited stress signals promotes epithelial cell activation	93.855		125040	16,518	-
Brigham and Women's Hospital, Inc - Gut symbiotic microbiota-derived CD1d ligands and their immunomodulatory mechanisms	93.855		127395	44,433	-
Brigham and Women's Hospital, Inc - HIV-2 latency and its reversal	93.855		126055	129,483	-
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 drug-susceptible tuberculosis	93.855		127798	47,185	-
Brigham and Women's Hospital, Inc - The Structural Basis of Homo- and Heterodimerization of Two Chemokine Receptors: Implications in HIV-1 Cell Entry	93.855		126003	667	-
Children's Hospital Boston - Decidual NK response to infection	93.855		GENFD0002193900	311,144	-
Children's Hospital Boston - Genome-wide CRISPR-Cas9 screens in insect cells to characterize insecticidal toxins	93.855		GENFD0002209988	411,007	-
Children's Hospital Boston - Immunobiology of Influenza Virus-related Critical Illness in Young Hosts	93.855		GENFD0002065776	88,855	-
Children's Hospital Boston - Structural Basis of Coreceptor Recognition by HIV-1 Envelope Spike	93.855		GENFD0002176483	6,823	-
Children's Hospital Boston - Structure-function analysis of infection- and vaccine-induced B-cell repertoires	93.855		GENFD0002318497	117,272	-
Children's Hospital Boston - Structure-function studies of the membrane-interacting domains of HIV-1 Env spike	93.855		GENFD0002287554	333,792	-
COVID-19: FHI Development 360 - CoVPN 3008: Multi-Center, Randomized, Efficacy Study of COVID-19 mRNA	93.855		PO21002249	565,063	565,063
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	44,963	-
COVID-19: Regents of the University of California - Los Angeles - A5404- Leadership and Operations Center (LOC), AIDS Clinical Trials Group (ACTG)	93.855		1560GZA068	128,008	-

Harvard University
Schedule of Expenditures of Federal Awards
Year Ended June 30, 2023

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
COVID-19: Regents of the University of California - Los Angeles - Leadership and Operations Center (LOC), AIDS Clinical Trials Group (ACTG)	93.855		1560-G-LA035	193,690	-
COVID-19: Regents of the University of California - Los Angeles - Leadership and Operations Center (LOC), AIDS Clinical Trials Group (ACTG) [A5401]	93.855		1560GLC344	148,543	-
Dana-Farber Cancer Institute - Biology and structure of pMHC receptors functioning as mechanosensors in the ab T-cell lineage	93.855		1313703	203,110	-
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		1288602	310,905	-
Drexel University - Molecular pathways affected by drugs that disrupt Na+ and lipid homeostasis in malaria parasites	93.855		900273	26,786	-
Emory University - Deep spatial immune profiling of granulomas and M. tuberculosis adaptation to disease and treatment	93.855		A595775	87,519	-
Emory University - Resetting immune homeostasis: a non-invasive approach towards HIV eradication	93.855		A567110	53,323	-
FHI Development 360 - HPTN 084	93.855		PO21002345	348,155	348,155
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	7,888	-
Global Alliance for TB Drug Development - Discovery of inhibitors that target the Mtb ClpP1P2 protease	93.855		2115	465,469	-
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	76,472	-
Health Research, Inc. - Latitudinal Landscape Genomics and Ecology of Anopheles darlingi	93.855		6511-01	30,635	-
Johns Hopkins University - Pediatric Adolescent Virus Eradiation (PAVE) Martin Delaney Collaboratory	93.855		2005379996	10,139	-
Johns Hopkins University - The Johns Hopkins University - Uganda Clinical Trials Unit	93.855		2005004239	555	-
Massachusetts Eye and Ear Infirmary - Compounds and Strategies for Treating MRSA and VRE	93.855		530539	(14,851)	-
Massachusetts Eye and Ear Infirmary - Harvard-wide Program on Antibiotic Resistance	93.855		531031	751,225	-
Massachusetts Eye and Ear Infirmary - Subproject: Compounds and pathways for antibacterial combinations	93.855		531043	278,292	-
Massachusetts General Hospital - Cost Effectiveness of Preventing HIV Complications	93.855		236800	67,783	-
Massachusetts General Hospital - Novel Methods to Inform HIV/TB Clinical Trial Development	93.855		237011	42,871	-
Massachusetts General Hospital - Optimizing HIV Care in Less Developed Countries	93.855		233034	73,249	-
Massachusetts General Hospital - Temporal Phenotypes and Risk Models for the Post-COVID Syndrome and its sub-types	93.855		241499	8,302	-
Northeastern University - A general mechanism of persister formation	93.855		500637-78050	84,595	-
Oklahoma Medical Research Foundation - Disease and Race Specific Single-cell Epigenetic Mechanisms in Human SLE	93.855		0340-01	64,286	-
Regents of the University of California - Los Angeles - Leadership and Operation Center (LOC), AIDS Clinical Trial Group (ACTG)	93.855		1560-G-LA223	34,060	-
Regents of the University of California - Los Angeles - Leadership and Operations Center (LOC), AIDS Clinical Trials Group (ACTG)	93.855		1560-G-LC089	33,005	-
Regents of the University of California - Los Angeles - Leadership and Operations Center (LOC), AIDS Clinical Trials Group (ACTG)	93.855		1560GYC332	399,194	-
Regents of the University of California - Los Angeles - Leadership and Operations Center (LOC), AIDS Clinical Trials Group (ACTG)	93.855		1560GYC333	22,563	-
Regents of the University of California - San Diego - Center for AIDS Research, Biostatistics and Modeling (BAM) Core	93.855		104237211-004	39,494	-
Regents of the University of California - San Diego - Defining the resistome in P. falciparum: evolution and mechanism	93.855		705800	107,379	-
Regents of the University of California - San Diego - Revealing Reservoirs during Rebound (R3)	93.855		93420631	12,352	-
Regents of the University of California - San Francisco - Duration Randomized Anti-MDR-TB and Tailored Intervention Clinical Trial	93.855		12461sc	19,651	-
Regents of the University of Michigan - Center for Structural Biology of HIV RNA	93.855		SUBK00016294	303,118	-
Rutgers, The State University of New Jersey - Feasibility of Novel Diagnostics for TB in Endemic Countries (FEND for TB)	93.855		1996	73,214	-
Stanford University - Big Data Analysis of HIV Risk and Epidemiology in Sub-Saharan Africa	93.855		61499525-123298	3,369	-
Texas A and M Research Foundation - Structure-based Discovery of Critical Vulnerabilities of Mycobacteria	93.855		M1803704	314,117	-
The Broad Institute - A general, virus-free platform to rapidly map SARS-CoV-2 drug resistance	93.855		5001097-5500001698	(1,117)	-
The Broad Institute - Advancing Genomic Technologies to Combat Infectious Disease: Mapping Dynamics within Single Cells, Individual Hosts, and Global Populations	93.855		5000578-5500001280	306,257	-
The Broad Institute - Advancing Genomic Technologies to Combat Infectious Disease: Mapping Dynamics within Single Cells, Individual Hosts, and Global Populations	93.855		5000579-5500001281	18,026	-
The Broad Institute - Identification and characterization of microbial metabolites in immunity	93.855		5001423-5500001861	307,715	-
The Broad Institute - Innovative technologies to transform antibiotic discovery	93.855		5001434-5500001346	210,356	-
Tufts Cummings School of Veterinary Medicine - Myeloid-Derived Suppressor Cells in Tuberculosis Granuloma Structure and Function	93.855		103539-00001	34,253	-
Tufts University - Single-cell factors of tuberculosis drug tolerance during adaptation to environmental stressors	93.855		103346	88,279	-
University of California, San Diego - Automation and Evaluation of Real-Time Transmission Network-Based HIV Prevention Services in New York City	93.855		99689314	27,375	-
University of California, San Diego - Leaving, Coming, and Staying HIV Obligate Microenvironments (HOME)	93.855		KR705293	39,196	-
University of California, San Diego - Mechanisms of CMV Replication on HIV Persistence	93.855		705950	8,848	-
University of California, San Diego - Primary Infection Resource Consortium (PIRC)	93.855		93599352	59,742	-
University of Maryland, Baltimore - A Genomics Based Investigation of the Determinants of Polymicrobial Infectious Disease Outcomes	93.855		18922 Req: 1578	94,005	-
University of Maryland, Baltimore - The Tick Immune Response During Microbial Infection	93.855		20774	74,204	-
University of Massachusetts Medical School - Systems Genetics of Tuberculosis	93.855		OSP2018035	268,962	-
University of Massachusetts Medical School - Tuberculosis and T cell recognition	93.855		OSP2016182	(1,228)	-
University of Miami - Immune correlates of LTBI in HIV-exposed infants	93.855		OS00000564	51,719	-

