MASSACHUSETTS INSTITUTE OF TECHNOLOGY

REPORT ON THE AUDIT OF FEDERAL FINANCIAL ASSISTANCE PROGRAMS IN ACCORDANCE WITH THE Uniform Guidance

FOR THE YEAR ENDED JUNE 30, 2023

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MASSACHUSETTS INSTITUTE OF TECHNOLOGY
Report on the Audit of Federal Financial Assistance Programs in Accordance with the Uniform Guidance For the Year Ended June 30, 2023

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SECTION I

FINANCIAL REPORTS

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Report of Independent Auditors

To the Members of the Corporation of the Massachusetts Institute of Technology

Report on the Audit of the Consolidated Financial Statements

Opinion

We have audited the accompanying consolidated financial statements of the Massachusetts Institute of Technology and its subsidiaries (the "Institute"), which comprise the consolidated statements of financial position as of June 30, 2023 and 2022, and the related consolidated statements of activities 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 Institute as of June 30, 2023 and 2022, 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 Institute 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 statement of financial position as of June 30, 2022, and the related consolidated statements of activities and of cash flows for the year then ended (the statement of activities is not presented herein), and in our report dated October 7, 2022, we expressed an unmodified opinion on those consolidated financial statements. In our opinion, the information set forth in the accompanying summarized financial information for the year ended June 30, 2022 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 Institute'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 consolidated financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditors' report that includes our opinion. Reasonable assurance is a high level of assurance but is not absolute assurance and therefore is not a guarantee that an audit conducted in accordance with 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 Institute'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 Institute'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 and the financial responsibility supplemental schedule as of and for the year ended June 30, 2023

are 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 the Department of Education, respectively, and are 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 and the financial responsibility supplemental schedule are fairly stated, in all material respects, in relation to the consolidated financial statements taken as a whole.

Other Information

Management is responsible for the other information included in the annual report. The other information comprises the contents of the Report of the Treasurer (not presented herein), but does not include the consolidated financial statements and our auditors' report thereon. Our opinion on the consolidated financial statements does not cover the other information, and we do not express an opinion or any form of assurance thereon.

In connection with our audit of the consolidated financial statements, our responsibility is to read the other information and consider whether a material inconsistency exists between the other information and the consolidated financial statements or the other information otherwise appears to be materially misstated. If, based on the work performed, we conclude that an uncorrected material misstatement of the other information exists, we are required to describe it in our report.

Other Reporting Required by *Government Auditing Standards*

In accordance with *Government Auditing Standards*, we have also issued our report dated October 6, 2023, except with respect to Note K to the consolidated financial statements and the opinion on the financial responsibility supplemental schedule, as to which the date is March 28, 2024, on our consideration of the Institute'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 Institute's internal control over financial reporting and compliance.

PricewaterhouseCoopers LLP

Boston, Massachusetts
October 6, 2023, except with respect to Note K to the consolidated financial statements and the opinion on the financial responsibility supplemental schedule, as to which the date is March 28, 2024.

MASSACHUSETTS INSTITUTE OF TECHNOLOGY
CONSOLIDATED STATEMENTS OF FINANCIAL POSITION
as of June 30, 2023, and 2022

(in thousands of dollars)	2023	2022
Assets		
Cash	$ 527,690	$ 374,672
Accounts receivable, net	334,703	394,067
Pledges receivable, net, at fair value	611,187	585,003
Contracts in progress, principally US government	104,722	104,740
Deferred charges and other assets	249,249	257,775
Investments, at fair value	30,692,919	32,548,631
Operating leases - right-of-use assets	212,615	236,823
Net asset position - defined benefit pension plan	634,725	382,863
Net asset position - retiree welfare benefit plan	253,522	312,366
Land, buildings, and equipment (at cost of $7,478,587 for June 2023; $7,001,073 for June 2022), net of accumulated depreciation	5,016,660	4,686,460
Total assets	**$ 38,637,992**	**$ 39,883,400**
Liabilities and Net Assets		
Liabilities:		
Accounts payable, accruals, and other liabilities	$ 641,934	$ 671,444
Deferred revenue and other credits	323,871	269,693
Advance payments	516,203	522,358
Operating lease liabilities	222,911	246,083
Liabilities due under life income fund agreements, at fair value	265,640	286,241
Borrowings, net of unamortized issuance costs	4,484,462	4,657,050
Total liabilities	**$ 6,455,021**	**$ 6,652,869**
Net Assets:		
Without donor restrictions	$ 13,999,705	$ 14,295,593
With donor restrictions	18,183,266	18,934,938
Total net assets	**$ 32,182,971**	**$ 33,230,531**
Total liabilities and net assets	**$ 38,637,992**	**$ 39,883,400**

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

MASSACHUSETTS INSTITUTE OF TECHNOLOGY
CONSOLIDATED STATEMENT OF ACTIVITIES
For the year ended June 30, 2023
(with summarized financial information for the year ended June 30, 2022)

(in thousands of dollars)	2023 Without Donor Restrictions	2023 With Donor Restrictions	Total 2023	Total 2022
Operating Revenues				
Tuition and similar revenues, exclusive of financial aid of $452,579 in 2023 and $417,572 in 2022	$ 409,031	$ -	$ 409,031	$ 415,252
Sponsored support:				
Campus direct	657,193	-	657,193	608,753
Lincoln direct	1,166,956	-	1,166,956	1,072,814
SMART direct	23,857	-	23,857	21,639
Indirect cost recovery	215,004	-	215,004	284,643
Total sponsored support	2,063,010	-	2,063,010	1,987,849
Contributions	381,862	16,201	398,063	455,729
Other revenue	267,134	-	267,134	241,985
Support from investments:				
Endowment	1,093,281	-	1,093,281	834,545
Other investments	267,552	-	267,552	187,657
Total support from investments	1,360,833	-	1,360,833	1,022,202
Auxiliary enterprises	157,333	-	157,333	142,133
Total revenues	$ 4,639,203	$ 16,201	$ 4,655,404	$ 4,265,150
Operating Expenses				
Salaries and wages	$ 1,839,997	$ -	$ 1,839,997	$ 1,700,986
Employee benefits	606,882	-	606,882	608,873
Supplies and services	1,226,705	-	1,226,705	1,125,335
Subrecipient agreements	163,808	-	163,808	161,253
Utilities, rent, and repairs	258,778	-	258,778	214,645
Total expenses before depreciation and interest	4,096,170	-	4,096,170	3,811,092
Results of operations before depreciation and interest	543,033	16,201	559,234	454,058
Depreciation	244,168	-	244,168	223,364
Interest expense	170,760	-	170,760	156,807
Results of operations	128,105	16,201	144,306	73,887
Net periodic benefit income other than service cost	172,824	-	172,824	197,935
Net results	$ 300,929	$ 16,201	$ 317,130	$ 271,822
Other Revenues, Gains, and Losses				
Contributions	$ -	$ 155,217	$ 155,217	$ 230,951
Net return on investments	(96,444)	(186,280)	(282,724)	(2,056,207)
Distribution of investment income and gains	(593,094)	(767,739)	(1,360,833)	(1,022,202)
Other changes	(14,559)	(35,340)	(49,899)	65,932
Postretirement plan changes other than net periodic benefit cost	173,549	-	173,549	(706,134)
Net asset reclassifications and transfers	(66,269)	66,269	-	-
Total other revenues, gains, and losses	(596,817)	(767,873)	(1,364,690)	(3,487,660)
Decrease in net assets	(295,888)	(751,672)	(1,047,560)	(3,215,838)
Net assets at the beginning of the year	14,295,593	18,934,938	33,230,531	36,446,369
Net assets at the end of the year	**$ 13,999,705**	**$ 18,183,266**	**$ 32,182,971**	**$ 33,230,531**

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

MASSACHUSETTS INSTITUTE OF TECHNOLOGY
CONSOLIDATED STATEMENTS OF CASH FLOWS
for the years ended June 30, 2023, and 2022

(in thousands of dollars)	2023	2022
CASH FLOW FROM OPERATING ACTIVITIES:		
Decrease in net assets	$ (1,047,560)	$ (3,215,838)
Adjustments to reconcile change in net assets		
to net cash used in operating activities:		
Net loss on investments	366,010	2,138,280
Change in retirement plan asset, net of accrued benefit liability	(193,018)	694,335
Change in allowances for uncollectible receivables	118,143	-
Depreciation	244,168	223,364
Net loss on life income funds and donor advised funds	40,288	39,680
Non-cash operating lease costs	24,208	36,689
Amortization of bond premiums and discounts and other adjustments	(3,224)	(4,993)
Change in operating assets and liabilities:		
Pledges receivable	(70,127)	(13,735)
Accounts receivable	(17,191)	(37,730)
Contracts in progress	18	(22,974)
Deferred charges and other assets	7,398	(20,582)
Accounts payable, accruals, and other liabilities, excluding building and equipment accruals	(35,177)	(25,239)
Liabilities due under life income fund agreements	6,179	(8,803)
Deferred revenue and other credits	7,318	(50,005)
Advance payments	(6,155)	8,632
Operating lease liability	(23,172)	(35,957)
Reclassification of donated securities	(7,471)	(9,659)
Reclassification of investment income for restricted purposes	(6,706)	(5,169)
Reclassification of contributions restricted for long-term investment	(179,408)	(264,029)
Net cash and restricted cash used in operating activities	(775,479)	(573,733)
CASH FLOW FROM INVESTING ACTIVITIES:		
Purchase of land, buildings, and equipment	(508,610)	(449,374)
Purchases of investments	(4,557,523)	(9,426,475)
Proceeds from sale of investments	6,022,585	9,435,900
Student notes issued	(3,827)	(3,788)
Collections from student notes	5,582	6,080
Net cash and restricted cash provided by (used in) investing activities	958,207	(437,657)
CASH FLOW FROM FINANCING ACTIVITIES:		
Contributions restricted for long-term investment	179,408	264,029
Payments to beneficiaries of life income funds	(26,780)	(26,406)
Proceeds from sale of donated securities restricted for endowment	7,471	9,659
Investment income for restricted purposes	6,706	5,169
Proceeds from borrowings	-	748,847
Repayment of borrowings	(168,534)	(15,907)
Repayments of government advance for student loans	(1,956)	(1,798)
Net cash and restricted cash (used in) provided by financing activities	(3,685)	983,593
Net increase (decrease) in cash and restricted cash	179,043	(27,797)
Cash and restricted cash at the beginning of the period	695,610	723,407
Cash and restricted cash at the end of the period	**$ 874,653**	**$ 695,610**
Supplemental Information on cash and restricted cash:		
Cash on Statements of Financial Position	$ 527,690	$ 374,672
Cash and restricted cash included in Investments (see Note B)	334,714	307,560
Restricted cash included in Other Assets (see Note G)	12,249	13,378
Total cash and restricted cash on Cash Flow	**$ 874,653**	**$ 695,610**

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

Notes to Consolidated Financial Statements

A. Accounting Policies

Basis of Presentation

The accompanying financial statements have been prepared in accordance with generally accepted accounting principles (GAAP) in the United States of America. The consolidated financial statements (financial statements) include Massachusetts Institute of Technology (MIT or the Institute) and its wholly owned subsidiaries.

Net assets, revenues, expenses, and gains and losses are classified into two categories based on the existence or absence of donor-imposed restrictions: net assets with donor restrictions and net assets without donor restrictions.

Net assets with donor restrictions include gifts, pledges, trusts, and remainder interests, and income and gains that are either required by donors to be permanently retained or for which restrictions have not yet been met. Such restrictions include purpose restrictions (donors have specified the purpose for which the net assets are to be spent), time restrictions imposed by donors or implied by the nature of the gift (e.g., capital projects, pledges to be paid in the future, life income funds), or by interpretations of law (net gains on donor-endowed gifts, where the gains have not yet been appropriated for spending). Net assets without donor restrictions are all the remaining net assets of MIT.

Donor-restricted gifts and grants (including gifts of long-lived assets) and distributed restricted endowment income (for which the restrictions are met within the same year of gift, grant, or distribution) are reported as revenue without donor restrictions. Amounts for which the restrictions are not met within the same year of gift, grant, or distribution are reclassified to net assets with donor restrictions through the net asset reclassifications and transfers line in the Consolidated Statement of Activities. These amounts are released back to net assets without donor restrictions, through the Net asset reclassifications and transfers line, during the years in which the restrictions are met. Gifts specified for the acquisition or construction of long-lived assets are reported as net assets with donor restrictions until the monies are expended and the long-lived assets (e.g., buildings) are put into use, at which point they are reclassified to net assets without donor restrictions, also through the Net asset reclassifications and transfers line.

MIT administers its various funds, including endowments, funds functioning as endowments, school or departmental funds, and related accumulated gains, in accordance with the principles of fund accounting. Gifts are recorded in fund accounts, and investment income is distributed to funds annually. Income distributed to funds may be a combination of capital appreciation and yield pursuant to MIT's total return investment and spending policies. Each year, the Executive Committee of the Corporation approves the rates of distribution of investment return to funds from MIT's investment pools. See Note J for further information on income distributed to funds.

MIT's operating revenues include tuition, sponsored support, contributions (expendable gifts and pledge payments), other revenue, support from investments, and auxiliary revenue.

Net results, as presented in MIT's Consolidated Statement of Activities, is the measure to which the Institute manages its annual budget and is used in financial reports presented to MIT's leadership, including the Executive Committee and the Corporation. It is a comprehensive measure of MIT's annual financial performance, including operating activity and the non-service-cost components of net periodic benefit costs or income that serve as a basis for cost recovery.

The Consolidated Statement of Activities also shows results of operations, a measure of ongoing activities, which excludes the impacts of the components of net periodic retirement benefit costs or income other than service costs, and results of operations before depreciation and interest, which is a valuable measure for the Institute as it highlights the impacts of financing and capital development costs that are included in net results.

A. Accounting Policies (continued)

Tax Status

MIT is a nonprofit organization that is tax-exempt under Section 501(c)(3) of the Internal Revenue Code, originally recognized in October 1926, with the most recent affirmation letter dated September 2017.

US GAAP requires MIT to evaluate tax positions taken by the Institute to recognize a tax liability (or asset) if the Institute has taken an uncertain tax position that, more likely than not, would not be sustained upon examination by the IRS. MIT has analyzed the tax positions taken and has concluded that as of June 30, 2023, and 2022, there are no significant uncertain positions taken or expected to be taken.

Cash

Certain cash balances, totaling $54.7 million and $24.5 million as of June 30, 2023, and 2022, respectively, are restricted for use under certain sponsored research agreements. These amounts are included within the Cash line in the Consolidated Statements of Financial Position.

The Institute had approximately $485.8 million and $310.2 million as of June 30, 2023, and 2022, respectively, of its cash accounts with a single institution. The Institute has not experienced any losses associated with deposits at this institution.

Land, Buildings, and Equipment

Land, buildings, and equipment are shown at cost when purchased, or at fair value as of the date of a gift when received as a gift, net of accumulated depreciation. When expended, costs associated with the construction of new facilities are shown as construction in progress until such projects are completed and put into use. Depreciation is computed on a straight-line basis over the estimated useful lives of 25 to 50 years for buildings, 3 to 25 years for equipment, and 4 to 6 years for software.

Fully depreciated assets were removed from the consolidated financial statements in the amount of $97.1 million and $71.3 million during 2023 and 2022, respectively. Land, buildings, and equipment as of June 30, 2023, and 2022, are shown in Table 1 below.

TABLE 1. LAND, BUILDINGS, AND EQUIPMENT

(in thousands of dollars)	2023	2022
Land	$ 119,063	$ 107,557
Land improvements	117,512	109,590
Educational buildings	6,183,878	5,789,118
Equipment	449,136	421,716
Software	24,933	33,524
Total	6,894,522	6,461,505
Less: accumulated depreciation	(2,461,927)	(2,314,613)
Construction in progress	574,146	530,284
Software projects in progress	9,919	9,284
Net land, buildings, and equipment	**$ 5,016,660**	**$ 4,686,460**

Depreciation expense was $244.2 million in fiscal 2023 and $223.4 million in fiscal 2022. Interest of $10.1 million and $9.8 million was capitalized during fiscal 2023 and fiscal 2022, respectively, in connection with MIT's construction projects.

A. Accounting Policies (continued)

Tuition and Student Support

Tuition and similar revenues, shown in Table 2 below, include tuition and fees for degree programs as well as tuition and fees for executive and continuing education programs at MIT. Tuition revenue is recognized over the period during which the courses are taken.

TABLE 2. TUITION AND SIMILAR REVENUES

(in thousands of dollars)	2023	2022
Undergraduate and graduate programs*	$ 316,934	$ 333,083
Executive and continuing education programs	92,097	82,169
Tuition and similar revenues	**$ 409,031**	**$ 415,252**

* Undergraduate and graduate programs at published rates totaled $769,513 and $750,655 in 2023 and 2022, respectively, and financial aid applied to undergraduate and graduate programs was $452,579 and $417,572 in 2023 and 2022, respectively.

Tuition support shown in Table 3 below is awarded to undergraduate students by MIT based on need. Graduate students are provided with tuition support in connection with research assistance, teaching assistance, and fellowship appointments.

TABLE 3. STUDENT SUPPORT

	2023			2022		
(in thousands of dollars)	Institute Sources	External Sponsors	Total Student Support	Institute Sources	External Sponsors	Total Student Support
Undergraduate tuition support	$ 153,329	$ 20,539	$ 173,868	$ 143,516	$ 20,039	$ 163,555
Graduate tuition support	299,250	56,711	355,961	274,056	63,451	337,507
Fellowship stipends	50,128	18,712	68,840	38,330	16,913	55,243
Student employment	63,507	88,072	151,579	58,619	90,898	149,517
Total	**$ 566,214**	**$ 184,034**	**$ 750,248**	**$ 514,521**	**$ 191,301**	**$ 705,822**

A. Accounting Policies (continued)

Sponsored Support and Advance Payments

Almost all of Lincoln Laboratory and Singapore-MIT Alliance for Research and Technology (SMART) sponsored revenue, as well as a portion of campus sponsored revenue, come from exchange contracts. Sponsored revenue related to exchange contracts is recognized as MIT fulfills the terms of the agreements, which generally span fewer than five years. Almost all of campus sponsored revenue—and a portion of Lincoln Laboratory and SMART sponsored revenue—comes from non-exchange contracts. Sponsored revenue associated with non-exchange contracts is recognized as the qualified expenditures are incurred. Sponsored activities at Lincoln Laboratory (which are contractually authorized by the sponsor but for which costs have not yet been incurred) totaled $907.4 million and $731.2 million as of fiscal 2023 and fiscal 2022, respectively. Sponsored activities on campus (which are contractually authorized by the sponsor but for which costs have not yet been incurred) totaled $1,157.3 million and $1,064.5 million as of fiscal 2023 and fiscal 2022, respectively.

Advance payments are amounts received by MIT from sponsors under the terms of agreements that generally require the exchange of assets, rights, or privileges between MIT and the sponsor. Advance payments are made for activity that will occur in the near future, generally within the next fiscal year.

Indirect sponsored revenue includes the portion of facilities and administrative expenses that is attributed to sponsored activities. MIT has recorded reimbursement of indirect costs relating to sponsored research activities at negotiated fixed billing rates. For non-research activities (such as instruction and other sponsored activity) MIT records reimbursement of indirect costs on federal awards using the de minimis rate allowed by Uniform Guidance, and for non-federal awards using rates that are agreed to with the sponsor.

The revenue generated by the negotiated indirect research rates is adjusted each fiscal year to reflect any variance between the negotiated fixed rates and rates based on actual costs; any adjustment in the rate is charged or credited to net assets without donor restrictions. The actual cost rate is audited by the Defense Contract Audit Agency (DCAA), and a final fixed-rate agreement is signed by the U.S. government and MIT. The variance between the negotiated fixed rate and the final audited rate results in a carryforward (over- or under-recovery). The carryforward is included in the calculation of negotiated fixed billing rates in future years.

Gifts and Pledges (Contributions)

Gifts and pledges (contributions) are recognized when MIT has an unconditional right to receive payment. Gifts of securities are recorded at their fair value at the date of contribution. Donated securities received totaled $94.4 million and $82.6 million in fiscal 2023 and fiscal 2022, respectively. Gifts of equipment received from manufacturers and other donors are put into use and recorded by MIT at fair value. Gifts of equipment totaled $0.8 million in fiscal 2023 and $0.3 million in fiscal 2022. Pledges consist of unconditional promises to contribute to MIT in the future. Pledges are reported at their estimated fair values. Pledges receivable are classified as Level 3 under the valuation hierarchy described in Note B.

Pledges, trusts, and remainder interests are reported at their estimated fair values. MIT does not recognize donated works of art, historical treasures, and similar assets in the financial statements if they are part of a collection. Items that are part of a collection are received for educational purposes, and most are displayed throughout MIT. In general, collections are not disposed of for financial gain or otherwise encumbered in any manner.

Other Revenue and Auxiliary Enterprises

For the revenue streams included in other revenue and auxiliary enterprises, revenue is recognized at the point in time when goods or services are provided and are included in the without donor restrictions net asset category. Other revenue includes patent royalty revenue, membership agreement revenue, medical services revenue, and various other types. Auxiliary enterprises revenue includes room and board revenue, as well as revenue earned by MIT Press, Technology Review, and Endicott House.

A. Accounting Policies (continued)

Life Income Funds

MIT's life income fund agreements with donors consist primarily of irrevocable charitable gift annuities, pooled income funds, and charitable remainder trusts for which MIT serves as trustee. Assets are invested and payments are made to donors and other beneficiaries in accordance with the respective agreements. MIT records the assets that are associated with each life income fund at fair value and records as liabilities the present value of the estimated future payments at current interest rates to be made to the donors and beneficiaries under these agreements. Life income fund assets are included within investments in the Consolidated Statements of Financial Position. A rollforward of liabilities due under life income fund agreements is presented in Table 4 below.

TABLE 4. LIABILITIES DUE UNDER LIFE INCOME FUNDS

(in thousands of dollars)	2023	2022
Balance at the beginning of the year	$ 286,241	$ 321,450
Additions for new gifts	4,057	5,558
Termination and payments to beneficiaries	(25,863)	(27,856)
Net investment and actuarial gain (loss)	1,205	(12,911)
Balance at the end of the year	**$ 265,640**	**$ 286,241**

New Accounting Standards

In June 2016, the FASB issued ASU No. 2016-13, *Measurement of Credit Losses on Financial Instruments (Topic 326)* which replaces the current GAAP incurred loss impairment methodology with one that reflects expected credit losses and requires consideration of a broader range of reasonable and supportable information to inform credit loss estimates. This standard will be effective for the Institute for the fiscal year ended June 30, 2024. The Institute is currently evaluating the potential impact of adoption to the financial statements.

A. Accounting Policies (continued)

Non-Cash Items

Non-cash transactions excluded from the Consolidated Statements of Cash Flows include $18.3 million and $12.7 million of accrued liabilities related to plant and equipment purchases as of June 30, 2023, and 2022, respectively.

Use of Estimates

The preparation of financial statements in conformity with GAAP requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities, contingent assets and liabilities at the date of the financial statements, and the reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates.

Subsequent Events

MIT has evaluated subsequent events through October 6, 2023, the date on which the financial statements were issued. There were no subsequent events that occurred after the date of the statement of financial position that have a material impact on MIT's financial statements.

Related Parties

MIT has a number of related-party entities, the majority of which are in MIT's consolidated financial statements. There are three categories of related-party entities that are not in MIT's consolidated financial statements, and those are further described here. The first category is non-investment entities with an education- or research-based mission. These entities are all U.S. corporations. Income from administration or other services provided to these entities is included as Other revenue in the Consolidated Statement of Activities, and related costs are included as Supplies and services or Subrecipient expenses.

Second are trusts for the benefit of employees that are managed by or under the trusteeship of MIT management. The assets of these U.S. trusts offset the benefit obligations of the defined benefit pension and retiree welfare retirement plans to arrive at the net funded status of each plan, both of which are shown on separate line items on the Consolidated Statements of Financial Position. Please refer to footnote I for further details.

Third are investment entities for which MIT invests in their equity securities. These entities are limited partnership or equivalent entities located in both the U.S. and internationally. The Institute recognizes these as Investments, at fair value on the Consolidated Statements of Financial Position and in Net return on investments in the Consolidated Statement of Activities. Please refer to footnote B for further details.

MIT-related parties also include Executive Committee members and senior management, their family members, and any entities with which they are associated that may do business with MIT. Transactions between MIT and members of the Executive Committee or senior management can include loans from MIT reported as investments or accounts receivable. Family members of these individuals may at times receive payments from MIT in the form of grants or compensation. There may also be transactions in the ordinary course of business between MIT and companies with which these individuals have a relationship.

Summarized Information

The Consolidated Statement of Activities includes certain prior year summarized comparative information in total, but not by net asset class. Such information does not include sufficient detail to constitute a presentation in conformity with GAAP in the United States of America. Accordingly, such information should be read in conjunction with MIT's financial statements for the year ended June 30, 2022, from which the summarized information was derived.

B. Investments

Investments are presented at fair value in accordance with GAAP.

Cash and short-term investments include cash, money market funds, repurchase agreements, and negotiable certificates of deposit, and are valued at cost, which approximates fair value. Instruments listed or traded on a securities exchange are valued at the last quoted price on the primary exchange where the securities are traded.

Over-the-counter positions, such as interest rate and total return swaps, credit default swaps, options, exchange agreements, and interest rate cap and floor agreements, are valued using broker quotes or models using market-observable inputs.

Investments in non-exchange-traded debt are primarily valued using independent pricing sources that use broker quotes or models using observable market inputs.

Investments managed by external managers include those in (i) absolute return; (ii) domestic, foreign, and private equity; (iii) real estate; and (iv) real asset commingled funds. The fair value of securities held in external investment funds that do not have readily determinable fair values are determined by the external managers based upon industry-standard valuation approaches that require varying degrees of judgment, taking into consideration, among other things: the cost of the securities, valuations, and transactions of comparable public companies; the securities' estimated future cash flow streams; and the prices of recent significant placements of securities of the same issuer. Using these valuations, most of these external managers calculate MIT's capital account or net asset value (NAV) in accordance with, or in a manner consistent with, GAAP's fair value principles.

As a practical expedient, MIT is permitted under GAAP to estimate the fair value of its investments with external managers using the external managers' reported NAV without further adjustment, unless MIT expects to sell the investment at a value other than NAV or the NAV is not calculated in accordance with GAAP.

MIT has elected to measure certain equity securities (those without a readily determinable fair value that do not qualify to use NAV as a practical expedient) at cost or fair value on the date of investment less impairment, adjusted for changes in observable prices of the same issuer (the "measurement alternative"). The election to apply the measurement alternative is applied on a security-by-security basis. MIT reassesses whether these investments qualify for the measurement alternative and performs an impairment analysis on an annual basis.

As of June 30, 2023, and 2022, MIT held $260.1 million and $236.2 million, respectively, of investments that are valued using the measurement alternative. These investments are included within Level 3 of the fair value hierarchy table as explained further in footnote B.

There have been no impairment adjustments or observable price changes recognized.

Split-interest agreements are generally valued at the present value of the future distributions expected to be received over the term of the agreement.

MIT performs ongoing due diligence to determine that the fair value of investments is reasonable. In particular, to ensure that the valuation techniques for investments that are categorized within the fair value hierarchy are fair, consistent, and verifiable, MIT has established a Valuation Committee ("the Committee") that oversees the valuation processes and procedures and ensures that the policies are fair and consistently applied. The Committee is responsible for conducting annual reviews of the valuation policies and evaluating the overall fairness and consistent application of the valuation policies. The Committee reviews external manager due diligence to substantiate the use of NAV as a practical expedient for estimates of fair value for externally managed funds. The Committee is comprised of senior personnel with members who are independent of investment functions. The Committee meets semiannually or more frequently, and members of the Committee report to MIT's Risk and Audit Committee as needed.

The methods described in this note may produce a fair value that may not be indicative of net realizable value or reflective of future fair values. While MIT believes its valuation methods are appropriate and consistent with those of other market participants, the use of different methodologies or assumptions to determine the fair value of certain financial instruments could result in a different estimate of fair value at the reporting date.

MIT leverages certain real estate investments to optimize the use of invested capital in support of the Institute's mission. The liabilities associated with these financings are presented, on a net basis, with the investment balances on the associated real estate asset found in Table 5. The liabilities associated with real estate investments were $1,324.4 million and $1,324.4 million as of June 30, 2023, and 2022, respectively. MIT's real estate subsidiaries are separate legal entities, whose assets and credit are not available to satisfy the liabilities of MIT as a stand-alone entity. Also, the liabilities of MIT's subsidiaries do not constitute obligations of MIT as a stand-alone entity.

MIT may enter into short sales whereby it sells securities that may or may not be owned by MIT in anticipation of a decline in the price of such securities or in order to hedge portfolio positions. Cash collateral and certain securities owned by MIT may be held at counterparty brokers to collateralize these positions and are included in investments in the Consolidated Statements of Financial Position and in restricted cash included

B. Investments (continued)

in investments on the Consolidated Statements of Cash Flows.

GAAP establishes a hierarchy of valuation inputs based on the extent to which the inputs are observable in the marketplace. Observable inputs reflect market data obtained from sources independent of the reporting entity. Unobservable inputs reflect the entity's own assumptions about how market participants would value an asset or liability based on the best information available. Valuation techniques used to measure fair value must maximize the use of observable inputs and minimize the use of unobservable inputs. MIT follows a fair value hierarchy based on three levels of inputs, of which the first two are considered observable and the last is considered unobservable.

The following describes the hierarchy of inputs used to measure fair value and the primary valuation methodologies used by MIT for financial instruments measured at fair value on a recurring basis. The three levels of inputs are as follows:

Level 1 – Valuations based upon observable inputs that reflect quoted prices in active markets for identical assets and liabilities.

Level 2 – Valuations based upon: (i) quoted market prices for similar assets or liabilities in active markets; (ii) quoted prices for identical or similar assets or liabilities in markets that are not active; or (iii) other significant market-based inputs that are observable, either directly or indirectly.

Level 3 – Valuations based upon unobservable inputs that are significant to the overall fair value measurements. Level 3 investments are valued by MIT based upon valuation information received from the relevant entity, which may include last trade information, third-party appraisals of real estate, or valuations prepared in connection with the administration of an employee stock ownership plan. MIT may also utilize industry-standard valuation techniques, including discounted cash flow models. The significant unobservable inputs used in the fair value measurements of MIT's direct investments may include their cost of capital, equity, and industry risk premiums, and for construction under development in Kendall Square, discounts related to completion.

Investments managed by external managers in fund structures are not readily marketable and are reported at fair value utilizing the most current information provided by the external manager, subject to assessments that the information is representative of fair value and in consideration of any factors deemed pertinent to the fair value measurement. These investments are shown in the NAV column of Table 5.

A financial instrument's categorization within the valuation hierarchy is based upon the lowest level of input that is significant to its fair value measurement. Market information is considered when determining the proper categorization of the investment's fair value measurement within the fair valuation hierarchy.

B. Investments (continued)

Table 5 presents MIT's investments at fair value as of June 30, 2023, and 2022, respectively, grouped by the valuation hierarchy described herein. All net realized and unrealized gains and losses related to financial instruments held by MIT included in Table 5 are reflected in the Consolidated Statement of Activities. Cumulative unrealized gains related to Level 3 investments totaled $2,263.7 million and $2,668.0 million as of June 30, 2023, and 2022, respectively.