Harvard University
Schedule of Expenditures of Federal Awards
Year Ended June 30, 2023

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
University of Pittsburgh - Development of a self-inactivating, highly effective TB vaccine	93.855		CNVA00062617 (132386-1)	187,695	-
University of Pittsburgh - Manipulation of innate immunity by Polyomavirus T antigens	93.855		AWD00002474 (134727-1)	90,354	-
University of Pittsburgh - Project 1: Synergies among Inhibitory Receptors in Tolerance Cancer and Antiviral Immunity	93.855		AWD00002849 (135387-2)	366,455	-
University of Pittsburgh Medical Center - Understanding use of direct to consumer telemedicine for pediatric acute respiratory infections	93.855		AWD00002531 (134810-1)	24,622	-
University of Washington - Malaria Evolution in South Asia	93.855		UWSC9952	138,385	-
Weill Medical College of Cornell University - Conditionally replicating Mycobacterium tuberculosis vaccines	93.855		226037	366,542	-
Weill Medical College of Cornell University - Pathway Analysis in Tuberculosis (Project 3)	93.855		230141-3	395,563	-
Weill Medical College of Cornell University - Pathway Analysis in Tuberculosis (Project 4)	93.855		230141-5	570,624	-
Yale University - Costimulatory Mechanisms of Autoimmunity (Composite)	93.855		GR100959 (CON-80001032)	83,643	-
Yale University - Enhancing surveillance systems to slow the spread of antimicrobial-resistant gonorrhea in the United States	93.855		GR109897(CON-80002440)	57,881	-
Yale University - Integrating genomic and spatial approaches for targeted control of HIV-associated tuberculosis epidemics	93.855		CON-80002721(GR110925)	22,885	-
Yale University - Structural analysis of inner membrane platform in the type 2 secretion system	93.855		GR111608 (CON-80002811)	10,601	-
Total for Assistance Listing Number 93.855				**12,206,677**	**913,218**
Brandeis University - Molecular and cellular determinants of Drosophila larva thermotaxis	93.859		403758	207,375	-
Brigham and Women's Hospital, Inc - Bayesian multivariate 3D spatial modeling for microbiome image analysis	93.859		125494	228,939	-
Brigham and Women's Hospital, Inc - Structural and Functional Analysis of Proteasome Core Particle Biogenesis	93.859		127129	20,695	-
Icahn School of Medicine at Mount Sinai - Towards an integrated map of causal connections for common, complex diseases	93.859		0255-4051-4609	8,785	-
Northwestern University - Regulation and Function of Intermediate Filaments in Cell Mechanics	93.859		60051124 HU	(1,865)	-
Northwestern University - SCISIPBIO: Understanding and Assembling Dream Teams to Conduct Clinical and Translational Science.	93.859		60055246 HU	43,020	-
Regents of the University of California - San Diego - National Resource for Network Biology (NRNB)	93.859		KR 705589	126,416	-
Regents of the University of Michigan - Accounting for Hidden Bias in Vaccine Studies: A Negative Control Framework	93.859		SUBK00012743	12,666	-
Regents of the University of Michigan - The Center for HIV RNA Studies (CRNA)	93.859		3004633964	8,126	-
The Jackson Laboratory - Teaching the Genome Generation: Cultivating High School Genomics through Pre-service Teacher Education	93.859		5R01HL153261-04	4,898	-
Trustees of Boston University - Integrative Approaches for Probing Cell Mechanotransduction in Health and Disease	93.859		4500003926	15,247	-
Wellesley College - Optical Tools to Study Purinergic Signaling	93.859		SA26581	13,384	-
Total for Assistance Listing Number 93.859				**687,686**	**-**
Arizona State University - Innovative Family Prevention with Latino Siblings in Disadvantaged Settings	93.865		ASUB00000124	118,286	-
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	3,781	-
Boston College - Paternal influence on children's weight outcomes	93.865		5108651-4	29,464	-
Brigham and Women's Hospital, Inc - Active Surveillance of the Safety of Antipsychotic Medications in Pregnancy	93.865		125323	32,929	-
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 Development.	93.865		125594	31,494	-
Brigham and Women's Hospital, Inc - Birth Control to Improve Birth Spacing (BIBS)	93.865		125698	1,515	-
Brigham and Women's Hospital, Inc - Causes and consequences of mitochondrial dysfunction in oocytes and cumulus cells	93.865		117986	(10,218)	-
Brigham and Women's Hospital, Inc - Comparative Safety of Antibiotics for Common Bacterial Infections During Pregnancy	93.865		127850	8,884	-
Brigham and Women's Hospital, Inc - Hormones and Genes in Women's Health: From Bench to Bedside	93.865		123664	43,150	-
Brigham and Women's Hospital, Inc - Mechanics of Vertebrate Embryo Elongation	93.865		119812	62,742	-
Brigham and Women's Hospital, Inc - Mechanistic pathways of the effects of human-animal interaction on depression and psychosocial stress	93.865		123005	117,126	-
Brigham and Women's Hospital, Inc - MicroRNA Predictors of HIV Risk in Reproductive Age Women	93.865		121236	61,736	-
Brigham and Women's Hospital, Inc - Safety of Benzodiazepines and Non-Benzodiazepine Sedative Hypnotics in Pregnancy	93.865		127603	17,769	-
Children's Hospital Boston - Examining neural mechanisms of developmental dyslexia from infancy to school-age	93.865		GENFD0001970225	(22,017)	-
Children's Hospital Boston - Examining neural mechanisms of developmental dyslexia from infancy to school-age	93.865		GENFD0002064075	151,145	-
Children's Hospital Boston - Healthcare Transitions and the Health of Adolescents and Young Adults with Intellectual or Developmental Disabilities	93.865		GENFD0002228211	53,076	-
Children's Hospital Boston - Healthcare Transitions and the Health of Adolescents and Young Adults with Intellectual or Developmental Disabilities	93.865		GENFD0002228212	56,120	-
Children's Hospital Corporation - The Hippocampus and Brainstem in the Sudden Infant Death Syndrome	93.865		GENFD0002012950	15,994	-
Emory University - AI DRIVEN LOW COST ULTRASOUND TOOL FOR AUTOMATED IDENTIFICATION OF PLACENTAL INSUFFICIENCY, PRE-ECLAMPSIA AND IUGR	93.865		A741279	17,570	-
Emory University - Spatial Uncertainty in Small Area Population Inference from Survey and Administrative Data	93.865		A782653	97,816	-
Harvard Pilgrim Health Care - A lifecourse approach to women's cardiometabolic and bone health: from fertility to perimenopause.	93.865		AH000730	108,735	-
Harvard Pilgrim Health Care - Pre- and Peri- Natal Predictors of Childhood Health and Obesity	93.865		AH000630	4,414	-
Harvard Pilgrim Health Care - Prenatal environmental determinants of health in young adulthood: a lifecourse approach	93.865		PH000871A	17,004	-
Johns Hopkins School of Public Health - Evaluating a Healthy Default Kids' Beverage Ordinance	93.865		2004546640	138,340	-
Johns Hopkins University - ''Determining Bone Loss and Bone Mineral Density Recovery following Repeat Pregnancy/Lactation among HIV Infected women on ART.''	93.865		2004010614	10,073	-
Johns Hopkins University - Inter-generational Link of Cardio-Metabolic Risk: Integrate Multi-OMICs with Birth Cohort	93.865		2004406421	129,919	-

The accompanying notes are an integral part of this schedule.