TABLE 5. INVESTMENTS

(in thousands of dollars)	Level 1	Level 2	Level 3	NAV	Total Fair Value
Fiscal Year 2023					
Cash and short-term investments	$ 313,843	$ -	$ -	$ -	$ 313,843
US Treasury	1,727,353	-	-	-	1,727,353
US government agency	-	34,263	-	-	34,263
Domestic bonds	6,916	1,221,061	146,166	-	1,374,143
Foreign bonds	377	249,784	-	-	250,161
Common equity:					
Domestic	155,930	1	233,650	-	389,581
Foreign	1,635,001	49,884	23,965	-	1,708,850
Equity:**					
Absolute return	-	-	-	4,671,478	4,671,478
Domestic	-	-	-	2,191,364	2,191,364
Foreign	-	-	-	2,135,508	2,135,508
Private	-	-	-	10,544,528	10,544,528
Real estate*	1,231	-	3,486,773	1,499,767	4,987,771
Real assets*	8,159	-	346	262,770	271,275
Split-interest agreements	-	-	81,355	-	81,355
Other	-	-	12,245	-	12,245
Derivatives, assets/(liabilities)	43	(842)	-	-	(799)
Investments, at fair value	**$ 3,848,853**	**$ 1,554,151**	**$ 3,984,500**	**$ 21,305,415**	**$ 30,692,919**
Fiscal Year 2022					
Cash and short-term investments	$ 437,314	$ -	$ -	$ -	$ 437,314
US Treasury	2,268,472	-	-	-	2,268,472
US government agency	-	30,087	-	-	30,087
Domestic bonds	28,330	1,038,067	127,650	-	1,194,047
Foreign bonds	101,352	327,075	-	-	428,427
Common equity:					
Domestic	157,741	-	236,320	-	394,061
Foreign	1,198,950	55,941	15,398	-	1,270,289
Equity:**					
Absolute return	-	-	-	5,008,840	5,008,840
Domestic	-	-	-	2,238,425	2,238,425
Foreign	-	-	-	2,640,950	2,640,950
Private	-	-	-	11,028,666	11,028,666
Real estate*	1,937	-	3,884,874	1,374,864	5,261,675
Real assets*	5,029	-	317	237,927	243,273
Split-interest agreements	-	-	80,970	-	80,970
Other	-	-	19,720	-	19,720
Derivatives, assets/(liabilities)	92	3,323	-	-	3,415
Investments, at fair value	**$ 4,199,217**	**$ 1,454,493**	**$ 4,365,249**	**$ 22,529,672**	**$ 32,548,631**

** Includes direct investments and investments held through commingled vehicles.*

*** Includes commingled vehicles that invest in these types of investments.*

B. Investments (continued)

Table 6 below is a rollforward of the investments classified by MIT within Level 3 of the fair value hierarchy defined earlier in this note as of June 30, 2023, and 2022.

TABLE 6. ROLLFORWARD OF LEVEL 3 INVESTMENTS

(in thousands of dollars)	Fair Value Beginning	Realized Gains (Losses)	Unrealized Gains (Losses)	Purchases	Sales	Other Changes and Transfers	Fair Value Ending
Fiscal Year 2023							
Domestic bonds	$ 127,650	$ 23	$ 577	$ 25,615	$ (7,699)	$ -	$ 146,166
Common equity:							
Domestic	236,320	2,211	(3,103)	449	(2,227)	-	233,650
Foreign	15,398	-	(491)	9,058	-	-	23,965
Real estate	3,884,874	15,874	(394,542)	259,681	(246,493)	(32,621)	3,486,773
Real assets	317	-	29	-	-	-	346
Split-interest agreements	80,970	245	692	3	(555)	-	81,355
Other	19,720	3	(7,474)	-	(4)	-	12,245
Investments, at fair value	**$ 4,365,249**	**$ 18,356**	**$ (404,312)**	**$ 294,806**	**$ (256,978)**	**$ (32,621)**	**$ 3,984,500**
Fiscal Year 2022							
Domestic bonds	$ 119,092	$ 3	$ (3)	$ 18,449	$ (9,891)	$ -	$ 127,650
Common equity:							
Domestic	234,757	-	2,031	-	-	(468)	236,320
Foreign	87,539	(5)	(39,421)	18,195	(47)	(50,863)	15,398
Real estate	3,321,213	1,203	704,801	477,377	(90)	(619,630)	3,884,874
Real assets	313	-	4	-	-	-	317
Split-interest agreements	89,999	-	(9,103)	-	(346)	420	80,970
Other	6,445	1,601	9,486	3,900	(1,712)	-	19,720
Investments, at fair value	**$ 3,859,358**	**$ 2,802**	**$ 667,795**	**$ 517,921**	**$ (12,086)**	**$ (670,541)**	**$ 4,365,249**

Table 7 below sets forth a summary of valuation techniques and quantitative information utilized in determining the fair value of MIT's Level 3 investments as of June 30, 2023, and 2022.

TABLE 7. LEVEL 3 VALUATION TECHNIQUES

(in thousands of dollars)	Fair Value as of June 30, 2023	Fair Value as of June 30, 2022	Valuation Technique	Unobservable Input	2023 Rates	2023 Weighted Average	2022 Rates	2022 Weighted Average
Real estate	$ 3,824,407	$ 4,372,209	Income approach	Discount Rate	5.00 - 8.00%	6.89%	4.25 - 7.50%	6.12%
				Capitalization Rate	4.00 - 7.25%	5.65%	3.75 - 7.05%	4.45%
				Terminal Capitalization Rate	4.25 - 7.00%	6.03%	4.00 - 6.50%	4.93%
	240,208	229,935	Market approach	Comparable sale transactions	$170-365/FAR	$289/FAR	$165-365/FAR	$293/FAR
Equity and real assets**	8,954	15,140	Discounted cash flow	Discount Rate	25.00%	25.00%	25.00%	25.00%
			Last round of financing	N/A	N/A	N/A	N/A	N/A
Split-interest agreements	81,355	80,970	Net present value	Discount Rate	4.45%	4.45%	3.85%	3.85%
Total assets*	**$ 4,154,924**	**$ 4,698,254**						

** Certain Level 3 investments and debt totaling ($430,480) and ($569,283) as of June 30, 2023 and June 30, 2022, respectively, have been valued at cost or using unadjusted third-party quotations and thus have been excluded from this table.*

*** Certain Level 3 investments totaling $260,056 and $236,278 as of June 30, 2023 and June 30, 2022, respectively, have been valued using the measurement and thus have been excluded from this table.*

B. Investments (continued)

MIT has made commitments to make periodic contributions in future periods to investments managed by external managers, and certain of these investments may be subject to restrictions that: (i) limit MIT's ability to withdraw capital after such investment; and (ii) may limit the amount that may be withdrawn as of a given redemption date due to notice periods, lock-ups, and gates. Most absolute return, domestic equity, and foreign equity commingled funds limit withdrawals to monthly, quarterly, or other periods, and may require notice periods. In addition, some of these funds are able to designate a portion of the investments as illiquid in "side-pockets," and these funds may not be available for withdrawal until liquidated by the investing fund. For the funds where MIT's ability to withdraw capital is limited, primarily with private equity, real estate, and real asset funds, distributions are made when sales of assets are made within these funds, and the investment cycle for these funds can be as long as 15 to 20 years. These restrictions may limit MIT's ability to respond quickly to changes in market conditions. However, MIT does have various sources of liquidity at its disposal. Refer to footnote E for further details. Details on the remaining unfunded commitments and current redemption terms and restrictions by asset class and type of investment are provided below in Table 8 as of June 30, 2023, and 2022.

TABLE 8. UNFUNDED COMMITMENTS AND REDEMPTON TERMS AND RESTRICTIONS

(in thousands of dollars)	Unfunded Commitments	Fair Value	Unfunded Commitments	Fair Value	Redemption Terms	Days Notice
Equity:						
Absolute return[1]	$ 66,190	$ 4,671,478	$ 63,678	$ 5,008,840	Ranges from daily to 48 months[5]	0 to 365 days
Domestic[2]	52,685	2,191,364	52,685	2,238,425	Ranges from 30 days to 48 months[5]	1 to 120 days
Foreign[3]	517	2,135,508	1,200	2,640,950	Ranges from daily to 48 months[5]	1 to 180 days
Private	3,041,935	10,544,528	3,380,446	11,028,666	Close-ended funds not available for redemption	Not redeemable
Real estate	737,402	1,499,767	719,327	1,374,864	Close-ended funds not available for redemption	Not redeemable
Real assets[4]	16,949	262,770	35,663	237,927	4 months[5]	90 days
Total	**$ 3,915,678**	**$ 21,305,415**	**$ 4,252,999**	**$ 22,529,672**		

[1]Absolute return funds include funds that have remaining lock-up provisions up to 56 months.

[2]Domestic funds include funds that have remaining lock-up provisions up to 35 months.

[3]Foreign funds include funds that have remaining lock-up provisions up to 20 months.

[4] Real asset funds include funds that have remaining lock-up provisions up to 8 months.

[5] Includes funds that are not available for redemption.

C. Derivative Financial Instruments and Collateral

For its investment management, MIT uses a variety of financial instruments with off-balance-sheet risk involving contractual or optional commitments for future settlement. MIT uses these instruments primarily to manage or hedge its exposure to extreme market events and fluctuations in asset classes or currencies. Instruments utilized include fixed income, currency and equity futures, options, and swaps. The risks of these instruments, to varying degrees, include the possibility for imperfect correlation between the change in the market value of assets being hedged and the prices of the derivative or hedge instruments, interest, credit market, liquidity, and counterparty risk.

To manage the counterparty risk, MIT requires collateral to the maximum extent possible under normal trading practices. Collateral is moved on a daily basis as required by fluctuations in the market. The collateral is generally in the form of debt obligations issued by the US Treasury or cash. In the event of counterparty default, MIT has the right to use the collateral to offset the loss associated with the replacement of the agreements. Maximum risk of loss from counterparty credit risk on over-the-counter derivatives is generally the aggregate unrealized appreciation in excess of any collateral pledged by the counterparty. ISDA (International Swaps and Derivatives Association) Master Agreements under which many derivatives are traded allow MIT or the counterparties to an over-the-counter derivative to terminate the contract prior to maturity in the event either party fails to meet the terms in the ISDA Master Agreements. This would cause an accelerated payment of net liability, if owed to the counterparty.

MIT enters into arrangements only with counterparties believed to be creditworthy. On June 30, 2023, and 2022, cash collateral and certain securities owned by MIT were held at counterparty brokers to collateralize these positions and are included in investments in the Consolidated Statements of Financial Position.

Derivatives held by limited partnerships and commingled investment vehicles pose no off-balance sheet risk to MIT due to the limited liability structure of these investments.

Cumulative net losses related to derivatives totaled $78.6 million for the year ended June 30, 2023. Cumulative net gains related to derivatives totaled $184.9 million for the year ended June 30, 2022.

D. Pledges Receivable

Table 9 below shows the time periods in which pledges receivable as of June 30, 2023, and 2022, are expected to be realized.

TABLE 9. PLEDGES RECEIVABLE

(in thousands of dollars)	2023	2022
In one year or less	$ 348,241	$ 325,612
Between one year and five years	367,618	313,267
More than five years	54,674	61,526
Less: allowance for unfulfilled pledges	(159,346)	(115,402)
Pledges receivable, net	**$ 611,187**	**$ 585,003**

A review of pledges is periodically made regarding collectability. As a result, the allowance for unfulfilled pledges is adjusted, and some pledges have been cancelled and are no longer recorded in the financial statements.

Pledges were discounted in the amount of $115.7 million and $78.3 million in 2023 and 2022, respectively. The pledge discount rate ranged from fiscal 2023 at 5.4 percent to fiscal 2044 at 4.5 percent. MIT had gross conditional pledges, not recorded, for the promotion of education and research of $193.4 million and $298.8 million in fiscal 2023 and 2022, respectively. Conditional pledges are categorized as follows: fundraising challenge, building construction progress, foundation grants, and other.

Table 10 below shows the breakout of conditional pledge amounts as of June 30, 2023, and 2022.

TABLE 10. CONDITIONAL PLEDGES

(in thousands of dollars)	2023	2022
Building Construction	$ 110,746	$ 124,495
Fundraising Challenge	25,309	100,380
Foundation Grants	30,162	59,760
Other	27,188	14,159
Total conditional pledges	**$ 193,405**	**$ 298,794**

Table 11 below is a rollforward of pledges receivable as of June 30, 2023, and 2022.

TABLE 11. ROLLFORWARD OF PLEDGES RECEIVABLE

(in thousands of dollars)	2023	2022
Balance at beginning of the year	$ 585,003	$ 571,268
New pledges	311,774	303,056
Pledge payments received	(204,206)	(243,443)
Change in pledge discount	(37,441)	(51,902)
Change in allowance for unfulfilled pledges	(43,943)	6,024
Balance at the end of the year	**$ 611,187**	**$ 585,003**

E. Liquidity

Table 12 below details the Institute's financial assets and resources available to meet cash needs for general expenditures within one year of the date of the Consolidated Statements of Financial Position.

TABLE 12. LIQUIDITY AND AVAILABILITY OF RESOURCES

(in thousands of dollars)	2023	2022
Financial assets:		
Cash and liquid operating investments	$ 2,741,231	$ 3,020,767
Accounts receivable	320,984	379,812
Pledges receivable	132,617	170,826
Investments appropriated for spending in the following year	1,300,710	1,221,656
Total financial assets available within one year	**$ 4,495,542**	**$ 4,793,061**

As part of MIT's liquidity management strategy, financial assets are structured to be available as its general expenditures, liabilities, and other obligations come due. MIT invests its working capital, which is comprised of cash and capital project funds in excess of daily requirements, in various investment vehicles. To help manage unanticipated liquidity needs, MIT also maintains a bank line of credit for $500.0 million, of which $500.0 million and $387.0 million was undrawn as of June 30, 2023, and 2022, respectively (see Note F for further details on the line of credit).

F. Net Borrowings

MIT's outstanding borrowings as of June 30, 2023, and 2022, are shown in Table 13 below.

TABLE 13. NET BORROWINGS

(in thousands of dollars / due dates are calendar based / par values as of 2023)	2023	2022
Educational plant		
Massachusetts Health and Educational Facilities Authority (MassDevelopment)		
Series I, 5.20%, due 2028, par value $30,000	$ 30,257	$ 30,316
Series J-1, variable rate, due 2031, par value $125,000	125,000	125,000
Series J-2 variable rate, due 2031, par value $125,000	125,000	125,000
Series K, 5.5%, due 2032, par value $121,500	126,010	181,900
Series L, 5.0%-5.25%, due 2023-2033, par value $115,670	119,391	120,003
Series M, 5.25%, due 2024-2030, par value $68,760	71,206	71,736
Series P, 5.0%, due 2050, par value $136,055	202,475	204,932
Total MassDevelopment	799,339	858,887
Taxable		
Medium Term Notes Series A, 7.125% due 2026, par value $17,415	17,402	17,398
Medium Term Notes Series A, 7.25%, due 2096, par value $45,604	45,485	45,480
Taxable Bonds, Series B, 5.60%, due 2111, par value $750,000	747,238	747,238
Taxable Bonds, Series C, 4.678%, due 2114, par value $550,000	550,000	550,000
Taxable Bonds, Series D, 3.308-3.959%, due 2026-2038, par value $456,000	456,000	456,000
Taxable Bonds, Series E, 3.885%, due 2116, par value $500,000	500,000	500,000
Taxable Bonds, Series F, 2.989%, due 2050, par value $525,000	547,395	548,225
Taxable Bonds, Series G, 2.294% due 2051, par value $350,000	350,000	350,000
Taxable Bonds, Series H, 3.067% due 2052, par value $500,000	500,000	500,000
Notes payable to bank, variable rate, due 2023	-	113,035
Total Taxable	3,713,520	3,827,376
Total borrowings*	4,512,859	4,686,263
Unamortized bond issuance costs	(28,397)	(29,213)
Total borrowings net of unamortized debt issuance costs	**$ 4,484,462**	**$ 4,657,050**

** Proceeds from recent issuances were in the process of being invested in physical assets in 2023 and 2022 with unused balances held in investments.*

F. Net Borrowings (continued)

The aggregate amounts of debt payments and sinking fund requirements for each of the next five fiscal years are shown in Table 14 below.

TABLE 14. DEBT PRINCIPAL OBLIGATIONS

(in thousands of dollars)		
2024	$	51,455
2025		12,385
2026		13,030
2027		103,415
2028		30,000

MIT maintains an undrawn line of credit with a major financial institution for an aggregate commitment of $500.0 million. The line of credit was renewed in fiscal 2023 and now expires on March 31, 2026.

Cash paid for interest on long-term debt in fiscal 2023 and fiscal 2022 was $188.2 million and $164.9 million, respectively.

Variable interest rates as of June 30, 2023, are shown in Table 15 below.

TABLE 15. VARIABLE INTEREST RATES

(in thousands of dollars)	Amount	Rate
MassDevelopment Series J-1	$ 125,000	3.90%
MassDevelopment Series J-2	125,000	3.75%

In the event that MIT receives notice of any optional tender on its Series J-1 and Series J-2 variable-rate bonds, or if these 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, MIT will be obligated to purchase the bonds tendered at 100.0 percent of par on the tender date. In the event that MIT is obligated to purchase the bonds, cash on hand or liquidation of short-term investments from operating funds would be used as a source of funds.

MIT maintains an interest rate swap agreement to manage the interest cost and risk associated with a portion of the variable rate debt included in Table 15 above. Under the agreement, MIT pays a fixed rate of 4.91 percent and receives a payment indexed to the Securities Industry and Financial Market Association (SIFMA) index on a notional amount of $125.0 million. The notional amount of this derivative is not recorded on MIT's Consolidated Statements of Financial Position. As of June 30, 2023, and 2022, the swap agreement had fair values of ($17.3) million and ($25.5) million, respectively, included in the Accounts payable, accruals, and other liabilities line item on the Consolidated Statements of Financial Position. Fair value is measured using Level 2 inputs as defined in Note B. This swap had net gains of $8.2 million and $22.5 million in fiscal 2023 and 2022, respectively.

G. Commitments and Contingencies

Federal Government Funding

MIT receives funding or reimbursement from federal agencies for sponsored programs under government grants and contracts. These grants and contracts provide for reimbursement of indirect costs. MIT's indirect cost reimbursements for sponsored research activities are based on rates negotiated with the Office of Naval Research (ONR), MIT's cognizant federal agency. Indirect research rates are based on fixed rates with carryforward of under- or over-recoveries. MIT recorded a net under-recovery of $87.3 million and $75.1 million as of June 30, 2023, and 2022, respectively. The Institute recorded a $75.0 million reserve in fiscal 2023 to reflect that MIT may not, over time, fully recover the $87.3 million under-recovery.

The DCAA is responsible for auditing indirect charges to research grants and contracts in support of ONR's negotiating responsibility. The Institute's rates have been audited by DCAA through fiscal 2021, and the audit for fiscal 2022 is in progress. ONR has completed negotiations of final rates through fiscal 2021 and forward pricing rates through fiscal 2024.

Leases

The Institute is the lessee of space under operating (rental) leases with contractual terms longer than twelve months. The Institute determines whether a contract is a lease at inception. Identified leases are subsequently measured, classified, and recognized at lease commencement. The Institute's leases generally have terms that range from one to fifteen 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 the Operating leases - right-of-use assets line item and Operating lease liabilities line item, respectively, in the Consolidated Statements of Financial Position. 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 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 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, was $41.1 million and $40.5 million in fiscal 2023 and fiscal 2022, respectively.

Future minimum lease payments with a reconciliation to the operating lease liabilities number in the Consolidated Statements of Financial Position as of June 30, 2023, are shown below.

TABLE 16. ANNUAL MINIMUM LEASE

(in thousands of dollars)		
2024	$	41,182
2025		38,327
2026		35,370
2027		35,433
2028		31,926
Thereafter		49,966
Total minimum lease payments		232,204
Less: Amount representing interest		(9,293)
Present value of net minimum lease payments	$	222,911

The lease cost and other required information for the year ended June 30, 2023, and 2022, are:

TABLE 17. QUANTITATIVE DISCLOSURES

(in thousands of dollars)	2023	2022
Accretion of the Lease Liability	$ 23,172	$ 35,957
Operating Cash Flows from Operating Leases*	$ 43,607	$ 39,192
Weighted Average Remaining Lease Term in Years	6.1	7.0
Weighted Average Discount Rate	1.2%	1.1%

** Supplemental cash flow information representing lease cost is reported in Utilities, rent, and repairs in the Consolidated Statement of Activities.*

Assets Pledged as Collateral

As of June 30, 2023, and 2022, $12.2 million and $13.4 million of assets, respectively, were pledged as collateral to various suppliers and government agencies. This is classified as Restricted cash on the Consolidated Statements of Cash Flows.

G. Commitments and Contingencies (continued)

Future Construction

As of June 30, 2023, MIT had contractual obligations of approximately $439.4 million in connection with educational plant construction projects. It is expected that the resources to satisfy these commitments will be provided from unexpended plant funds, anticipated gifts, bond proceeds, and funds without donor restrictions.

MIT has also made commitments related to the development of its commercial real estate holdings in Kendall Square and to the enhancement of its East Campus gateway. As of June 30, 2023, the outstanding commitments included approximately $57.0 million of contractual obligations related to the Kendall Square Initiative, and $40.7 million related to other commercial real estate projects. In addition, MIT and the federal government have entered into an agreement whereby MIT will construct a new transportation center on four of the fourteen acres of federally owned land located at the John A. Volpe National Transportation Systems Center site in Kendall Square in exchange for the fee interest to and the right to redevelop the adjacent ten acres of land. The exchange will be executed upon completion of the construction of the new facility. MIT is committed to investing $750.0 million in the exchange phase of the project. Costs incurred for construction of the new facility, which are included in investments, were $89.9 million and $173.5 million in fiscal 2023 and fiscal 2022, respectively.

General

MIT has entered into agreements, including collaborations with third-party not-for-profit and for-profit entities, for education, research, and technology transfers. Some of these agreements involve funding from foreign governments. These agreements subject MIT to greater financial risk than do its normal operations. In the opinion of management, the likelihood of realization of increased financial risks by MIT under these agreements is remote.

MIT is subject to certain other legal proceedings and claims that arise in the normal course of operations. In the opinion of management, the ultimate outcome of these actions will not have a material effect on MIT’s financial position.

H. Functional Expense Classification

MIT's expenditures on a functional basis for the years ended June 30, 2023, and 2022, are shown in Table 18 below.

TABLE 18. EXPENDITURES BY FUNCTIONAL CLASSIFICATION

(in thousands of dollars)	General and administrative	Instruction and unsponsored research	Sponsored research	Total
Fiscal Year 2023				
Compensation	$ 593,496	$ 669,520	$ 1,011,039	$ 2,274,055
Other operating	187,315	508,481	694,717	1,390,513
Space-related	213,671	238,846	221,189	673,706
2023 Total	**$ 994,482**	**$ 1,416,847**	**$ 1,926,945**	**$ 4,338,274**
Fiscal Year 2022				
Compensation	$ 527,319	$ 619,460	$ 965,145	$ 2,111,924
Other operating	187,646	441,216	657,726	1,286,588
Space-related	175,515	212,215	207,086	594,816
2022 Total	**$ 890,480**	**$ 1,272,891**	**$ 1,829,957**	**$ 3,993,328**

Expenses are presented by functional classification in alignment with the overall mission of the Institute. Each functional classification displays all expenses related to the underlying operation by natural classification. Natural expenses attributable to more than one functional expense category are allocated using reasonable cost allocation techniques. Depreciation and utilities, rent, and repair expenses are allocated directly and/or based on square footage. Interest expense on indebtedness is allocated to the functional categories that have benefited from the proceeds of the associated debt.

I. Retirement Benefits

MIT offers a defined benefit pension plan and a defined contribution plan to its employees. The plans cover substantially all MIT employees.

MIT also offers a retiree welfare benefit plan (certain healthcare and life insurance benefits) for retired employees. Substantially all MIT employees may become eligible for those benefits if they reach a qualifying retirement age while working for MIT. The healthcare component of the welfare plan is paid for in part by retirees, their covered dependents, and beneficiaries. Benefits are provided through various insurance companies whose charges are based either on the claims and administrative expenses paid during the year or annual insured premiums. The life insurance component of the welfare plan includes basic life insurance and supplemental life insurance. The basic life insurance plan is non-contributory and covers the retiree only. The supplemental life insurance plan is paid for by the retiree. MIT maintains a trust to pay for the retiree welfare benefit plan.

MIT contributes to the defined benefit pension plan amounts that are actuarially determined to provide the retirement plan with sufficient assets to meet future benefit requirements. There were no designated contributions to the defined benefit pension plan and the retiree welfare benefit plan for fiscal 2023 and fiscal 2022.

For the defined contribution plan, the amounts contributed and expenses recognized during fiscal 2023 and fiscal 2022 were $76.4 million and $71.5 million, respectively.

For purposes of calculating net periodic benefit cost, plan amendments for the defined benefit pension plan are amortized on a straight-line basis over the average future service of active participants at the date of the amendment. Plan amendments to the retiree welfare benefit plan are amortized on a straight-line basis over the average future service to full eligibility of active participants at the date of amendment.

Cumulative gains and losses (including changes in assumptions) more than 10.0 percent of the greater of the benefit obligation or the market-related value of assets for both the defined benefit pension plan and the retiree welfare benefit plan are amortized over the average future service of active participants. MIT accelerates recognition of cumulative gains or losses to the extent that the unrecognized balance partially or fully offsets the preliminary net periodic benefit cost or income calculated prior to this accelerated amount. In no event shall the annual amortization be less than the total amount of unrecognized gains and losses up to $1.0 million.

I. Retirement Benefits (continued)

Components of Net Periodic Benefit Cost

Table 19 below summarizes the components of net periodic benefit cost recognized in net results and other amounts recognized in other revenues, gains, and losses in net assets without donor restrictions for the years ended June 30, 2023, and 2022.

TABLE 19. COMPONENTS OF NET PERIODIC BENEFIT COST AND OTHER AMOUNTS RECOGNIZED IN OTHER REVENUES, GAINS, AND LOSSES

	Defined Benefit Pension Plan		Retiree Welfare Benefit Plan	
(in thousands of dollars)	2023	2022	2023	2022
Components of net periodic benefit cost recognized in net results:				
Service cost	$ 125,296	$ 152,837	$ 28,059	$ 33,299
Interest cost	247,139	178,186	32,352	23,700
Expected return on plan assets	(373,076)	(360,746)	(62,020)	(62,585)
Amortization of net actuarial loss (gain)	1,000	33,431	(20,212)	(10,269)
Amortization of prior service cost	347	347	1,646	-
Net periodic benefit cost (income) recognized in net results	706	4,055	(20,175)	(15,855)
Other amounts recognized in other revenues, gains, and losses:				
Current year prior service cost	-	-	-	14,308
Current year actuarial (gain) loss	(251,221)	597,273	60,453	118,062
Amortization of actuarial (loss) gain	(1,000)	(33,431)	20,212	10,269
Amortization of prior service (cost)	(347)	(347)	(1,646)	-
Total other amounts recognized in other revenues, gains and losses	(252,568)	563,495	79,019	142,639
Total recognized	**$ (251,862)**	**$ 567,550**	**$ 58,844**	**$ 126,784**

Cumulative amounts recognized in net assets without donor restrictions are summarized in Table 20 below for the years ended June 30, 2023, and 2022.

TABLE 20. CUMULATIVE AMOUNTS RECOGNIZED IN NET ASSETS WITHOUT DONOR RESTRICTION

	Defined Benefit Pension Plan		Retiree Welfare Benefit Plan	
(in thousands of dollars)	2023	2022	2023	2022
Amounts recognized in unrestricted net assets without donor restrictions consist of:				
Net actuarial (gain)	$ (417,382)	$ (165,162)	$ (229,753)	$ (310,417)
Prior service cost	2,249	2,597	12,663	14,308
Total cumulative amounts recognized in net assets without donor restrictions	**$ (415,133)**	**$ (162,565)**	**$ (217,090)**	**$ (296,109)**

I. Retirement Benefits (continued)

Benefit Obligations and Fair Value of Assets

Table 21 below summarizes the benefit obligations, plan assets, and amounts recognized in the Consolidated Statements of Financial Position for MIT's retirement benefit plans. MIT uses a June 30 measurement date for its defined benefit pension plan and retiree welfare benefit plan.

The projected benefit obligation for the defined benefit pension plan, as shown in Table 21, was $4,570.0 million and $5,074.7 million as of June 30, 2023, and 2022, respectively. Another measure of the plan's liabilities is the accumulated benefit obligation. While the projected benefit obligation factors in future salary increases, the accumulated benefit obligation does not. The accumulated benefit obligation of MIT's defined benefit pension plan was $4,430.6 million and $4,878.3 million as of June 30, 2023, and 2022, respectively.

MIT provides retiree drug coverage through an EGWP. Under an EGWP, the cost of drug coverage is offset through direct federal subsidies, brand-name drug discounts, and reinsurance reimbursements.

TABLE 21. BENEFIT OBLIGATIONS* AND FAIR VALUE OF ASSETS

	Defined Benefit Pension Plan		Retiree Welfare Benefit Plan	
(in thousands of dollars)	2023	2022	2023	2022
Change in benefit obligations*:				
Benefit obligations* at beginning of year	$ 5,074,737	$ 5,429,577	$ 640,049	$ 663,180
Service cost	125,296	152,837	28,059	33,299
Interest cost	247,139	178,186	32,352	23,700
Retiree contributions	-	-	11,065	9,966
Net benefit payments, transfers, and other expenses	(200,460)	(185,550)	(50,996)	(42,698)
Employer Group Waiver Plan (EGWP) reimbursement	-	-	12,221	10,197
Plan amendments	-	-	-	14,308
Assumption changes and actuarial net (gain)	(676,712)	(500,313)	(11,523)	(71,903)
Benefit obligations* at end of the year	4,570,000	5,074,737	661,227	640,049
Change in plan assets:				
Fair value of plan assets at beginning of the year	5,457,600	6,379,991	952,415	1,102,330
Actual return on plan assets	(52,415)	(736,841)	(9,956)	(127,380)
Employer contributions	-	-	-	-
Employer Group Waiver Plan (EGWP) reimbursement	-	-	12,221	10,197
Retiree contributions	-	-	11,065	9,966
Net benefit payments, transfers, and other expenses	(200,460)	(185,550)	(50,996)	(42,698)
Fair value of plan assets at end of the year	5,204,725	5,457,600	914,749	952,415
Funded status at end of the year	**634,725**	**382,863**	**253,522**	**312,366**
Amounts recognized in the Consolidated Statements of Financial Position consist of:				
Net asset position	**$ 634,725**	**$ 382,863**	**$ 253,522**	**$ 312,366**

**The benefit obligation for the Defined Benefit Pension Plan is the Projected Benefit Obligation (PBO); for the Retiree Welfare Benefit Plan it is the Accumulated Postretirement Benefit Obligation (APBO).*

I. Retirement Benefits (continued)

Assumptions for Financial Parameters and Healthcare Trend Rates

Table 22 below summarizes assumptions and healthcare trend rates. The expected long-term rate-of-return assumption represents the expected average rate of earnings on the funds invested, or to be invested, to provide for the benefits included in the benefit obligation. The long-term rate-of-return assumption is determined based on several factors, including historical market index returns, the anticipated long-term asset allocation of the plans, historical plan return data, plan expenses, and the potential to outperform market index returns.

TABLE 22. ASSUMPTIONS

	Defined Benefit Pension Plan		Retiree Welfare Benefit Plan	
(in thousands of dollars)	2023	2022	2023	2022
Assumptions used to determine benefit obligation as of June 30:				
Discount rate	5.56%	4.85%	5.73%	4.96%
Rate of compensation increase*	7.00%/5.50%	5.75%		
Pension increases for in-payment benefits**	3.75%/1.88%	5.25%/2.06%		
Cash balance interest crediting rate	6.00%	6.00%		
Assumptions used to determine net periodic benefit cost for the year ended June 30:				
Discount rate	4.85%	3.25%	4.96%	3.47%
Expected long-term return on plan assets	7.25%	7.75%	6.75%	7.50%
Rate of compensation increase	5.75%	5.50%		
Cash balance interest crediting rate	6.00%	4.20%		
Assumed health care cost trend rates:				
Healthcare cost trend rate assumed for next year (pre-65/post-65/EGWP)***			8.00%/7.50%/13.00%	7.00%/7.00%/7.00%
Ultimate health care cost trend rate (pre-65/post-65/EGWP)****			5.25%/5.25%/4.00%	5.25%/5.25%/5.25%
Year the rate reaches the ultimate trend rate			2030	2026

**As of June 30, 2023, salary increases are assumed to be 7.00% on average in fiscal 2024 and 5.50% thereafter.*

***As of June 30, 2023, the pension increase assumption for in-payment benefits is assumed to be 3.75% in 2023, grading down to 1.88% over 6 years, updated from June 30, 2022 assumption of 5.25% grading down to 2.06% over 8 years.*

****As of June 30, 2023, the health care cost trend for next year is assumed to be 8.00% for pre-65 costs, 7.50% for post-65 costs and 13.00% for EGWP reimbursements.*

*****As of June 30, 2023, the ultimate health care cost trend is assumed to be 5.25% for pre-and post-65 costs and 4.00% for EGWP reimbursements.*

Plan Investments

The investment objectives for the assets of the plans are to minimize expected funding contributions and to meet or exceed the rates of return assumed for plan funding purposes over the long term. The nature and duration of benefit obligations, along with assumptions concerning asset class returns and return correlations, are considered when determining an appropriate asset allocation to achieve the investment objectives.