Harvard University
Schedule of Expenditures of Federal Awards
Year Ended June 30, 2023

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
Johns Hopkins University - Preterm Birth and Child Long-term Cardiometabolic Risk: Integrate Proteomics with Birth Cohort	93.865		2005479742	121,005	-
Johns Hopkins University - Preterm Birth, Maternal and Cord Blood Metabolome, and Child Metabolic Risk	93.865		2003250340	(1,289)	-
Massachusetts General Hospital - Adolescent Medicine Trials Network for HIV/AIDS Intervention (ATN) Coordinating Center	93.865		240255	(4,951)	-
Massachusetts General Hospital - FLOURISH – Following Longitudinal Outcomes to Understand, Report, Intervene and Sustain Health of Infants, Children and Adolescents who are HIV Exposed Uninfected	93.865		241521	4,115	-
Massachusetts General Hospital - Innovation across the spectrum of pediatric HIV care	93.865		235202	45,083	-
Massachusetts General Hospital - Long-term Impact of Fertility Treatments (LIFT) Study	93.865		231263	64,706	-
Michigan State University - Infertility history and chronic disease profile	93.865		RC110679Harvard	53,154	-
New York University - Play and Learning Across a Year (PLAY)	93.865		F0998-35	548	-
Regents of the University of Michigan - FAMILY WELL-BEING RESEARCH NETWORK (“FAM-NET”): Measuring Family Well-Being across the Lifespan	93.865		SUBK00013014	271,445	-
Stellenbosch University, Faculty of Medicine and Health Sciences - Children HIV Exposed Uninfected Research to Inform Survival and Health	93.865		S006905-01	9,087	-
The Broad Institute - Dissecting the role of FMRP in RNA processing using hPSC models	93.865		5000765-5500001555	289,293	-
Trustees of Boston University - HPV vaccination efficacy for cervical cancer prevention in young women with perinatal HIV infection	93.865		4500003130	(1,335)	-
University of Illinois at Urbana-Champaign - RNA Pol II pausing is critical for spermatogenesis and fertility	93.865		092758-17182	67,490	-
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	12,533	-
University of Massachusetts - Financial Support to Low-income Families of Preterm Infants	93.865		SUB00000240	21,552	-
Total for Assistance Listing Number 93.865				**2,249,283**	**-**
Beth Israel Deaconess Medical Center - A National Analysis of Observation Care Among Medicare Beneficiaries with Alzheimer's Disease and Related Dementias	93.866		GRT65005	179,969	-
Brigham and Women's Hospital, Inc - Boston OAIC: A Translational Approach to Function Promoting Anabolic Therapies	93.866		126169	30,731	-
Brigham and Women's Hospital, Inc - Center for Stress and Neural Regulation of Reproductive Aging Health Outcomes	93.866		123406	41,096	-
Brigham and Women's Hospital, Inc - Multicomponent Therapy for Age-related Skin Stem Cell Deficiency	93.866		128380	91,565	-
Brigham and Women's Hospital, Inc - Multicomponent Therapy for Age-related Skin Stem Cell Deficiency -Project 2	93.866		128377	71,604	-
Brigham and Women's Hospital, Inc - Multicomponent Therapy for Age-related Skin Stem Cell Deficiency- Project 3	93.866		128378	11,545	-
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 Epidermis	93.866		128376	68,789	-
Brown University - Delirium, Dementia and the Vulnerable Brain: An integrated Approach (Project 4: Defining Phenotype of Complicated Delirium)	93.866		1317	3,056	-
Brown University - Parent-child separation and cardiometabolic risk factors and outcomes in adulthood: A systematic review of main effects, potential mediators, and modifiers in human studies	93.866		1779	(2,833)	-
Brown University - Which Post Acute Care Setting is best for Patients' Outcomes	93.866		1165	(4,267)	-
Columbia University - Short and long-term consequences of wildfires for Alzheimer’s disease and related dementias	93.866		1(GG017519-02)	77,087	-
Columbia University - The Effect of De-Prescribing Antipsychotics on Clinical Quality for People with Alzheimer's Disease and Dementia	93.866		1(GG013824-01)	16,615	-
Dana-Farber Cancer Institute - Defining the landscape and mechanisms of protein redox regulation during aging	93.866		1400001	127,872	-
Dana-Farber Cancer Institute - Defining the Landscape and Mechanisms of Protein Redox Regulation during Aging	93.866		1318301	(1,478)	-
Emory University - Air Pollution and Alzheimer’s Disease and Related Dementias: A National Study	93.866		A570268	99,399	-
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	89,202	-
Massachusetts General Hospital - Alzheimer’s Disease and Related Dementia Care within the Medicare Program	93.866		233402	105,736	-
Massachusetts General Hospital - Characteristics and impact of chronic pain and pain management in older adults	93.866		239631	22,667	-
Massachusetts General Hospital - Comparative Safety of Seizure Prophylaxis within the Medicare Program	93.866		239682	71,647	-
Massachusetts General Hospital - Harnessing Diverse BioInformatic Approaches to Repurpose Drugs for Alzheimer’s Disease	93.866		233405	211,882	-
Massachusetts General Hospital - Impact of the COVID-19 Pandemic on Patients with and Without Alzheimer's Disease Related Dementias	93.866		239802	158,749	-
Massachusetts General Hospital - Medications, the gut microbiota, and risk of microscopic colitis	93.866		237376	41,508	-
Massachusetts General Hospital - Prospective Study of the Gut Microbiome in Aging.	93.866		237523	873,590	-
Massachusetts General Hospital - The CHARMED model: a multimorbidity simulation model for people aging with HIV	93.866		238631	161,983	-
Massachusetts General Hospital - Vascular Pathology in Early and Asymptomatic Cerebral Amyloid Angiopathy	93.866		238954	39,874	-
Massachusetts Institute of Technology - Bridging the Gap to Primary Care: A Behavioral Science Informed Intervention to Improve Chronic Disease Management among Postpartum Women	93.866		S5842	46,144	-
Massachusetts Institute of Technology - MIT Roybal Center for Translational Research to Improve Healthcare for the Aging	93.866		S5140	8,242	-
National Bureau of Economic Research - Improving Health Outcomes for an Aging Population	93.866		4135G.30.12.HMS	131,997	-
National Bureau of Economic Research - Improving Health Outcomes for an Aging Population	93.866		4135G.30.16.HKS	121,535	-
National Bureau of Economic Research - Public Policy and the Future of the Long Term Care Workforce	93.866		41860.HMS	101,504	-
National Bureau of Economic Research - Socioeconomic Status, Mortality, and Morbidity in Older Americans	93.866		41810.Harvard	64,527	-
Northwestern University - Proteostasis in Aging and Neurodegenerative Disease (Core C)	93.866		60052292 HARVARD	112,420	-
Northwestern University - Proteostasis in Aging and Neurodegenerative Disease (Project 2)	93.866		60057525 HARV	420,709	-