Investment policies and strategies governing the assets of the plans are designed to achieve investment objectives within prudent risk parameters. Risk management practices include the use of external investment managers, the maintenance of a portfolio diversified by asset class, investment approach, security holdings, and the maintenance of sufficient liquidity to meet benefit obligations as they come due.

I. Retirement Benefits (continued)

Tables 23A and 23B present investments at fair value of MIT's defined benefit pension plan and retiree welfare benefit plan, which are included in Fair value of plan assets as of June 30, 2023, and 2022, grouped by the valuation hierarchy detailed in Note B. The investment values in these tables exclude certain items included in the assets and liabilities shown in Table 21.

TABLE 23A. DEFINED BENEFIT PENSION PLAN INVESTMENTS

(in thousands of dollars)	Level 1	Level 2	Level 3	NAV	Total Fair Value
Fiscal Year 2023					
Cash and short-term investments	$ 157,776	$ -	$ -	$ -	$ 157,776
US Treasury	537,480	-	-	-	537,480
US government agency	-	4,800	-	-	4,800
Domestic bonds	-	87	-	-	87
Common equity:					
Domestic	197,973	-	173	-	198,146
Foreign	373,994	10,600	2,943	-	387,537
Equity:*					
Absolute return	-	-	-	682,055	682,055
Domestic	-	-	-	428,764	428,764
Foreign	-	-	-	569,442	569,442
Private	-	-	-	1,943,173	1,943,173
Real estate*	799	-	-	315,555	316,354
Real assets*	-	-	-	65,228	65,228
Other	2,976	-	1,577	-	4,553
Derivatives	74	1,577	-	-	1,651
Total plan investments assets	**$ 1,271,072**	**$ 17,064**	**$ 4,693**	**$ 4,004,217**	**$ 5,297,046**
Liabilities associated with investments					
Investments sold, but not yet purchased	(97,424)	-	-	-	(97,424)
Other liabilities	(3,753)	(1,972)	-	-	(5,725)
Total plan investment liabilities	**(101,177)**	**(1,972)**	**-**	**-**	**(103,149)**
Total plan investments	**$ 1,169,895**	**$ 15,092**	**$ 4,693**	**$ 4,004,217**	**$ 5,193,897**
Fiscal Year 2022					
Cash and short-term investments	$ 169,238	$ -	$ -	$ -	$ 169,238
US Treasury	540,501	-	-	-	540,501
US government agency	-	8,329	-	-	8,329
Domestic bonds	-	9	-	-	9
Common equity:					
Domestic	113,234	-	346	-	113,580
Foreign	262,285	11,887	3,057	-	277,229
Equity:*					
Absolute return	-	-	-	772,179	772,179
Domestic	-	-	-	438,094	438,094
Foreign	-	-	-	672,825	672,825
Private	-	-	-	2,108,178	2,108,178
Real estate*	1,263	-	-	298,418	299,681
Real assets*	-	-	-	60,838	60,838
Other	-	-	3,154	-	3,154
Derivatives	47	1,084	-	-	1,131
Total plan investments assets	**$ 1,086,568**	**$ 21,309**	**$ 6,557**	**$ 4,350,532**	**$ 5,464,966**
Liabilities associated with investments					
Investments sold, but not yet purchased	(14,522)	-	-	-	(14,522)
Other liabilities	(1,476)	(1,546)	-	-	(3,022)
Total plan investment liabilities	**(15,998)**	**(1,546)**	**-**	**-**	**(17,544)**
Total plan investments	**$ 1,070,570**	**$ 19,763**	**$ 6,557**	**$ 4,350,532**	**$ 5,447,422**

** Equity, real estate, and real assets categories include commingled vehicles that invest in these types of investments.*

I. Retirement Benefits (continued)

TABLE 23B. RETIREE WELFARE BENEFIT PLAN INVESTMENTS

(in thousands of dollars)	Level 1	Level 2	Level 3	NAV	Total Fair Value
Fiscal Year 2023					
Cash and short-term investments	$ 29,984	$ -	$ -	$ -	$ 29,984
US Treasury	143,492	-	-	-	143,492
US government agency	-	1,587	-	-	1,587
Domestic bonds	-	15	-	-	15
Common equity:					
Domestic	35,006	-	-	-	35,006
Foreign	66,664	1,871	519	-	69,054
Equity:*					
Absolute return	-	-	-	117,866	117,866
Domestic	-	-	-	67,526	67,526
Foreign	-	-	-	105,107	105,107
Private	-	-	-	296,593	296,593
Real estate*	141	-	-	51,008	51,149
Real assets*	-	-	-	10,051	10,051
Other	523	-	278	-	801
Derivatives	13	278	-	-	291
Total plan investment assets	**$ 275,823**	**$ 3,751**	**$ 797**	**$ 648,151**	**$ 928,522**
Liabilities associated with investments					
Investments sold, but not yet purchased	(17,129)	-	-	-	(17,129)
Other liabilities	(661)	(347)	-	-	(1,008)
Total plan investment liabilities	**(17,790)**	**(347)**	**-**	**-**	**(18,137)**
Total plan investments	**$ 258,033**	**$ 3,404**	**$ 797**	**$ 648,151**	**$ 910,385**
Fiscal Year 2022					
Cash and short-term investments	$ 18,948	$ -	$ -	$ -	$ 18,948
US Treasury	159,334	-	-	-	159,334
US government agency	-	2,893	-	-	2,893
Domestic bonds	-	2	-	-	2
Common equity:					
Domestic	20,106	-	-	-	20,106
Foreign	46,562	2,098	539	-	49,199
Equity:*					
Absolute return	-	-	-	137,190	137,190
Domestic	-	-	-	71,213	71,213
Foreign	-	-	-	118,896	118,896
Private	-	-	-	315,005	315,005
Real estate*	223	-	-	47,109	47,332
Real assets*	-	-	-	8,316	8,316
Other	-	-	557	-	557
Derivatives	8	188	-	-	196
Total plan investment assets	**$ 245,181**	**$ 5,181**	**$ 1,096**	**$ 697,729**	**$ 949,187**
Liabilities associated with investments					
Investments sold, but not yet purchased	(2,563)	-	-	-	(2,563)
Other liabilities	(260)	(273)	-	-	(533)
Total plan investment liabilities	(2,823)	(273)	-	-	(3,096)
Total plan investments	**$ 242,358**	**$ 4,908**	**$ 1,096**	**$ 697,729**	**$ 946,091**

** Equity, real estate, and real assets categories include commingled vehicles that invest in these types of investments.*

I. Retirement Benefits (continued)

The plans have made commitments to make periodic contributions in future periods to investments managed by external managers, and in other cases have entered into contractual arrangements that may limit their ability to initiate redemptions due to notice periods, lock-ups, and gates. Details on the remaining unfunded commitments and current redemption terms and restrictions by asset class and type of investment for both the defined benefit pension plan and retiree welfare benefit plan are provided in Table 24 below as of June 30, 2023, and 2022.

TABLE 24. UNFUNDED COMMITMENTS AND REDEMPTON TERMS AND RESTRICTIONS

	2023		2022			
(in thousands of dollars)	Unfunded Commitments	Fair Value	Unfunded Commitments	Fair Value	Redemption Terms	Days Notice
Defined Benefit Pension Plan						
Equity:						
Absolute return[1]	$ 17,848	$ 682,055	$ 17,579	$ 772,179	Ranges from 2 months to 48 months[5]	30 to 365 days
Domestic[2]	387	428,764	387	438,094	Ranges from 4 months to 48 months[5]	1 to 120 days
Foreign[3]	-	569,442	-	672,825	Ranges from 4 months to 48 months[5]	40 to 91 days
Private	514,984	1,943,173	560,217	2,108,178	Close-ended funds not available for redemption	Not redeemable
Real estate	215,100	315,555	166,113	298,418	Close-ended funds not available for redemption	Not redeemable
Real Assets[4]	3,905	65,228	8,194	60,838	4 months[5]	90 days
Total	**$ 752,224**	**$ 4,004,217**	**$ 752,490**	**$ 4,350,532**		
Retiree Welfare Benefit Plan						
Equity:						
Absolute return[1]	$ 2,581	$ 117,866	$ 2,468	$ 137,190	Ranges from 2 months to 48 months[5]	30 to 365 days
Domestic[2]	43	67,526	43	71,213	Ranges from 4 months to 48 months[5]	1 to 120 days
Foreign[3]	-	105,107	-	118,896	Ranges from 4 months to 48 months[5]	40 to 91 days
Private	84,811	296,593	92,935	315,005	Close-ended funds not available for redemption	Not redeemable
Real estate	36,284	51,008	26,108	47,109	Close-ended funds not available for redemption	Not redeemable
Real Assets[4]	651	10,051	1,382	8,316	4 months[5]	90 days
Total	**$ 124,370**	**$ 648,151**	**$ 122,936**	**$ 697,729**		

[1]Absolute return funds include funds that have remaining lock-up provisions up to 55 months.

[2]Domestic funds include funds that have remaining lock-up provisions up to 24 months.

[3]Foreign funds include funds that have remaining lock-up provisions up to 25 months.

[4] Real asset funds include funds that have remaining lock-up provisions up to 8 months.

[5] Includes funds that are not available for redemption.

I. Retirement Benefits (continued)

Target allocations and weighted-average asset allocations of the investment portfolios for MIT's defined benefit pension plan and retiree welfare benefit plan as of June 30, 2023, and 2022, are shown in Table 25 below.

TABLE 25. PLAN INVESTMENT ALLOCATION

	Defined Benefit Pension Plan			Retiree Welfare Benefit Plan		
	2023 Target Allocation	2023	2022	2023 Target Allocation	2023	2022
Cash and short-term investments	0-10%	3%	3%	0-10%	3%	2%
Fixed income	3-13%	11%	10%	10-20%	16%	17%
Equities	41.5-88.5%	66%	66%	34-84%	61%	60%
Marketable alternatives	12-22%	13%	14%	12.5-22.5%	13%	15%
Real assets	0-6%	1%	1%	0-5.5%	1%	1%
Real estate	0.5-10.5%	6%	6%	0-8%	6%	5%
Total		**100%**	**100%**		**100%**	**100%**

Expected Future Benefit Payments

In fiscal 2024, MIT does not expect to contribute to its defined benefit pension plan or to the retiree welfare benefit plan. These valuations assume a 7.25 percent and 6.75 percent expected return on assets for the defined benefit pension plan and retiree welfare benefit plan, respectively. MIT elected to adopt Pri-2012 mortality tables for employees and retirees issued by the Society of Actuaries (SOA) in October 2019. Mortality rates are projected generationally from the base year of 2012 using Scale MP-2021. The base tables are unchanged from last year.

Table 26 below reflects the total expected benefit payments for the defined benefit pension plan and retiree welfare benefit plan over the next ten years. These payments have been estimated based on the same assumptions used to measure MIT's benefit obligations as of June 30, 2023.

TABLE 26. EXPECTED FUTURE BENEFIT PAYMENTS

(in thousands of dollars)	Pension Benefits	Retiree Welfare Benefits*
2024	$ 208,170	$ 31,011
2025	232,348	34,377
2026	245,943	37,042
2027	258,025	39,488
2028	269,129	41,785
2029 - 2033	1,482,216	240,234

**Retiree Welfare Benefits reflect the total net benefits expected to be paid from the plans (e.g., gross benefit reimbursement offset by retiree contributions).*

J. Components of Net Assets and Endowment

Tables 27A and 27B present the composition of net assets as of June 30, 2023, and June 30, 2022, respectively. The amounts listed in the without donor restrictions category under the endowment funds sections are those gifts and other funds received over the years that MIT designated as funds functioning as endowment and invested with the endowment funds. A large component of net assets with donor restrictions in other funds is pledges, the majority of which will be reclassified to Net assets without donor restrictions when cash is received.

TABLE 27A. 2023 TOTAL NET ASSET COMPOSITION

(in thousands of dollars)	Without Donor Restrictions	With Donor Restrictions	Total
Endowment funds			
General purpose	$ 2,028,800	$ 2,198,534	$ 4,227,334
Departments and research	1,192,747	3,345,304	4,538,051
Library	18,983	84,256	103,239
Salaries and wages	918,914	5,626,221	6,545,135
Graduate general	140,658	390,732	531,390
Graduate departments	406,456	1,366,189	1,772,645
Undergraduate	390,026	2,556,294	2,946,320
Prizes	15,166	87,927	103,093
Miscellaneous	1,700,812	985,427	2,686,239
Endowment funds before pledges	6,812,562	16,640,884	23,453,446
Pledges	-	161,960	161,960
Total endowment funds	6,812,562	16,802,844	23,615,406
Other Funds			
Student-related loan funds	17,134	23,716	40,850
Building funds	89,988	5,001	94,989
Designated purposes:			
Departments and research	557,304	-	557,304
Other purposes	280,532	16,859	297,391
Life income funds and donor-advised funds	94,731	242,814	337,545
Pledges	-	449,227	449,227
Other funds available for current expenses	4,174,940	642,805	4,817,745
Retirement benefits overfunded	888,247	-	888,247
Funds for educational plant	1,084,267	-	1,084,267
Total other funds	7,187,143	1,380,422	8,567,565
Total net assets	**$ 13,999,705**	**$ 18,183,266**	**$ 32,182,971**

J. Components of Net Assets and Endowment (continued)

TABLE 27B. 2022 TOTAL NET ASSET COMPOSITION

(in thousands of dollars)	Without Donor Restrictions	With Donor Restrictions	Total
Endowment Funds			
General purpose	$ 2,187,620	$ 2,367,431	$ 4,555,051
Departments and research	1,236,136	3,582,491	4,818,627
Library	20,493	90,855	111,348
Salaries and wages	984,539	6,040,369	7,024,908
Graduate general	151,845	421,161	573,006
Graduate departments	423,061	1,421,348	1,844,409
Undergraduate	420,235	2,739,370	3,159,605
Prizes	16,367	94,707	111,074
Miscellaneous	1,712,462	690,319	2,402,781
Endowment funds before pledges	7,152,758	17,448,051	24,600,809
Pledges	-	139,053	139,053
Total endowment funds	7,152,758	17,587,104	24,739,862
Other Funds			
Student-related loan funds	17,542	23,716	41,258
Building funds	67,987	11,093	79,080
Designated purposes:			
Departments and research	543,694	-	543,694
Other purposes	231,303	20,373	251,676
Life income funds and donor-advised funds	97,353	256,228	353,581
Pledges	-	445,950	445,950
Other funds available for current expenses	4,514,579	590,474	5,105,053
Retirement benefits overfunded	695,229	-	695,229
Funds for educational plant	975,148	-	975,148
Total other funds	7,142,835	1,347,834	8,490,669
Total net assets	**$ 14,295,593**	**$ 18,934,938**	**$ 33,230,531**

MIT's endowment consists of approximately 4,700 individual funds established for a variety of purposes and includes both donor-restricted endowment funds and funds that function as endowments. As required by GAAP, net assets associated with endowment funds, including funds designated to function as endowments, are classified and reported based on the existence or absence of donor-imposed restrictions.

The Executive Committee has interpreted the Massachusetts-enacted version of the Uniform Prudent Management of Institutional Funds Act (UPMIFA) as allowing MIT to appropriate for expenditure or accumulate so much of an endowment fund as MIT determines is prudent for the uses, benefits, purposes, and duration for which the endowment fund is established, subject to the intent of the donor as expressed in the gift instrument. Unless stated otherwise in the gift instrument, the assets in an endowment fund shall be donor-restricted assets until appropriated for expenditure by the Executive Committee. In accordance with UPMIFA, the Executive Committee considers the following factors in deciding to appropriate or accumulate endowment funds:

i. the duration and preservation of the fund
ii. the purposes of MIT and the endowment fund
iii. general economic conditions
iv. the possible effects of inflation and deflation
v. the expected total return from income and the appreciation of investments
vi. other resources of MIT
vii. the investment policies of MIT

J. Components of Net Assets and Endowment (continued)

Table 28 below reflects changes in endowment net assets without and with donor restrictions for fiscal 2023 and fiscal 2022, respectively.