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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
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	18,967	-
Regents of the University of California - San Francisco - Advancing Psychosocial and Biobehavioral Approaches to Improve Emotional Well-Being	93.866		12669sc	21,506	-
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	3,874	-
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	84,078	-
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	17,159	-
Regents of the University of Michigan - Racial / Ethnic Differences in Extended Family Social Support Exchanges During Late Adulthood	93.866		SUBK00018168	27,385	-
Rush University Medical Center - A Novel Epigenetic Clock for Brain Aging	93.866		20012006-Sub01	(938)	-
Rush University Medical Center - MIND Diet Intervention to Prevent Alzheimers Disease	93.866		15052004-Sub01	1,844	-
Rutgers, The State University of New Jersey - Disease Outcomes iN Older adults under extreme Heat, AiR pollution and Medication use (DO-NO-HARM)	93.866		1299	106,601	-
Stanford University - Link between epigenetic and fat metabolism	93.866		61396029-122992	393	-
Trustees of Dartmouth College - Causes and Consequences of Healthcare Efficiency	93.866		R1341	58,239	-
Trustees of Dartmouth College - Causes and Consequences of Healthcare Efficiency - Project 3	93.866		R1033	88,237	-
University of Colorado Denver - Pitavastatin to REduce Physical Function Impairment and FRailty in HIV (PREPARE)	93.866		FY17.830.002	69,930	-
University of Massachusetts - Amherst - Development and Application of a Metabolomic Profile of Chronic Distress to Diseases of Aging	93.866		18-010151 B05	(162)	-
University of Massachusetts - Amherst - Metabolomic profile of chronic distress in relation to diseases of aging across diverse populations	93.866		23-017425-A-00	44,558	-
University of Miami - Sleep in Neurocognitive Aging and Alzheimer's Research (SANAR)	93.866		OS00000739	148,640	-
University of Pennsylvania - Novel Designs and Methods to Remove Hidden Confounding Bias in Health Sciences	93.866		579679	50,067	-
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	15,735	-
University of Southern California - Harmonized Diagnostic Assessment of Dementia (DAD) for Longitudinal Aging Study of India (LASI)	93.866		137887989	92,115	-
University of Southern California - Harmonized Diagnostic Assessment of Dementia (DAD) for Longitudinal Aging Study of India (LASI)-Genomic study	93.866		135974887	77,053	-
University of Wisconsin - Integrative Pathways to Health and Illness Project 1 - Psychosocial Contributors	93.866		782	4,088	-
University of Wisconsin - Integrative Pathways to Health and Illness Project 1 - Psychosocial Contributors	93.866		2490	23,739	-
Washington University - Vulnerability and Resiliency in the Aging Adult Brain Connectome (AABC)	93.866		WU-23-0245	38,551	-
Wits Health Consortium Ltd - The complexity of informal caregiving for Alzheimer's disease and related dementias in rural South Africa	93.866		D1910120-01	4,439	-
Yale University - Susceptibility and adverse health outcomes related to climate-sensitive events among older Medicare beneficiaries with Alzheimer and Dementia	93.866		CON-80004242 (GR119539)	68,635	-
Total for Assistance Listing Number 93.866				**4,659,399**	**-**
Children's Hospital Boston - Immune-Vascular Crosstalk in Retinopathy	93.867		GENFD0002187150	23,294	-
Children's Hospital Corporation - CRISPR screening for novel regulators of retinal ganglion cell survival and axon regeneration	93.867		GENFD0002202703	80,479	-
Massachusetts Eye and Ear Infirmary - Metabolomics a novel tool for investigating the pathogenesis of Age-related Macular Degeneration	93.867		530812	43,480	-
Massachusetts General Hospital - Lithium Niobate on Insolator (LNOI) Photonic Circuit Lasers for High-Speed, Widefield OCT	93.867		237203	29,602	-
Oregon Health and Science University - Aggregation of Deamidated Crystallins as a Major Cause of Cataracts	93.867		1019270 HARVARD	20,749	-
University of Rochester - Neural mechanisms of optic flow processing for visually-guided control of steering	93.867		SUB00000421 / UR FAO GR532817	28,488	-
Total for Assistance Listing Number 93.867				**226,092**	**-**
Children's Hospital Boston - International Bioethics Research Traiing (IBRTI - Central Asia Network)	93.989		GENFD0002300735	9,767	-
University of California, San Diego - 2/2 GeoHealth Hub for Climate Change and Health in the Middle East and North Africa-U.S.	93.989		KR705414	21,856	-
Total for Assistance Listing Number 93.989				**31,623**	**-**
Abt Associates, Inc. - Evaluation of the Oncology Care Model	93.RD		46244	502,267	-
AIDS Prevention Initiative in Nigeria, Ltd/Gte. - Strengthening Systems to Improve HIV Service Delivery and Other Public Health Interventions	93.RD		GH21-2147	77,308	-
COVID-19: Children's Hospital Boston - Adjuvant Discovery Program (DHHS Federal Contract Subcontract)	93.RD		GENFD0002172273	29,539	-
Harvard Pilgrim Health Care - Improving Public Health Responses to Emerging Health Threats: Accelerating Mathematical Modeling Development	93.RD		200-2016-91779/75D30121F0003	1,832,563	184,415
Howard University - AIM-AHEAD Coordinating Center: AIM-AHEAD Coordinating Center: ML, AI, Data Science, Teaching, Education, and Research (MASTER) Consortium on Health Disparities Training Core	93.RD		GRT000194 -10008194	35,767	-
International Consulting Associates - FDA Medical Data Enterprise – Development AI Tool	93.RD		ICA-SK-21-200-HA001	294,937	-
Rand Corporation - Implementation of the Medicare PDP and MA Plan Disenrollment Reasons Survey	93.RD		SCON-00000519	87,835	-
Stanford University - Molecular mechanism of mitochondrial ion transport	93.RD		62411169-165937	1	-

The accompanying notes are an integral part of this schedule.

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Westat Corporation - NICHD International and Domestic Pediatric and Maternal HIV and Other High Priority Infectious Diseases Data Coordinating Center	93.RD		6579-S42	(21)	-
Westat Corporation - Powerful and resource-efficient multi-trait analysis for large-scale multi-ethnic whole-genome sequencing studies	93.RD		GS00F009DA	21,291	-
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	64,908	-
Total for Assistance Listing Number 93.RD				**2,946,395**	**184,415**
Total for DHHS Subaward Received Research and Development Cluster				**71,034,357**	**2,372,402**
Environmental Protection Agency					
Health Effects Institute - Assessing Adverse Health Effects of Long-Term Exposure to Low Levels of Ambient Air Pollution	66.511		4953-RFA14-3/16-4-4	**(1,715)**	-
University of Florida - Robust statistical approaches to understanding the causal effect of air pollution mixtures	66.511		SUB00003342	**29,054**	-
Total for Assistance Listing Number 66.511				**27,339**	**-**
Yale University - Australian Wildfires and Perinatal Health Risks	66.RD		CON 80004095 (GR118875)	88,666	-
Total for Assistance Listing Number 66.RD				**88,666**	**-**
Total for EPA Subaward Received Research and Development Cluster				**116,005**	**-**
Library of Congress					
Waynesburg University - Teaching with Primary Sources and Humanistic Stories across Media	42.010		No Award Number	10,241	-
Total for Assistance Listing Number 42.010				**10,241**	**-**
Total for Library of Congress Subaward Received Research and Development Cluster				**10,241**	**-**
Millennium Challenge Corporation					
Massachusetts Institute of Technology - The J-PAL and EPoD Employment Lab	85.RD		S5123	352,604	50,002
Total for Assistance Listing Number 85.RD				**352,604**	**50,002**
Total for Millennium Challenge Corporation Subaward Received Research and Development Cluster				**352,604**	**50,002**
NASA					
Board of Trustees of the University of Illinois - The Reading Time Machine: Transforming Astrophysical Literature into Actionable Data	43.001		103937-18452	32,716	-
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	42,093	-
Georgetown University - Agnostic Biosignatures for Extant Life	43.001		AWD7773186-GR205803	174,170	-
Jet Propulsion Laboratory - Earth Information System (EIS)	43.001		1686322	22,334	-
Regents of the University of California - Santa Cruz - Moderately volatile elements as a probe of planetary accretion	43.001		A21-0492-S001	29,365	-
Smithsonian Astrophysical Observatory - Participation in Advancing Miniature Lightweight X-ray Optics for Solar System Exploration	43.001		SV1-11015	53,209	-
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	60,276	-
University Corporation for Atmospheric Research - The Solar Imaging Metasurface Polarimeter	43.001		SUBAWD002891	309,199	-
University of Washington - The Virtual Planetary Laboratory: Advancing the Search for Life Beyond the Solar System	43.001		UWSC10439	29,263	-
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 Earth Science	43.001		WU-20-334-MOD-6	95,127	-
Woods Hole Oceanographic Institution - Exploring Ocean Worlds: Ocean System Science to Support the Search for Life	43.001		A101470 / 23142700	148,922	-
Total for Assistance Listing Number 43.001				**996,674**	**-**
Purdue University - Resilient ExtraTerrestrial Habitats	43.012		12000295-027	530,871	-
University of Oregon - Quantum Communication Links using Coherent-Filter-Based Transmitter-Receiver Pairs	43.012		231180A	119,320	-
Total for Assistance Listing Number 43.012				**650,191**	**-**
Arizona Board of Regents, University of Arizona - JWST Near Infrared Camera (NIRCam)	43.RD		152977	175,528	-
Jet Propulsion Laboratory - STRATOS Mission Uncertainty Quantification and Requirements	43.RD		Subcontract No. 1684679	25,195	-
Smithsonian Astrophysical Observatory - Participation in Tropospheric Emissions: Monitoring of Pollution (TEMPO) Program	43.RD		SV 3 - 8 3 020	70,387	-
Southwest Research Institute - Juno Project	43.RD		699042X	382,783	-
Trustees of Boston University - Calibration and validation of XCO2 and SIF for urban targets	43.RD		4500003755	44,907	-
Total for Assistance Listing Number 43.RD				**698,800**	**-**
Total for NASA Subaward Received Research and Development Cluster				**2,345,665**	**-**
National Endowment for the Humanities					
Texas A and M University - Towards a People's History of Landscape Part 1: Black and Indigenous Histories of the Nation's Capital Summer Institute for College and University Teachers	45.163		M2201037	31,910	-
Total for Assistance Listing Number 45.163				**31,910**	**-**
iCivics, Inc. - Educating for American Democracy□	45.164		No Award Number	40,771	-
Total for Assistance Listing Number 45.164				**40,771**	**-**
Total for National Endowment for the Humanities Subaward Received Research and Development Cluster				**72,681**	**-**
National Science Foundation					
Arizona Board of Regents, University of Arizona - NSF Engineering Research Center for Quantum Networks (CQN)	47.041		606947	422,388	-
Florida State University - Understanding the interrelationships among floods, building characteristics, mold growth and occupants' asthma symptoms in submerged residential buildings in the aftermath of Hurricane Ida	47.041		R000002966	28,940	-