TABLE 28. CHANGES IN ENDOWMENT NET ASSETS

(in thousands of dollars)	Without Donor Restriction	With Donor Restriction	Total
Fiscal Year 2023			
Endowment net assets, July 1, 2022	$ 7,152,758	$ 17,587,104	$ 24,739,862
Investment return:			
Net Investment income	(1,262)	4,531	3,269
Realized and unrealized gains/(losses)	(79,123)	(186,683)	(265,806)
Total investment return	(80,385)	(182,152)	(262,537)
Contributions	-	129,034	129,034
Appropriation of endowment assets for expenditure	(325,542)	(767,739)	(1,093,281)
Other changes:			
Net asset reclassifications and transfers	65,731	36,597	102,328
Endowment net assets, June 30, 2023	**$ 6,812,562**	**$ 16,802,844**	**$ 23,615,406**
Fiscal Year 2022			
Endowment net assets, July 1, 2021	$ 8,028,079	$ 19,499,125	$ 27,527,204
Investment return:			
Net Investment income	947	9,626	10,573
Realized and unrealized gains/(losses)	(675,631)	(1,558,081)	(2,233,712)
Total investment return	(674,684)	(1,548,455)	(2,223,139)
Contributions	-	217,216	217,216
Appropriation of endowment assets for expenditure	(248,978)	(585,567)	(834,545)
Other changes:			
Net asset reclassifications and transfers	48,341	4,785	53,126
Endowment net assets, June 30, 2022	**$ 7,152,758**	**$ 17,587,104**	**$ 24,739,862**

J. Components of Net Assets and Endowment (continued)

Endowment Investment and Spending Policies

MIT's investment policy is based on the primary goal of maximizing return relative to appropriate risk such that performance exceeds appropriate benchmark returns at the total pool, asset class, and individual manager levels. To achieve its long-term rate-of-return objectives, MIT relies on a total return strategy in which investment returns are realized through both capital appreciation (realized and unrealized gains) and current yield (interest and dividends). MIT targets a diversified asset allocation that places greater emphasis on equity-based investments to achieve its long-term objectives within prudent risk constraints.

The Institute's primary investment pool, Pool A, is principally for endowment and funds functioning as endowment. The effective spending rate on pooled endowed funds was 4.4 percent, or 4.9 percent on a three-year-average basis, and 3.1 percent, or 4.4 percent on a three-year-average basis, for fiscal 2023 and fiscal 2022, respectively.

Pool A operates as a mutual fund with units purchased and redeemed based on the previous month's unit market value. Certain endowed assets are also maintained in separately invested funds.

MIT has adopted spending policies designed to provide a predictable stream of funding to programs supported by its investments while maintaining the purchasing power of assets. For pooled investments, the Executive Committee of the Corporation votes to distribute funds for operational support from general investments. In accordance with MIT's spending policy, these distributions are funded from both investment income and market appreciation. The distribution rates were $117.97 and $90.52 per Pool A unit as of fiscal 2023 and fiscal 2022, respectively. For separately invested endowment funds, only the annual investment income generated is distributed for spending. For any underwater endowment funds, the distribution of funds for operational support is at the discretion of the Executive Committee.

K. Department of Education Fiscal Responsibility Standards

As disclosed in the accompanying supplemental schedule, the Department of Education finalized borrower defense rules on September 23, 2019 that require the inclusion of a supplemental schedule to the audited financial statements that contains all financial elements needed to calculate the composite score ratios with a cross-reference to the financial statement line, or notes disclosure, that contains the element. The required financial elements as of June 30, 2023 not already included in a previous footnotes are outlined in Table 29 below.

TABLE 29. FINANCIAL ELEMENTS IN THE SUPPLEMENTAL SCHEDULE NOT READILY AVAILABLE IN THE INSTITUTE'S CONSOLIDATED FINANCIAL STATEMENTS

(in thousands of dollars)

Financial Element		**2023**
Property, plant, and equipment- pre-implementation	$	3,095,167
Property, plant, and equipment- post-implementation with outstanding debt for original purchase		411,320
Property, plant, and equipment- post-implementation without outstanding debt for original purchase		776,418
Construction in Process		733,755
Long-term debt- for long term purposes pre-implementation		2,899,913
Long-term debt- for long term purposes post-implementation		1,584,549
Net assets with donor restrictions: restricted in perpetuity		4,355,728
Unsecured related party receivables		7,352

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Massachusetts Institute of Technology
Financial Responsibility Supplemental Schedule
June 30, 2023

(in thousands of dollars)

Reference	*Financial Element*		*Amount*
	Primary Reserve Ratio		
Expendable Net Assets:			
Consolidated Statement of Financial Position- Net assets without donor restrictions	Net assets without donor restrictions		$ 13,999,705
Consolidated Statement of Financial Position- Net Assets with donor restrictions	Net assets with donor restrictions		18,183,266
N/A	Secured and unsecured related party receivable		-
Footnote K - Unsecured related party receivables	Unsecured related party receivables		7,352
Consolidated Statement of Financial Position- Land, buildings and equipment, net of accumulated depreciation	Property, plant, and equipment, net (includes construction in progress and capital leases	$ 5,016,660	
Footnote K - Property, plant, and equipment- pre-implementation	Less: Property, plant, and equipment- pre-implementation		3,095,167
Footnote K - Property, plant, and equipment- post-implementation with outstanding debt for original purchase	Less: Property, plant, and equipment- post-implementation with outstanding debt for original purchase		411,320
Footnote K - Property, plant, and equipment- post-implementation without outstanding debt for original purchase	Less: Property, plant, and equipment- post-implementation without outstanding debt for original purchase		776,418
Footnote K - Construction in Process	Less: Construction in Process		733,755
Consolidated Statement of Financial Position- Operating leases - right of use assets	Lease right-of-use asset	212,615	
N/A	Less: Lease right-of-use asset, net		-
N/A	Less: Lease right-of-use asset, pre-implementation		-
Consolidated Statement of Financial Position- Operating leases - right of use assets	Less: Lease right-of-use asset, post-implementation		212,615
N/A	Less: Intangible assets		-
Footnote I, Table 21 - Net Asset for Defined Benefit Pension Plan plus Net asset for Retiree Welfare Benefit Plan	Post-employment and retirement assets		888,247
Footnote K - Long-term debt- for long term purposes pre-implementation and post-implementation	Long-term debt- for long term purposes	4,484,462	
Footnote K - Long-term debt- for long term purposes pre-	Long-term debt- for long term purposes pre-implementation		2,899,913
Footnote K - Long-term debt- for long term purposes post-	Long-term debt- for long term purposes post-implementation		1,584,549
N/A	Line of credit for construction in progress		-
Consolidated Statement of Financial Position- Operating lease	Lease liability	$ 222,911	
N/A	Lease liability, net		-
N/A	Pre-implementation lease liability		-
Consolidated Statement of Financial Position- Operating lease	Post-implementation lease liability		222,911
N/A	Less: Annuities with donor restrictions		-
N/A	Less: Term endowments with donor restrictions		-
Footnote J, Table 27a - Life income funds and donor advised funds with donor restrictions	Less: Life income funds and donor advised funds with donor restrictions		242,814
Footnote K - Net assets with donor restrictions: restricted in	Less: Net assets with donor restrictions: restricted in perpetuity:		4,355,728
	Total Expendable Net Assets:		**$ 26,166,928**
Total Expenses and Losses:			
Notes to the Consolidated Financial Statements- Footnote H, Table 18 - 2022 Total	Total expenses without donor restrictions		$ 4,511,098
Consolidated Statement of Activities- Postretirement plan changes other than net periodic benefit cost	Non-operating and net investment loss		-
Consolidated Statement of Activities- Net return on investments	Less: Net investment losses		-
Consolidated Statement of Activities- Postretirement plan changes other than net periodic benefit cost	Less: Pension- related changes other than net periodic costs		-
	Total Expenses and Losses:		**$ 4,511,098**
	Equity Ratio		
Modified Net Assets:			
Consolidated Statement of Financial Position- Net assets without donor restrictions	Net assets without donor restrictions		$ 13,999,705
Consolidated Statement of Financial Position- Net assets with donor restrictions	Net assets with donor restrictions		18,183,266
N/A	Less: Intangible assets		-
Footnote K - Unsecured related party receivables	Less: Unsecured related party receivables		7,352
	Total Modified Net Assets:		**$ 32,175,619**
Modified Assets:			
Consolidated Statement of Financial Position- Total assets	Total assets		$ 38,637,992
N/A	Lease right-of-use asset, pre-implementation		-
N/A	Lease right-of-use liability, pre-implementation		-
N/A	Less: Intangible assets		-
N/A	Secured and unsecured related party receivable		-
Footnote K - Unsecured related party receivables	Less: Unsecured related party receivables		7,352
	Total Modified Assets:		**$ 38,630,640**
	Net Income Ratio		
Change in Net Assets Without Donor Restrictions:			
Consolidated Statement of Activities- Increase in net assets without donor restriction	Change in net assets without donor restrictions:		$ (295,888)
	Total Change in Net Assets Without Donor Restrictions:		**$ (295,888)**
Total Revenues and Gains:			
Consolidated Statement of Activities- Total Revenues, Net return on investments, Distribution of accumulated investment gains, Other	Total operating revenue and other gains		$ 4,652,953
	Total Revenues and Gains:		**$ 4,652,953**

The accompanying note is an integral part of the financial responsibility supplemental schedule.

Massachusetts Institute of Technology
Note to Financial Responsibility Supplemental Schedule
June 30, 2023

1. Basis of Presentation

The accompanying Financial Responsibility Supplemental Schedule (the "Schedule") of Massachusetts Institute of Technology (the "Institute") provides financial information required by the Department of Education to calculate the primary reserve ratio, equity ratio, net income ratio and the composite score as defined in Subpart L of 34 CFR 668 for the fiscal year-ended June 30, 2023. The financial information in the Schedule has been prepared in accordance with accounting principles generally accepted in the United States of America consistent with the consolidated financial statements. The Schedule is presented for purposes of additional analysis as required by the Department of Education and is not a required part of the financial statements.

SECTION II

SCHEDULE OF EXPENDITURES OF FEDERAL AWARDS

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Massachusetts Institute of Technology
Schedule of Expenditures of Federal Awards
For the Year Ended June 30, 2023

Federal Grantor/ Pass Through Grantor/ Program Title	Assistance Listing Number	Total $ Amount Expended	$ Amount Passed to Subrecipients
Research and Development			
U.S. Department of Defense:	12		
Air Force		$ 350,857,191	$ 22,048,370
Army		96,066,154	4,270,337
Classified		304,315,588	20,042,121
Combatant Commands		33,150,472	1,850,748
Defense Advance Research Project Agency		17,197,124	8,925,480
Navy		94,105,853	9,175,661
Office of the Secretary of Defense		227,912,096	9,812,904
Other DOD		78,895,421	2,898,416
Passthrough		41,188,050	-
Total Department of Defense		$ 1,243,687,949	$ 79,024,037
U.S. Department of Commerce	11	$ 10,667,797	$ 942,809
U.S. Department of Commerce - Passthrough	11	2,260,902	-
U.S. Department of Energy	81	73,191,630	5,930,842
U.S. Department of Energy - Passthrough	81	25,619,450	316,589
U.S. Department of Health and Human Services	93	139,187,777	24,493,646
U.S. Department of Health and Human Services - Passthrough	93	27,453,671	-
U.S. Department of Homeland Security	97	16,698,572	376,275
U.S. Department of Homeland Security - Passthrough	97	406,950	-
U.S. Department of Transportation	20	26,408,689	171,135
U.S. Department of Transportation - Passthrough	20	258,989	-
Miscellaneous Federal Government	Various	4,797,308	70,566
Miscellaneous Federal Government - Passthrough	Various	3,231,963	1,832,612
National Aeronautics & Space Administration	43	38,826,197	4,220,779
National Aeronautics & Space Administration - Passthrough	43	15,227,480	495,285
U.S. Agency for International Development	98	9,441,181	1,799,349
U.S. Agency for International Development - Passthrough	98	151,827	-
National Science Foundation	47	98,930,552	9,869,042
National Science Foundation - Passthrough	47	20,169,985	1,695,027
Total Research and Development	Appendix A	$ 1,756,618,869	$ 131,237,993

The accompanying notes are an integral part of this schedule.

Massachusetts Institute of Technology
Schedule of Expenditures of Federal Awards
For the Year Ended June 30, 2023

Federal Grantor/ Pass Through Grantor/ Program Title	Assistance Listing Number	Total $ Amount Expended	$ Amount Passed to Subrecipients
Student Financial Assistance Cluster Expenditures			
U.S. Department of Education Cluster:			
Grants:			
Pell	84.063	$ 4,850,743	
Federal Supplemental Educational Opportunity	84.007	2,002,893	
Federal Work Study	84.033	2,037,605	
Federal Perkins Loan:	84.038		
New Loans		-	
Balance Outstanding at July 1, 2022		7,528,440	
Loan Administrative Cost Allowance		-	
William D. Ford Federal Direct Loan Program:	84.268		
Direct Subsidized and Unsubsidized Loans		6,902,061	
Direct Plus Loan for Parents and for Graduate or Professional Students		11,027,581	
Total Student Financial Assistance Cluster Expenditures		$ 34,349,323	
Economic Development Cluster			
U.S. Department of Commerce - Passthrough	11.307	$ 426,058	$ -
Total Economic Development Cluster		$ 426,058	$ -
TRIO Cluster			
Total TRIO Cluster	84.047	$ 155,268	$ -
Total TRIO Cluster		$ 155,268	$ -
Other Federal Expenditures:			
U.S. Department of Commerce	Appendix B	$ 164,824	$ -
U.S. Department of Commerce - Passthrough	Appendix C	83,681	-
U.S. Department of Defense	Appendix B	2,466,214	787,492
U.S. Department of Defense - Passthrough	Appendix C	5,333,631	-
U.S. Department of Energy	Appendix B	393,752	152,813
U.S. Department of Energy - Passthrough	Appendix C	193,225	-
U.S. Department of Health and Human Services	Appendix B	24,045	-
U.S. Department of Homeland Security - Passthrough	Appendix C	789,971	-
U.S. Department of Transportation	Appendix B	28,524	-
Miscellaneous Federal Government	Appendix B	6,814,947	-
Miscellaneous Federal Government - Passthrough	Appendix C	524,843	-
National Aeronautics & Space Administration	Appendix B	1,988,445	44,459
National Aeronautics & Space Administration - Passthrough	Appendix C	374,545	-
U.S. Agency for International Development - Passthrough	Appendix C	377,745	147,942
Total Other Federal Expenditures		$ 19,558,392	$ 1,132,706
Total Federal Expenditures		$ 1,811,107,910	$ 132,370,699

The accompanying notes are an integral part of this schedule.

Massachusetts Institute of Technology
Notes to Schedule of Expenditures of Federal Awards
For the Year Ended June 30, 2023

1. Basis of Presentation

The accompanying schedule of expenditures of federal awards including appendices A, B and C (the "Schedule") summarize the expenditures of the Massachusetts Institute of Technology (the "Institute") under programs of the federal government for the year ended June 30, 2023. Because the Schedule presents only a selected portion of the activities of the Institute, it is not intended to and does not present the financial position, changes in net assets and cash flows of the Institute. The accompanying appendices A, B, and C provide detail on the federal awards expended by the Institute.

For purposes of the Schedule, federal awards include all grants, contracts and similar agreements entered into directly between the Institute and agencies and departments of the federal government and all subawards to the Institute by nonfederal organizations pursuant to federal grants, contracts and similar agreements. The information in this Schedule is presented in accordance with the provisions of the Office of Management and Budget's *Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards* ("Uniform Guidance"). Therefore, certain amounts presented in the Schedule may differ from amounts presented in, or used in preparation of, the consolidated financial statements. Assistance Listing Numbers ("AL") and pass-through numbers are provided when available. Negative amounts represent adjustments to amounts reported in prior years in the normal course of business.

2. Summary of Significant Accounting Policies for Federal Expenditures

Expenditures for direct costs are recognized as incurred using the accrual method of accounting and the cost accounting principles in OMB's Uniform Guidance or Federal Acquisition Regulations. Moreover, expenditures include a portion of costs associated with general Institute activities (facilities and administrative costs) which are allocated to awards under negotiated formulas commonly referred to as facilities and administrative rates.

The Institute 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 Institute receives funding from federal government agencies for sponsored research under government grants and contracts. These grants and contracts provide for reimbursement of indirect costs based on rates negotiated with the Office of Naval Research ("ONR"), the Institute's cognizant federal agency. The Institute's indirect cost reimbursements are based on fixed rates with carryforward of under or over recoveries.