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Massachusetts Institute of Technology - EFRI C3 SoRo: Soft, Strong, and Safe Configurable Robots for Diverse Manipulation Tasks	47.041		S4649 - PO 217699	32,298	-
Purdue University - FMRG: Cyber Privacy-Preserving Tiny Machine Learning Edge Analytics to Enable AI-Commons for Secure Manufacturing	47.041		10001927-018	288,595	-
Trustees of Boston University - Nanosystems Engineering Research Center for Directed Multiscale Assembly of Cellular Metamaterials with Nanoscale Precision: CELL-MET	47.041		4500004142	67,360	-
Trustees of Boston University - Nanosystems Engineering Research Center for Directed Multiscale Assembly of Cellular Metamaterials with Nanoscale Precision: CELL-MET	47.041		4500004143	33,135	-
Trustees of Boston University - Nanosystems Engineering Research Center for Directed Multiscale Assembly of Cellular Metamaterials with Nanoscale Precision: CELL-MET	47.041		4500004562	142,694	-
Trustees of Boston University - Nanosystems Engineering Research Center for Directed Multiscale Assembly of Cellular Metamaterials with Nanoscale Precision: CELL-MET	47.041		4500004563	64,267	-
University of Illinois at Urbana-Champaign - EFRI C3 SoRo: An integrated approach towards the computational design, fabrication and understanding of bio-hybrid soft architectures capable of adaptive behavior	47.041		093088-17158	(6,202)	-
University of Rhode Island - NCS-FO: SOUND: Understanding the Functional Neural Dynamics Underpinning Auditory Processing Dysfunctions through a Multiscale Recording-Stimulation Framework	47.041		0008544/11122020	6,193	-
University of Washington - AI Institute in Dynamic Systems	47.041		UWSC13223	285,900	-
Total for Assistance Listing Number 47.041				**1,365,568**	**-**
Clemson University - EAGER-QAC-QSA: Quantum Algorithms for Correlated Electron-Phonon System	47.049		2222-206-2014111	25,093	-
Massachusetts Institute of Technology - AI Institute: The Center for Artificial Intelligence and Fundamental Interactions	47.049		S5206, PO 560825	640,520	-
Massachusetts Institute of Technology - Characterizing and Utilizing 2D van der Wals Materials with Superconducting Qubits	47.049		S4874 - PO 382989	160,192	-
Massachusetts Institute of Technology - NSF PFC Center for Ultracold Atoms Renewal	47.049		S4528 - PO 128237	731,075	-
National Radio Astronomy Observatory - NRAO Student Observing Support for Charles Law	47.049		SOSPA9-003	19,520	-
Navajo Technical University - PREM VENTURES	47.049		NTU-42770-21	92,030	-
Navajo Technical University - VENTURES - Vision for Excellence at Navajo Technical University in Research and Education in STEM	47.049		42766-00-1174	38,900	-
Purdue University - RAISE-TAQS: Multifunctional Hybrid Quantum Systems for Spin-Based Quantum Control and Metrology	47.049		10001431-011	(20,029)	-
Regents of the University of California - Berkeley - Does Nature Evoke the Optimum A Bioinspired Hierarchical Manufacturing Process	47.049		10795	28,010	-
Stanford University - MSIP: Innovation to Achieve the Full Science Reach of the BICEP Array Stage 3 CMB Polarization Experiment	47.049		61941274-134448	(47,445)	-
University of Chicago - ACME III: Advanced Cold Molecule Electron Electric Dipole Moment Search	47.049		AWD102289 (SUB00000526)	546,607	-
University of Chicago - QLCI-CI NSF Quantum Leap Challenge Institute for Quantum Sensing in Biophysics and Bioenginering	47.049		AWD102417 (SUB00000579)	105,608	-
University of Colorado at Boulder - QLCI-CI: NSF Quantum Leap Challenge Institute for Enhanced Sensing and Distribution Using Correlated Quantum States	47.049		1559522	585,001	-
University of North Texas - Using uncertainty quantification and validated computational models to analyze pumping performance of valveless, tubular hearts	47.049		GF30141-1	38,928	-
University of Notre Dame - QuIC - TAQS: Deterministically Placed Nuclear Spin Quantum Memories for Entanglement Distribution	47.049		204276HU	(2,049)	-
University of Oregon - QuIC-TAQS: Implementation of a Neutral-Atom- Photonic-Cluster State	47.049		2014Y0A	166,060	-
Cornell University - HDR Institute: The Quantum Institute for Data and Emergence at Atomic Scales (Qu-IDEAS)	47.049		138361-21048	6,479	-
Total for Assistance Listing Number 47.049				**3,114,500**	**-**
California Institute of Technology - MRI: Development of a 150 GHz Receiver for the BICEP Array CMB Polarimeter	47.050		S386502	14,382	-
Georgia Institute of Technology/Georgia Tech Research Corporation - Collaborative Research: ICECAP (Ice Age Chemistry and Proxies) Phase 4: Investigating aerosol transport, forcing, and climate feedbacks during the Common and last glacial eras	47.050		AWD-002731-G1	26,343	-
Southern California Earthquake Center - SCEC5 NSF Research Collaboration at Harvard University	47.050		118062181	15,000	-
University of Georgia - DISES: Co-produced modeling of socio-environmental dynamics of financialized forestlands and alternative future sce	47.050		SUB00002958	7,867	-
Total for Assistance Listing Number 47.050				**63,592**	**-**
Boston University School of Public Health - SCH: INT: Distributed Analytics for Enhancing Fertility in Families	47.070		4500003418	16,091	-
Children's Hospital Boston - PILOT: Predictive Intelligence for Limiting Outbreak Threats	47.070		GENFD0002242257	81,177	-
Colorado School of Mines - HDR Institute: Center for Data-Driven Dynamical Design	47.070		402052-5802	285,593	-
Columbia University - BD Hubs: NORTHEAST: The Northeast Big Data Innovation Hub	47.070		25(GG014586-02)	17,873	-
Computing Research Association - Computing Innovation Fellows 2020 Project	47.070		CIF2020-HU-37	21,144	-
Computing Research Association - Computing Innovation Fellows 2020 Project	47.070		CIF2020Year3-HU	105,722	-
Computing Research Association - Computing Innovation Fellows 2021 Project	47.070		2021CIF-Harvard-06	105,722	-
Internet2 - CI CoE: Demo Pilot: Advancing Research Computing and Data: Strategic Tools, Practices, and Professional Development	47.070		1048-A	34,176	-
Johns Hopkins University - Collaborative Research: CNS Core: Medium: Cross-Layer Design of Video Analytics for the Internet of Things	47.070		2005122791	138,965	-
Massachusetts Institute of Technology - A Center for Brains, Minds, and Machines: The Science and the Technology of Intelligence	47.070		S3409	544,268	176,628
Trustees of Boston University - CIF21 DIBBs: EI: North East Storage Exchange,	47.070		4500002550	18,812	-
University of Delaware - NRI: INT: COLLAB: Anthropomorphic Robotic Ankle Prosthesis with Programmable Materials	47.070		57023	93,624	-
Cornell University - HDR Institute: The Quantum Institute for Data and Emergence at Atomic Scales (Qu-IDEAS)	47.070		138361-21048	2,659	-
Total for Assistance Listing Number 47.070				**1,465,826**	**176,628**
Arizona State University - Mid-scale RI-2 Consortium: Compact X-ray Free-Electron Laser Project (CXFEL)	47.074		ASUB00001323	9,828	-
Cary Institute of Ecosystem Studies - LTER: Long-Term Ecological Research at the Hubbard Brook Experimental Forest	47.074		3340/200202101	10,931	-

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Cornell University - MCA: Effects of unsteady wind and surface morphology on plant transpiration	47.074		138711-21065	16,198	-
Field Museum of Natural History - Collaborative Research: Evolving the mammalian forelimb: modeling musculoskeletal transformation in the forerunners of mammals	47.074		50133-1-FDP	59,076	-
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	25,020	-
Simmons University - Unraveling the developmental genetics that underlie anuran limb initiation	47.074		S400036HMS	63,829	-
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	82,207	-
Yale University - NEURONEX: The fabric of the primate neocortex and the origin of mental representations. From transcriptomics to single neurons and neuronal networks.	47.074		GR110627 (CON-80002601)	200,312	-
University of Georgia - DISES: Co-produced modeling of socio-environmental dynamics of financialized forestlands and alternative future scenarios	47.074		SUB00002958	805	-
Total for Assistance Listing Number 47.074				**468,206**	**-**
New Jersey Institute of Technology - New Jersey Institute of Technology Campus Alignment Review of Ethics	47.075		997623-2021-22	4,982	-
University of Texas - Dallas - Innovating Developmental Science with an Online, Scalable Meta-Science Platform for Investigating Cognitive Development During Early Childhood	47.075		2008652	14,091	-
University of Georgia - DISES: Co-produced modeling of socio-environmental dynamics of financialized forestlands and alternative future scenarios	47.075		SUB00002958	9,624	-
Total for Assistance Listing Number 47.075				**28,697**	**-**
American Educational Research Association - The impacts of high school industry certifications: Regression discontinuity evidence	47.076		No Award Number	17,500	-
Georgia Institute of Technology/Georgia Tech Research Corporation - AI Institute: AI-Augmented Learning: AI-ALOE: NATIONAL AI RESEARCH INSTITUTE FOR ADULT LEARNING AND ONLINE EDUCATION	47.076		AWD-004128-G6	26,967	-
Georgia Research Alliance - AI Institute for Adult Learning and Online Education (ALOE)	47.076		2112532-Harvard University	91,711	-
Lawrence Hall of Science - Urban Youth Participation in Community and Citizen Science	47.076		10814	20,369	-
North Carolina State University - Using Animated Contrasting Cases to Improve Procedural and Conceptual Knowledge in Geometry	47.076		2019-1219-01	30,575	-
Smithsonian Astrophysical Observatory - Participation in YouthAstroNet: Research on the scale-up of innovative technology experiences in astronomy and science imaging – Scaling, Expanding, and Iterating Innovations (SEI)	47.076		SV1-11010	113,074	-
Total for Assistance Listing Number 47.076				**300,196**	**-**
University of Washington - NSFGEO-NERC: Collaborative Research: A new mechanistic framework for modeling rift processes in Antarctic ice shelves validated through improved strain-rate and seismic observations	47.078		UWSC13050	12,906	-
Total for Assistance Listing Number 47.078				**12,906**	**-**
Arizona Board of Regents, University of Arizona - PIRE: Black-Hole Astrophysics in the Era of Distributed Resources and Expertise	47.079		438295	258,455	-
Columbia University - Columbia University MRSEC on Precision-Assembled Quantum Materials	47.079		2(GG015783-06)	70,368	-
CRDF Global - Are TB neighborhoods a high risk population for active intervention	47.079		OISE-9531011	37,642	-
University of Chicago - PIRE: International Partnership for Cirrus Studies	47.079		FP065300-A	222,634	-
Total for Assistance Listing Number 47.079				**589,099**	**-**
American Political Science Association - Ethnic networks, merit, and the demand for redistribution	47.RD		No Award Number	1,343	-
Columbia University - Towards Life with a Reduced Protein Alphabet	47.RD		1(GG016822-01)	254,118	-
Smithsonian Astrophysical Observatory - The Spectrum Laboratory: Toward Authentic Inquiry for All	47.RD		SV8-88015	6,060	-
University of Utah - Functional analyses of the vocal central pattern generators of African clawed frogs	47.RD		10053591	60,725	-
Total for Assistance Listing Number 47.RD				**322,246**	**-**
Total for National Science Foundation Subaward Received Research and Development Cluster				**7,730,836**	**176,628**
Office of the Director of National Intelligence					
Lightmatter Inc. - Electro-Photonic Computing (EPiC) for On-Premise Applications	12.RD		No Award Number	20,862	-
Oak Ridge Institute For Science And Education - On-Chip Optical Downconversion for Quantum Radar	12.RD		SAWD-WD-00851	(6,470)	-
The Broad Institute - Molecular Encoding Technologies for Archiving	12.RD		5012031-5500001336	29,010	-
Total for Assistance Listing Number 12.RD				**43,402**	**-**
Total for Office of the Director of National Intelligence Subaward Received Research and Development Cluster				**43,402**	**-**
Social Security Administration					
Board of Regents of the University of Wisconsin System - An Exploratory Study of Community-Based Aging: Resources and Resilience of Older Adults During Covid-19	96.007		1946	11,431	-
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 and Older Living in the Boston Area	96.007		2578	75,755	-
National Bureau of Economic Research - Exploration of an Alternative Disclosure Approach for SSA Statistics	96.007		51460.02:R-DRC20-12	9,579	-
National Bureau of Economic Research - Reform of the Appellate Disability Determination Process and Employment After Application	96.007		51460.05.01-NB23-13-HMS	29,569	-
National Bureau of Economic Research - The Effect of Health Insurance Affordability on the Employment of People with Disabilities	96.007		51460.03:R-DRCNB21-13-HMS	16,617	-
Total for Assistance Listing Number 96.007				**142,951**	**-**
Total for Social Security Administration Subaward Received Research and Development Cluster				**142,951**	**-**
Total for Reseach and Development Cluster Subaward Received				**103,565,065**	**3,452,070**