The Defense Contract Audit Agency ("DCAA") is responsible for auditing indirect charges to grants and contracts. The Institute has final audited rates through 2021 and negotiated fixed rates for indirect costs through the 2024 fiscal year.

Massachusetts Institute of Technology
Notes to Schedule of Expenditures of Federal Awards
For the Year Ended June 30, 2023

3. Federal Student Loan Programs

The Federal Perkins Loan Program (AL #84.038) is administered directly by the Institute and balances and transactions relating to this program are included in the Institute's consolidated financial statements. The balance of loans outstanding for this program at June 30, 2023 is $5,719,494.

The William D. Ford Federal Direct Loan Programs (AL #84.268) are not administered by the Institute and balances and transactions relating to these programs are not included in the Institute's consolidated financial statements.

4. Lincoln Laboratory

Lincoln Laboratory ("the Laboratory"), designated as a Federally Funded Research and Development Center ("FFRDC"), is a mission oriented, multidisciplinary laboratory. The Director of Lincoln Laboratory reports to MIT's Vice President of Research. The Laboratory is directly integrated into the Institute as part of its **r**esearch **l**aboratory system and the Laboratory's reporting relationship with the Institute is like that of any other MIT research laboratory. The Laboratory is charged with responsibility for producing contractual research products and services. MIT establishes policy for, and provides guidance to, the Laboratory and performs administrative and service functions in support of the operations of the Laboratory.

5. Northeast Radio Observatory Corporation

Northeast Radio Observatory Corporation ("NEROC") is a nonprofit consortium of educational and research institutions. NEROC's mission is to further research, education, and scientific collaboration in the field of radio science. By agreement, NEROC finances are directly integrated into the Institute to support the organization's sponsored **r**esearch; MIT establishes policy for and provides guidance to NEROC and performs administrative and service functions in support of the financial and grant-related operations of NEROC.

NEROC is consolidated within MIT's consolidated financial statements, and NEROC's federal expenditures are reported in MIT's Uniform Guidance report. NEROC's Employer Identification Number ("EIN") is 04-6156432, which is separate from MIT's EIN. Federal expenditures for both MIT's and NEROC's EINs are included in MIT's Uniform Guidance report.

6. Federal Emergency Management Agency ("FEMA")

The Institute applied for reimbursement of certain expenses related to the COVID-19 pandemic under AL 97.036, *Federal Emergency Management Agency (FEMA) Public Assistance* through the State of Massachusetts. Expenditures are reflected in the Schedules in the year in which a project application is obligated, and expenses associated with those funds have been incurred. The Schedules thus include $789,971 of expenditures incurred in fiscal years 2020, 2021, or 2022, for projects which were obligated in fiscal year 2023.

Appendix A
Massachusetts Institute of Technology
Schedule of Expenditures of Federal Awards - Worksheet
Federal Research Support
FY 23 Expenditures

Sponsor	Campus Direct (Appendix A-1)	Lincoln Direct (Appendix A-2)	Lincoln Passthrough (Appendix A-2)	Campus Passthrough (Appendix A-3)	Total
Department of Defense:					
Air Force	$ 33,118,620	$ 317,738,571	$ 2,901,938	$ 11,245,718	$ 365,004,847
Army	18,590,829	77,475,325	757,719	6,773,861	103,597,734
Classified	-	304,315,588	-	-	304,315,588
Combatant Commands	-	33,150,472	82,285	-	33,232,757
Defense Advanced Research Project Agency	17,197,124	-	-	8,614,645	25,811,769
Navy	20,462,054	73,643,799	493,979	6,225,307	100,825,139
Office of the Secretary of Defence	-	227,912,096	417,555	-	228,329,651
Other Department of Defense	2,079,792	76,815,629	86,535	3,588,508	82,570,464
Total Department of Defense	91,448,419	1,111,051,480	4,740,011	36,448,039	1,243,687,949
Department of Commerce	2,566,757	8,101,040	492,283	1,768,619	12,928,699
Department of Energy	65,385,464	7,806,166	1,715,852	23,903,598	98,811,080
Department of Health & Human Services	136,904,915	2,282,862	1,084,689	26,368,982	166,641,448
Department of Homeland Security	378,571	16,320,001	-	406,950	17,105,522
Department of Transportation	3,730,872	22,677,817	109,418	149,571	26,667,678
Miscellaneous Federal Government:					
Department of Agriculture	143,210	(199)	-	69,208	212,219
Department of Education	121	-	-	-	121
Department of Interior	906,067	-	-	351,437	1,257,504
Department of Justice	-	2,876,211	-	-	2,876,211
Department of State	-	133,259	-	-	133,259
Other	463,935	274,704	-	2,811,318	3,549,957
Total Miscellaneous Federal Government	1,513,333	3,283,975	-	3,231,963	8,029,271
Nat'l Aeronautics & Space Administration	23,848,801	14,977,396	3,377,354	11,850,126	54,053,677
U.S. Agency for International Development	3,724,071	5,717,110	-	151,827	9,593,008
National Science Foundation	98,930,552	-	644,264	19,525,721	119,100,537
Total Federal Sponsors	**$ 428,431,755**	**$ 1,192,217,847**	**$ 12,163,871**	**$ 123,805,396**	**$ 1,756,618,869**

Note for Appendices A-1, A-3, B and C details:
- Contracts without Assistance Listing numbers were shown as ".RD" in the Assistance Listing # column for Reseach & Development and ".U00" for Non-R&D.
- Amounts less than 50 cents appear as zero due to rounding.

Appendix A1
Massachusetts Institute of Technology
Federal Research Support - On Campus
FY 2023 Expenditures

Federal Agency	Government Contract Number	Master Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
DEPARTMENT OF DEFENSE					
Air Force					
Air Force	FA9453-18-2-0017	Remote-epitaxy of multijunction solar cells on graphene coated III-V substrates	12.114	3,300	-
Air Force	FA8750-19-2-1000	AI Accelerator	12.300	13,719,903	-
Air Force	FA8750-19-2-1000 _ RPP2022-14	AI Accelerator	12.300	770,327	-
Air Force	FA8750-20-2-1007	Integration of Strong Second-order Nonlinearities with Large-Scale Silicon Photonics	12.300	203,466	-
Air Force	FA2386-20-1-4070	Developing graphene Josephson microwave single-photon detector for quantum information science	12.800	86,773	-
Air Force	FA2386-21-1-4058	Novel Topological and Qubit Materials Platforms Created by Engineered hBN Substrates	12.800	136,272	-
Air Force	FA9550-17-1-0192	Spontaneous Computation in Chemical Systems	12.800	-109	-
Air Force	FA9550-18-1-0436	(MURI) Empty State Electronics	12.800	996,212	345,907
Air Force	FA9550-18-1-0436	COVID-19: (MURI) Empty State Electronics	12.800	455,896	133,346
Air Force	FA9550-19-1-0048	(YIP) Harnessing Magnons for Hybrid Quantum Information Systems	12.800	105,991	-
Air Force	FA9550-19-1-0063	(YIP) Competing Orders in Nanostructured High-Tc Superconductors	12.800	-25,068	-
Air Force	FA9550-19-1-0104	Electro-Active Polymers for Robust and Flexible Electrospray Propulsion	12.800	143,498	-
Air Force	FA9550-19-1-0240	Scalable accelerated algorithms for exascale simulation and optimization/deep learning	12.800	-720	-
Air Force	FA9550-19-1-0263	Building Attack Resilience into Complex Networks: Deterrence, Inspection, and Recovery	12.800	261,292	-
Air Force	FA9550-19-1-0269	Learning to Learn Concepts as Programs: Hierarchical Bayes and Amortised Inference	12.800	-4,351	-
Air Force	FA9550-19-1-0319	Structured Assignment: Geometric Optimization Algorithms for Large-Scale Matching	12.800	78,970	-
Air Force	FA9550-19-1-0381	Physics and Management of Aerothermal-Mechanical Interactions for Enabling Robust Operation of Thermal System	12.800	122,152	-
Air Force	FA9550-19-1-0392	High Performance Area-Enhanced Hierarchical Evaporator for Extreme Thermal Management	12.800	24,681	-
Air Force	FA9550-20-1-0044	Design of robust and accurate biosensing systems in living cells	12.800	99,003	-
Air Force	FA9550-20-1-0066	(PECASE) Unraveling phonons at the atomic scale: a new tool to explore the science of thermal transport	12.800	160,895	-

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Federal Agency	Government Contract Number	Master Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
Air Force	FA9550-20-1-0105	Multiplexed Quantum Repeaters for High-Speed Quantum Networks	12.800	362,434	206,744
Air Force	FA9550-20-1-0113	COVID-19: Development of a Photonic Field-Programmable Gate Array (pFPGA) for Software-Controlled Photonics	12.800	60,906	-
Air Force	FA9550-20-1-0113	Development of a Photonic Field-Programmable Gate Array (pFPGA) for Software-Controlled Photonics	12.800	73,202	-
Air Force	FA9550-20-1-0115	Topological photonics for enabling high-power lasers	12.800	66,252	-
Air Force	FA9550-20-1-0163	Short Range Order and Electronic Entropy: from Melts to Solids	12.800	169,648	-
Air Force	FA9550-20-1-0291	(PECASE) Guiding Thermal Catalytic Reactions with Interfacial Electric Fields	12.800	182,130	-
Air Force	FA9550-20-1-0402	Invisible Hardware Speculation: A Comprehensive and Efficient Defense Solution Against Speculative Side Channel Attacks	12.800	236,605	-
Air Force	FA9550-20-1-0429	Shock Propagation through Architectured PrintCast Composites	12.800	183,198	-
Air Force	FA9550-21-1-0003	End-User Programming for Human-Machine Teaming	12.800	318,872	-
Air Force	FA9550-21-1-0014	The Marvin Minsky Institute for Society of Mind Theory	12.800	294,257	-
Air Force	FA9550-21-1-0058	(MURI) Prediction, Statistical Quantification and Mitigation of Extreme Events Caused by Exogenous Causes or Intrinsic Instabilities	12.800	74,136	54,977
Air Force	FA9550-21-1-0194	Ionic liquids as safe, energy-dense electrochemical fuels	12.800	199,204	175,380
Air Force	FA9550-21-1-0296	Scanning Maxwell Stress Microscopy for UHV Applications	12.800	317,300	-
Air Force	FA9550-21-1-0319	Topological Quantum Electronics and Optoelectronics in Moiré Superlattices	12.800	216,451	95,609
Air Force	FA9550-21-1-0454	Small Ultra-high-speed Gas Turbine Engine System for Research on Physics and Management of its Aerothermal-Mechanical interactions for Performance Enhancement	12.800	393,806	-
Air Force	FA9550-22-1-0024	Atomically precise exfoliation of single-crystalline oxide thin-films and its pyroelectric properties	12.800	267,152	32,539
Air Force	FA9550-22-1-0032	Ultrahigh Energy Electrochemical Power Systems Based on Safe Fluorinated Reactants	12.800	173,077	-
Air Force	FA9550-22-1-0051	New Electronic Topologies in Organic Electronic Materials	12.800	236,391	-
Air Force	FA9550-22-1-0066	Thermal transport in ultracold topological quantum matter	12.800	209,668	-
Air Force	FA9550-22-1-0130	Multifunctional Surveyor for Quantum Materials and Devices	12.800	155,605	-
Air Force	FA9550-22-1-0166	Natural and Synthetic Non-Hermitian Quantum Materials	12.800	965,908	-
Air Force	FA9550-22-1-0207	Dissecting the physical principles that control the spatial organization of intracellular signaling	12.800	139,667	-
Air Force	FA9550-22-1-0249	Robust state estimation, information gathering, and behavior for autonomous systems in complex uncertain domains	12.800	193,605	-

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Federal Agency	Government Contract Number	Master Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
Air Force	FA9550-22-1-0316	Rules of Composition in Synthetic Biology Across Scales of Complexity: Theory and Tools	12.800	1,036,811	300,889
Air Force	FA9550-22-1-0356	New Theory and New Computational Methods for Improving the Effectiveness of First-Order Methods in Optimization	12.800	155,828	-
Air Force	FA9550-22-1-0367	High Temperature III-Nitride Technology for RF and Pressure Sensors	12.800	154,379	-
Air Force	FA9550-22-1-0387	Learning to Learn Concepts as Programs: Hierarchical Bayes and Amortised Inference	12.800	139,177	-
Air Force	FA9550-22-1-0432	High Temperature, Scalable Flat Bands	12.800	786,174	-
Air Force	FA9550-22-1-0511	Systematic Analysis and Evaluation of Memory Corruption Attacks in the Spectre Era	12.800	50,603	-
Air Force	FA9550-22-1-0516	Tunable Mid-IR Laser Apparatus for 2D-Material-Based Mid-IR Spectral Imager Research	12.800	88,266	-
Air Force	FA9550-23-1-0004	Exotic superconducting behavior in layer engineered BCS superconductor	12.800	100,445	-
Air Force	FA9550-23-1-0055	Extreme limits of diatom-enabled two-phase thermal management	12.800	42,686	-
Air Force	FA9550-23-1-0099	High Coverage and Low Cost Automatic Testing for Intelligent Autonomous Systems	12.800	10,617	-
Air Force	FA9550-23-1-0182	Dynamic Resource Allocations without Monetary Transfers	12.800	68,361	-
Air Force	FA9550-23-1-0190	Learning Algorithms for Autonomous Security in (Mixed-)Autonomous Networks	12.800	5,926	-
Air Force	FA9550-23-1-0194	Stability and optimal design of resilient ion electrospray thrusters	12.800	22,540	-
Air Force	FA9550-23-1-0225	High-Pressure Rig for Assessing Particle Impact Ignition in Extreme Environments	12.800	972	-
Air Force	FA8650-19-2-7921	Discrete Integrated Circuit Electronics	12.910	81,598	-
Air Force	FA8650-20-2-2002	Enhanced Computational Aircraft Prototype Syntheses (EnCAPS)	12.910	646,878	256,746
Air Force	FA8650-21-2-7120	Ingestible Transceiver-Actuatable Resident Gastrointestinal bioElectronic Therapeutic for Travelers Diarrhea (iTARGET-TD)	12.910	6,468,769	864,471
Air Force	FA8650-22-2-7220	Engineering Microorganisms to Incorporate Rare-Earth Elements into Optically Active Inorganic Nanoparticles	12.910	387,810	-
Air Force	FA8650-17-C-9113	Nanoscale X-ray Tomosynthesis for Rapid Assessment of IC Dice (NXT-RAID)	12.RD	37,842	-
Air Force	FA8750-17-C-0229	Genetic circuit design for extreme environments enabled by models extracted from petabyte-scale perturbation analyses	12.RD	5,081	5,769
		Total for Air Force		**33,118,620**	**2,472,377**
Army					
Army	W81XWH1810515	Investigating the Oligomerization of TorsinA as a Means to Develop DYT1 Dystonia Theraputics	12.420	-42,694	-

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Federal Agency	Government Contract Number	Master Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
Army	W81XWH-18-2-0010	Intravenous Hemostatic Nanoparticles to Stop Bleeding from Noncompressible and Unidentifiable Wounds	12.420	123,568	133,684
Army	W81XWH-19-1-0151	An Osseo-Neural Transtibial Prosthesis with Efferent-Afferent Neural Control	12.420	530,632	7,532
Army	W81XWH2010365	Do the changes of the mechanical environment in MS lesions affect myelin repair and responses of oligodendrocytes topro-myelinating drugs?	12.420	57,095	-
Army	W81XWH2010481	Cartilage Penetrating Nanocarrier-Drug Conjugate for Disease-Modifying Intervention in Post-Traumatic Osteoarthritis	12.420	319,796	-
Army	W81XWH2010661	Defining the Effects of the Liver Microenvironment on Metastatic Colon Cancer	12.420	32,358	-
Army	W81XWH2110235	Delivery of pro-angiogenesis anti-miRs from electrostatically-assembled bandages for diabetic ulcers	12.420	187,811	28,310
Army	W81XWH-21-1-0245	Metabolomics to Identify Targets in ALS	12.420	122,903	54,370
Army	W81XWH2110283	Interrogation of requisite niche factors for leukemia cell survival at single cell resolution	12.420	316,295	-
Army	W81XWH2110439	Strain-Programmable Bioadhesive Patch for Accelerated Healing of Diabetic Ulcer	12.420	213,842	-
Army	W81XWH2110626	Rewiring suppressive tumor microenvironment signals for immune activation using T cells engineered with synthetic promoters	12.420	215,401	-
Army	W81XWH2110699	Elucidating the Mechanisms of Spotted Fever Group Rickettsia Pathogenesis	12.420	286,349	-
Army	W81XWH2110934	Partnering with patients to create a rare soft tissue sarcoma functional genomics platform as a community resource	12.420	182,837	-
Army	W81XWH2210300	PR212255: Highly multiplexed detection of immune responses to emerging infectious diseases via lentiviral surface display	12.420	199,020	-
Army	W911NF-11-1-0400	Multi-Qubit Enhanced Sensing and Metrology	12.431	165,770	-
Army	W911NF-12-2-0039	Barrier□Immune□Organ: Microphysiology, Microenvironment Engineered Tissue Construct Systems (BIO□MIMETICS)	12.431	-348	-
Army	W911NF-13-D-0001, T.O. 8	ISN 3 FY'13 funding	12.431	234,874	-
Army	W911NF-13-D-0001, T.O. 9	ISN 3 FY'13 funding	12.431	116,566	-
Army	W911NF-16-1-0034	Coupled Synthesis, Transport, and Magnetization Studies to Detect New Topological Phases	12.431	128,342	-
Army	W911NF-18-1-0116	Improving Qubit Performance with Advanced, Novel, & Emerging Materials and Architectures	12.431	5,884	-
Army	W911NF-18-1-0118	Rheological Interaction Physics of Wheeled Locomotion in Soft Substrates for Improved Mobility: MIT Component	12.431	-1,513	-
Army	W911NF1810411	High Performance Superconducting Qubit Technology Engineering Research (HiPSTER)	12.431	217,653	122,125