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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
Total for Reseach and Development Cluster				**647,621,731**	**130,314,687**
Student Financial Assistance Cluster					
Direct Award					
Department of Education					
Federal SEOG Grant 2022-2023	84.007	P007A221874		2,915,214	-
Total for Assistance Listing Number 84.007				**2,915,214**	**-**
Federal Work-Study Program (On Campus)	84.033	P033A221874		762,450	
Federal Work-Study Program (Off Campus)	84.033	P033A221874		1,077,386	
Total for Assistance Listing Number 84.033				**1,839,836**	
Federal Perkins Loans Outstanding Loans as of July 1, 2022	84.038			14,020,129	
Federal Perkins Loans New Loans Issued During 2022-2023	84.038			-	
Federal Perkins Loans Administrative Cost Allowance	84.038			-	
Total for Assistance Listing Number 84.038				**14,020,129**	
Federal Pell Grant 2022-2023	84.063	P063P220187		8,249,731	-
Total for Assistance Listing Number 84.063				**8,249,731**	**-**
Federal Direct Student Loans 2021-2022	84.268			123,199	
Federal Direct Student Loans 2022-2023	84.268			102,730,109	
Total for Assistance Listing Number 84.268				**102,853,308**	**-**
Total for Department of Education Direct Award Student Financial Assistance Cluster				**129,878,218**	**-**
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, 2022	93.342			12,669,675	
New Loans Issued During 2022-2023 - HPSL	93.342	4 E11HP27293 02 00		126,000	
New Loans Issued During 2022-2023 - LDS	93.342	4 E11HP27293 02 00		1,033,096	
HPSL/PCL/LDS Administrative Cost Allowance	93.342			-	
Total for Assistance Listing Number 93.342				**13,828,771**	
Total for DHHS Direct Award Student Financial Assistance Cluster				**13,828,771**	
Total for Student Financial Assistance Cluster Direct Awards				**143,706,989**	**-**
Total for Student Financial Assistance Cluster				**143,706,989**	**-**
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		459,471	-
Total for Assistance Listing Number 15.130				**459,471**	**-**
Total for 477 Cluster				**459,471**	
CCDF Cluster					
Subaward Received					
Department of Health and Human Services					
Saint Vincent College - National Center for Parent, Family, and Community Engagement (NCPFCE)	93.575		No Award Number	30,000	-
Total for Assistance Listing Number 93.575				**30,000**	**-**
Total for CCDF Cluster				**30,000**	**-**
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	468,419	-
Total for Assistance Listing Number 11.307				**468,419**	**-**
Total for Economic Development Cluster				**468,419**	**-**
Head Start Cluster					
Direct Award					
Department of Health and Human Services					
A Bioecological Approach to Understanding the Predictors and Consequences of Absenteeism in Head Start	93.600	90YR0126-02-01		11,470	-
Total for Assistance Listing Number 93.600				**11,470**	**-**
Total for Head Start Cluster				**11,470**	**-**
Other Programs					
Direct Award					
Department of Education					
Foreign Language and Area Studies: Davis Center for Russian and Eurasian Studies 2022-26	84.015	P015B220037		333,867	-
Foreign Languages and Area Studies - Center for African Studies	84.015	P015B220078		57,000	-

The accompanying notes are an integral part of this schedule.

Harvard University
Schedule of Expenditures of Federal Awards
Year Ended June 30, 2023

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
Foreign Languages and Area Studies (FLAS) - Center for African Studies	84.015	P015B180138-21		165,261	-
National Resource Centers: Center for African Studies	84.015	P015A180138		118,265	-
National Resource Centers: Davis Center for Russian and Eurasian Studies	84.015	P015A180078 - 21		112,496	-
National Resource Centers: Davis Center for Russian and Eurasian Studies 2022-26	84.015	P015A220033		209,632	-
Total for Assistance Listing Number 84.015				**996,521**	**-**
Total for Department of Education Direct Award Other Programs				**996,521**	**-**
Department of Homeland Security					
Blue Campaign Program Evaluation and Violence Prevention	97.108	21STFRG00012-01-02		449,247	-
Total for Assistance Listing Number 97.108				**449,247**	**-**
Total for Department of Homeland Security Direct Award Other Programs				**449,247**	**-**
Department of Housing & Urban Development					
Achieving Excellence in Community Development	14.U01	No Award Number		8,977	-
Total for Assistance Listing Number 14.U01				**8,977**	**-**
Achieving Excellence in Community Development	14.U02	No Award Number		248,349	-
Total for Assistance Listing Number 14.U02				**248,349**	**-**
THE EDWARD M. GRAMLICH FELLOWSHIP IN COMMUNITY AND ECONOMIC DEVELOPMENT SUMMER FELLOWSHIP PROGRAM - Summer 2022	14.U03	R-NONINT-2022-67163		27,000	-
Total for Assistance Listing Number 14.U03				**27,000**	**-**
THE EDWARD M. GRAMLICH FELLOWSHIP IN COMMUNITY AND ECONOMIC DEVELOPMENT SUMMER FELLOWSHIP PROGRAM - Summer 2023	14.U04	R-NONINT-2023-71254		10,000	-
Total for Assistance Listing Number 14.U04				**10,000**	**-**
Total for Department of Housing & Urban Development Direct Award Other Programs				**294,326**	**-**
Department of State					
Recollections of Service: An Oral History Project	19.040	SVM70020GR0039		(6,000)	-
Total for Assistance Listing Number 19.040				**(6,000)**	**-**
Total for Department of State Direct Award Other Programs				**(6,000)**	**-**
Department of the Treasury					
Low Income Taxpayers Clinic	21.008	22-LITC0551-01-02		143,956	-
Total for Assistance Listing Number 21.008				**143,956**	**-**
Total for Department of the Treasury Direct Award Other Programs				**143,956**	**-**
Department of Health and Human Services					
COVID-19: American Rescue Plan Act for National Training	93.129	4U3FCS41787 01 01		90,400	-
Equitable Care For Elders	93.129	6U30CS30788 06 01		560,289	-
Total for Assistance Listing Number 93.129				**650,689**	**-**
Total for DHHS Direct Award Other Programs				**650,689**	**-**
Institute of Museum and Library Services					
Hear Me Out: Expanding Hispanic engagement through collaboration	45.301	MA-245652-OMS-20		63,267	-
Marshall Family Archives Digitization Project	45.301	MA-245387-OMS-20		18,084	-
Opening Up Digital Collections: Learning Resources for Middle School	45.301	MA-10-18-0311-18		6,506	-
Total for Assistance Listing Number 45.301				**87,857**	**-**
Total for Institute of Museum and Library Services Direct Award Other Programs				**87,857**	**-**
National Endowment for the Humanities					
Imperiia: An Information Ecosystem for Russian History	45.169	HAA-266553-19		58,067	-
Mapping Color in History (MCH)	45.169	HAA-269007-20		5,141	-
NEH Digital Humanities Advancement Grant	45.169	HAA-287761-22		33,017	-
Turāth: Arabian Peninsula Digital Archive	45.169	HAA-287905-22		32,151	-
Total for Assistance Listing Number 45.169				**128,376**	**-**
Total for National Endowment for the Humanities Direct Award Other Programs				**128,376**	**-**
Total for Other Programs Direct Awards				**2,744,972**	**-**
Other Programs					
Subaward Received					
Department of Education					
Tennessee Department of Education - Setting Students Up for Success: Research, Evaluation, and Guidance on College Going Interventions	84.372		33145-02720	1,143	-
Total for Assistance Listing Number 84.372				**1,143**	**-**
Total for Department of Education Subaward Received Other Programs				**1,143**	**-**
Department of Homeland Security					
COVID-19: Massachusetts Emergency Management Agency (MEMA) - COVID Testing PAP 1	97.036		CTFEMA4496HARVC01268	1,838,299	-
COVID-19: Massachusetts Emergency Management Agency (MEMA) - COVID Testing PAP 2	97.036		CTFEMA4496HARVC01590	3,591,909	-

Harvard University
Schedule of Expenditures of Federal Awards
Year Ended June 30, 2023

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
COVID-19: Massachusetts Emergency Management Agency (MEMA) - COVID Testing PAP 3	97.036		CTFEMA4496HARVC01168	450,000	-
COVID-19: Massachusetts Emergency Management Agency (MEMA) - COVID Testing PAP 4	97.036		CTFEMA4496HARVC01166	7,353,600	-
COVID-19: Massachusetts Emergency Management Agency (MEMA) - COVID Testing PAP 5	97.036		CTFEMA4496HARVC01167	11,702,668	-
Total for Assistance Listing Number 97.036				**24,936,476**	**-**
Total for Department of Homeland Security Subaward Received Other Programs				**24,936,476**	**-**
Department of Justice					
Brockton Public Schools - SAVE (Solutions to Averting Violence in Education)	16.U01		BJA-2020-17313	83,488	-
Total for Assistance Listing Number 16.U01				**83,488**	**-**
Total for Department of Justice Subaward Received Other Programs				**83,488**	**-**
Department of Health and Human Services					
AIDS Prevention Initiative in Nigeria, Ltd/Gte. - Engaging Indigenous Organizations to Sustain and Enhance Comprehensive Clinical Services for the Prevention, Care and Treatment of HIV/AIDS in Nigeria under PEPFAR	93.067		GH17 1753	107,739	-
Total for Assistance Listing Number 93.067				**107,739**	**-**
Total for DHHS Subaward Received Other Programs				**107,739**	**-**
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	78,801	-
Total for Assistance Listing Number 45.169				**78,801**	**-**
Total for National Endowment for the Humanities Subaward Received Other Programs				**78,801**	**-**
Total for Other Programs Subawards Received				**25,207,647**	**-**
Total for Other Programs				**27,952,619**	**-**
Grand Total				**$ 820,250,699**	**$ 130,314,687**

The accompanying notes are an integral part of this schedule.

Harvard University
Notes to Schedule of Expenditures of Federal Awards
Year Ended June 30, 2023

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, 2023. 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, the Medical School (including the School of Dental Medicine), and the T.H. Chan School of Public Health 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, 2023 consist of:

	Assistance Listing #:		Amount
Perkins	84.038	$	9,420,024
HPSL/LDS/PCL	93.342		12,785,044
Total Federal Student Loans		**$**	**22,205,068**

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, 2023 are summarized as follows:

	Assistance Listing #:		Amount
Perkins	84.038	$	-
Net Direct Subsidized Stafford	84.268		1,297,545
Net Direct Unsubsidized Stafford	84.268		60,190,062
Net Direct PLUS	84.268		4,483,527
Net Direct Grad PLUS	84.268		36,882,174
HPSL/LDS/PCL	93.342		1,159,096
Total		**$**	**104,012,404**

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, 2023, and the related consolidated statements of changes in net assets with general operating account detail, 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 18, 2023.

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 18, 2023

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, 2023. 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, 2023.

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.

Other Matters

As indicated in Part I to the accompanying Schedule of Findings and Questioned Costs, we have audited the Student Financial Assistance cluster as a major program. Also, as indicated in the first paragraph of this report, we performed our audit of compliance using the compliance requirements contained in the OMB Compliance Supplement, including those contained in Part V 5.3, Compliance Requirement N, Special Tests and Provisions, Section 12 "Gramm-Leach-Bliley Act-Student Information Security." This section includes two suggested audit procedures with respect to verification that the institution (1) designated a Qualified Individual responsible for implementing and monitoring the institution's information security program, and (2) has a written information security program that addresses the remaining six required minimum elements that are detailed in the OMB Compliance Supplement, Part Five, Student Financial Assistance Cluster, Special Tests and Provisions, item 12, Gramm-Leach-Bliley Act – Student Information Security. Our procedures in relation to these two items were limited to inquiry of

and obtaining written representation from management and obtaining and reading management's documentation related to these two items. Our procedures did not include an analysis of the adequacy or completeness of the minimum required elements of the institution's information security program.

The results of our auditing procedures disclosed an instance of noncompliance, which is required to be reported in accordance with the Uniform Guidance and which is described in the accompanying schedule of findings and questioned costs as item 2023-001. Our opinion on each major federal program is not modified with respect to this matter.

Government Auditing Standards requires the auditor to perform limited procedures on the University's response to the noncompliance findings identified in our audit described in the accompanying schedule of findings and questioned costs and corrective action plan. The University's response was not subjected to the other auditing procedures applied in the audit of compliance and, accordingly, we express no opinion on the response.

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.

PricewaterhouseCoopers LLP

Boston, Massachusetts
January 11, 2024

Part III
Audit Findings and Questioned Costs

Harvard University
Schedule of Findings and Questioned Costs
Year Ended June 30, 2023

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)?	Yes

Identification of major programs

Assistance Listing Number	Name of Federal Program or Cluster
Various	Research and Development Cluster
Various	Student Financial Assistance Cluster
97.036	COVID-19: Massachusetts Emergency Management Agency (MEMA) - COVID testing 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.

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

Criteria
Institutions are required to report enrollment information under the Pell grant and the Direct loan programs via the NSLDS (OMB No. 1845-0035), (Pell, 34 CFR 690.83(b)(2); Direct Loan, 34 CFR 685.309). The administration of the Title IV programs depends heavily on the accuracy and timeliness of the enrollment information reported by institutions. Institutions must review, update, and verify student enrollment statuses, program information, and effective dates that appear on the Enrollment Reporting Roster file or on the Enrollment Maintenance page of the NSLDS Professional Access (NSLDSFAP) website. The data on the institution's Enrollment Reporting Roster, or Enrollment Maintenance page, is what NSLDS has as the most recently certified enrollment information. There are two categories of enrollment information, "Campus Level" and "Program Level," both of which need to be reported accurately and have separate record types.

Condition
Through our testing of 35 enrollment reporting selections across five schools, we noted the following at one school:

- For 4 out of 10 selections, we noted that the effective date of the change per the NSLDS at the program level did not agree to the effective date of the actual status change per the student file. In each of these instances the student status change was appropriately reported at the campus level.
- For 6 out of 10 selections, we noted graduate students were reported to NSLDS with a withdrawn status ('W') rather than a graduation status ('G').

Cause

- The cause of the finding in the first instance was incorrect reporting logic that was defaulting to the first day of the term for this field, rather than the actual date of a student's in-term time status change.

- The cause of the finding in the second instance was that while the school appropriately reported the initial separation event as 'W', the reporting logic failed to capture the degree-awarding or graduation 'G' event correctly for November and March graduates only.

Effect
The effective administration of Title IV loans could be impacted when changes in students' status are not reported accurately. The accuracy of enrollment information is important as the student's enrollment status determines eligibility for the in-school status, deferment, grace periods, and repayments as well as the Government's payment of interest subsidies. Due to the student loan forbearance provided by the COVID-19 Emergency Relief, none of the selected students were impacted by the first condition above. . In regard to the second instance, there was no impact on the student's loan repayment or eligibility as Harvard University appropriately reported the initial separation event.

Questioned Costs
None noted.

Recommendation
We recommend management implement controls to identify inconsistencies in enrollment reporting information and to ensure error reports are resolved timely.

Management's Views and Corrective Action Plan
Management's response is included in "Management's Views and Corrective Action Plan" included at the end of this report after the summary schedule of status of prior audit findings.

Harvard University
Summary of Status of Prior Audit Findings
Year Ended June 30, 2023

There are no findings from prior years that require an update in this report.

HARVARD
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Management's Views and Corrective Action Plan

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

The enrollment reporting exceptions identified by PwC were isolated to one Harvard school and did not impact the loan repayment status for any student. The exceptions were the result of system reporting and management has completed corrective actions.

Program level enrollment effective date was addressed by correcting the enrollment reporting logic within the Harvard school's reporting system, Ellucian Banner. This updated logic now provides accurate program status effective dates in the National Student Clearinghouse (NSC) reporting file. Harvard successfully transmitted its first file with the updated logic to NSC in November 2023. As program level enrollment data is not used to initiate loan repayment or other loan status changes; these students were not negatively impacted.

Withdrawn versus graduation status issue was isolated to off-cycle graduation events in November and March. Although the final status was reported as withdrawn instead of graduated for these selections, there was no impact on the student's loan repayment or eligibility as we appropriately reported the initial separation event. Harvard implemented a "Graduates Only" NSC reporting file to correctly transmit the graduation status for these off-cycle graduates which will ensure compliance going forward.

Sincerely,

Amanda McDonnell
University Controller
617-495-8032