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Federal Agency	Government Contract Number	Master Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
Army	W911NF1810432	Ab-Initio Solid-State Quantum Materials: Design, Production, and Characterization at the Atomic Scale	12.431	708,394	228,460
Army	W911NF-18-2-0048	ISN 4 Collaborative Agreement Core 6.1 Funding	12.431	4,304,898	-
Army	W911NF-19-1-0217	Foundations of Decision Making with Behavioral and Computational Constraints	12.431	931,651	440,491
Army	W911NF-19-1-0275	Theoretical Investigation of Mechanically Coupled Chemical Kinetics and Phase Transitions in Energetic Materials	12.431	46,685	-
Army	W911NF-19-1-0311	Research Area 7.2: Catalyzing High Potential Redox of Inert Molecules	12.431	-1,443	-
Army	W911NF1910517	Efficient light-matter interfaces for Rydberg arrays and entanglement in topological quantum networks	12.431	61,294	-
Army	W911NF1920098	Mechanics and Design of Triply Periodic Minimal Surfaces	12.431	112,681	-
Army	W911NF1920211	Expression of Recombinant Products with Butyrylcholinesterase (BChE) Activity in Pichia pastoris.	12.431	8,207	-
Army	W911NF-20-1-0037	Metastable Quibits in Multi-Ion Systems	12.431	479,597	123,804
Army	W911NF-20-1-0074	Investigation of Interface Exchange Coupling Between Two Quantum Systems: Research Instrumentation for Physical Property Characterizations	12.431	22,897	-
Army	W911NF2010084	Ultrafast Spatial Light Modulation by Optical Control	12.431	37,025	-
Army	W911NF2010100	Precursors for Partially Observed Systems and Applications to Unsteady Flow Separation Events	12.431	99,026	-
Army	W911NF-20-1-0168	Geometric Approaches to Near-Optimization	12.431	79,544	-
Army	W911NF2020061	Investigation of Interface Exchange Coupling Between Two Quantum Systems	12.431	245,152	-
Army	W911NF2110054	YIP: Elucidating the Role of Flash Heating in Ultrasonic Powder Compaction	12.431	118,461	-
Army	W911NF-21-1-0124	Highly-anisotropic 1D van der Waals lattices: A new paradigm towards functional materials and energy conversion in low-dimensions	12.431	127,497	-
Army	W911NF-21-1-0174	Ultrafast Ti:Sapphire amplifier for studying Floquet-Bloch states in novel quantum materials	12.431	52,532	-
Army	W911NF2110293	The Geometry of Single-and MultiObjective Near-Optimization	12.431	54,282	-
Army	W911NF2110328	Rethinking Reinforcement Learning with Astrocyte-Neuron Computations	12.431	1,452,434	420,953
Army	W911NF2110332	The dynamic evolution of helicity and twist, and their role in vortex instabilities	12.431	116,231	-
Army	W911NF2120099	Photonics Circuits for Compact Room-temperature Nodes for Quantum Networks	12.431	56,810	-

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Federal Agency	Government Contract Number	Master Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
Army	W911NF2120159	An integrated experimental, computational and statistical learning approach for highly reversible bulk polycrystalline shape memory ceramics	12.431	236,721	-
Army	W911NF2210023	Advanced vad der Waals Qubits and Control	12.431	837,354	-
Army	W911NF2210024	Laser systems for quantum simulations of many-body physics with ultracold atoms	12.431	13,778	-
Army	W911NF2210043	Cryogenics for a Quantum Network Testbed	12.431	104,248	-
Army	W911NF2210106	Characterizing Interspecies Interactions in Electron Transfer-Proficient Bacterial Consortia by Controlling Organization	12.431	709,722	-
Army	W911NF2210120	Molecular Triplet Qubits	12.431	178,421	-
Army	W911NF-22-1-0126	Biological Actuators: biologic sensing, processing, and control for soft robots	12.431	93,295	-
Army	W911NF2210185	Mucin-mimetic Interventions to Modulate the Gut-Brain Axis	12.431	597,470	213,354
Army	W911NF2210215	Brush Particle-Based Composites for Thermal Management Materials	12.431	10,054	-
Army	W911NF2220127	HIghly Nonlinear Optical Cavities for Quantum Networks	12.431	9,644	-
Army	W911NF-22-2-0210	CHARMME: Center for Harnessing Microbiota from Military Environments	12.431	423,612	82,532
Army	W911NF-23-1-0034	Dynamic Decision-Problem Decomposition for Autonomous Systems in Complex Domains	12.431	28,158	-
Army	W911NF2310045	Extensible and Modular Advanced Qubits (EMAQs)	12.431	130,282	-
Army	W911NF2310089	Phase Separation for Bioinspired Novel Composites	12.431	22,550	-
Army	W911NF2310229	Low-Dimensional Metal-Organic Chalcogenolate Semiconductors	12.431	5,843	-
Army	W911NF2320012	Bayesian Active Learning of Objects and Dynamics	12.431	61,330	-
Army	W911NF2320057	UWBG/Quantum Heterostructures	12.431	136,345	-
Army	W911QY2220003	Electrochemical biosensors to detect waterborne contaminants	12.431	19,469	-
Army	W911NF2120150	Semantic Scene Perception and Active Planning for Navigation through Complex Vegetation	12.630	158,093	-
Army	W911NF2120041	Super Headlights: Superconducting Nanowire Detectors for Passive Infrared Sensing	12.910	217,126	160,086
Army	W911NF-13-D-0001, T.O. 1	ISN 3 FY'13 funding	12.RD	494,216	-
Army	W911NF-13-D-0001, T.O. 2	ISN 3 FY'13 funding	12.RD	831,955	-
Army	W911QY23C0065	Individual Water Desalination and Purification project: Portable Ion Concentration Polarization (ICP) Desalination Devices (PID) for Personal Hydration:Phase II	12.RD	42,500	-
Army	W911SR20C0031	Biotemplated carbon nanofibers for the broad-spectrum removal of chemical threats	12.RD	491,089	-

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Federal Agency	Government Contract Number	Master Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
Army	W913E522C0005	Studies in support of phonon and plasmon mediated nuclear excitation transfer experiments	12.RD	11,258	-
		Total for Army		**18,590,829**	**2,015,701**
DARPA					
DARPA	HR00111920025	Rethinking molecular design: Deep integration of AI, physical chemistry, and HTE	12.910	1,160,364	-
DARPA	HR00112020013	Active Learning and Regeneration of Software Components for Cybersecurity	12.910	73,451	-
DARPA	HR0011-20-2-0049	Oxidation of mixed plastic to dicarboxylic acids and subsequent conversion to high-value products with engineered microbes	12.910	2,460,318	1,787,124
DARPA	HR0011-21-2-0001/HR0011048983	High-performance Portable Atmospheric Water Extractor for Extreme Climates	12.910	507	-
DARPA	HR00112120001/PO HR0011365855	High-performance Portable Atmospheric Water Extractor for Extreme Climates	12.910	1,007,918	348,874
DARPA	HR00112120008	GRAND: Guessing Random Additive Noise Decoding	12.910	1,258,053	514,918
DARPA	HR00112210002	Biohydrodynamic Metamaterials	12.910	464,991	46,402
DARPA	HR00112220042 / PO HR0011260378-1	Data-Driven Methods for Latent Model Recovery and Maintenance	12.910	604,988	-
DARPA	HR00112220044 / PO HR0011259346	The role of 3D integration and fluxonium for Quantum Benchmarking	12.910	179,202	-
DARPA	FA8750-20-C-0075	Performance-Driven Design Synthesis	12.RD	600,907	-
DARPA	HR0011-15-C-0084	The MIT-Broad Foundry: TA2	12.RD	82,914	82,902
DARPA	HR0011-18-3-0006	Revolutionizing Computing Systems through Dense and Fine-grained Monolithic 3D Integration	12.RD	5,058,878	4,608,399
DARPA	HR00112090081	Novel vacuum-fluctuation based light sources from visible to X-Ray frequencies	12.RD	22,719	-
DARPA	HR001120C0015	Guaranteed Robust Artificial InteLligence (GRAIL)	12.RD	1,644,672	188,183
DARPA	HR001120C0191	Cross-Scale Capability Runtime Monitoring and Reconfiguration	12.RD	1,087,533	858,929
DARPA	HR00112190069/HR0011152825	Quantum annealing for machine learning	12.RD	537,456	302,852
DARPA	HR00112290029 / PO# HR0011256532	Quantification of extreme weather events and their future changes using Physics-Informed DeepONet modeling and functional priors	12.RD	326,455	186,897
DARPA	HR00112290087	Novel Sulfidation, Separation and Recovery of Critical Metals	12.RD	574,311	-
DARPA	HR0112090066	DIM3: Discrete Inverse Methods for Multiphysics Modeling	12.RD	51,487	-
		Total for DARPA		**17,197,124**	**8,925,480**
Navy					
Navy	N00014-16-1-2141	Design and Operation of Efficient and Secure Navigation Networks	12.300	22,890	-

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Federal Agency	Government Contract Number	Master Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
Navy	N00014-16-1-2144	NEPTUNE Pilot Proposal	12.300	-22,905	-
Navy	N00014-16-1-2450	Long-term monitoring of deep-ocean Near Inertial Wave activity and surface sea-ice cover in the Arctic Ocean using PDS-CPIES	12.300	-14,000	-
Navy	N00014-16-1-2815	Quantum simulators with ultracold atoms - mapping out possibilities for new materials	12.300	-11,831	-
Navy	N00014-16-1-3116	Mapping the spatio-temporal dynamics of perception in the human brain	12.300	-7,597	-
Navy	N00014-16-1-3163	A New Paradigm for Analysis of Complex, Networked, Social and Engineering Systems	12.300	511,984	-
Navy	N00014-17-1-2072	Context and Task-aware Active Perception for Multiagent Systems	12.300	231,951	60,398
Navy	N00014-17-1-2186	Observational Benchmarks for BSION project	12.300	-14,214	-
Navy	N00014-17-1-2379	A System for Efficient and Accurate Network Navigation (DURIP)	12.300	6,243	-
Navy	N00014-18-1-2122	Online Optimization and Learning in a Complex Environment	12.300	79,604	-
Navy	N00014-18-1-2210	Mathematical Certification of Mission Success Robustness for Multi-Agent Dynamic Group Action Models with Imperfect Perception	12.300	5,500	-
Navy	N00014-18-1-2284	Tracking hydrogen: A multi-scale experimental-computational study of hydrogen influence on dislocations, plasticity, damage	12.300	-7,648	-
Navy	N00014-18-1-2434	Adaptive-resolution chemical discovery strategies for precise and fast computer-aided transition metal complex design	12.300	16,900	-
Navy	N00014-18-1-2496	VAMPIRE 3: A Decentralized Platform for Acoustic Diagnostics	12.300	133,556	-
Navy	N00014-18-1-2762	Uncovering Lagrangian transport structures associated with oceanic fronts, meanders, eddies and filaments	12.300	4,314	-
Navy	N00014-18-1-2781	Four-Dimensional Lagrangian Analysis, Numerics, and Estimation Systems (4D-LANES)	12.300	138,341	-
Navy	N00014-18-1-2815	Robot grasp and manipulation of deformable linear objects with applications for cable following: Manipulation Planning through Shared Autonomy	12.300	347,565	-
Navy	N00014-18-1-2832	Technical Proposal: Task-Aware Non-Gaussian Perception and Planning for Distributed Marine Autonomy	12.300	216,560	-
Navy	N00014-18-1-2847	Integration of Physical Domain Knowledge and Machine Learning	12.300	142,860	-
Navy	N00014-18-1-2878	Complex Smart Colloids	12.300	467,274	-
Navy	N00014-19-1-2036	Realistic models of cortical pyramidal neurons based on accurate whole-cell synaptic mapping: Implications for biologically-inspired AI models	12.300	225,881	56,953
Navy	N00014-19-1-2114	Synthesis Genome for Novel Oxides: Accelerating Realization of Advanced Materials	12.300	282,253	-
Navy	N00014-19-1-2180	Algorithms for Distributed and Asynchronous Load Balancing in Multi-Objective Optimization for Robot Autonomy	12.300	21,205	-

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Federal Agency	Government Contract Number	Master Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
Navy	N00014-19-1-2317	A de novo structural biopolymer library to predict, design and control the assembly of hierarchically mesostructured materials	12.300	255,552	-
Navy	N00014-19-1-2325	Wireless Communication through the Water-Air Interface	12.300	47,890	-
Navy	N00014-19-1-2362	Enabling Crowd-Scale Deliberation For Complex Problems	12.300	-75,665	-
Navy	N00014-19-1-2375	Materials By Design: Rational Modeling, Optimization and Synthesis of Heterogeneous Materials	12.300	164,868	-
Navy	N00014-19-1-2584	Towards more biologically plausible learning in neural networks	12.300	148,856	-
Navy	N00014-19-1-2605	The Integrated Sea Ice Dynamic Experiment (SIDEx)	12.300	34,058	-
Navy	N00014-19-1-2607	The Integrated Sea Ice Dynamics Experiment (SIDEx)	12.300	-4	-
Navy	N00014-19-1-2631	Analog Quantum Computing with a Molecular Quantum Gas Microscope	12.300	866,157	-
Navy	N00014-19-1-2664	Dynamic Environmental Estimation, Prediction, and Acoustic Inference (DEEP-AI)	12.300	152,459	-
Navy	N00014-19-1-2665	Data Driven Methods for Structure Learning in Underwater Acoustic Modeling	12.300	134,772	-
Navy	N00014-19-1-2693	Interdisciplinary Nonlinear Bayesian Data Assimilation	12.300	62,153	-
Navy	N00014-19-1-2716	Assessing Realism and Uncertainties in Navy Decision Aids	12.300	29,830	-
Navy	N00014-19-1-2724	Network Science for Time-Critical Missions: Inference, Control, Learning, and Decision Making	12.300	251,505	-
Navy	N00014-19-1-2741	Environmentally Adaptive Autonomy for Under-Ice Acoustic Navigation and Communication	12.300	27,704	-
Navy	N00014-20-1-2023	Machine Learning for Submesoscale Characterization, Ocean Prediction, and Exploration (ML-SCOPE)	12.300	728,856	196,629
Navy	N00014-20-1-2035	A Unified Approach to Passive and Active Ocean Acoustic Waveguide Remote Sensing	12.300	653,352	-
Navy	N00014-20-1-2059	Development of WakeLES: a two-phase large-eddy simulation capability for the turbulent free-surface air-entraining bubbly flow near wake of a surface ship	12.300	248,310	-
Navy	N00014-20-1-2084	Synthetic Nucleic Acid Nanoparticles for RNA Structural & Synthetic Biology	12.300	171,167	65,210
Navy	N00014-20-1-2119	Management and Control of Highly-Dynamic Tactical Networks in Disruptive Environments	12.300	159,310	-
Navy	N00014-20-1-2150	A database for functional transition metal complex discovery	12.300	194,122	-
Navy	N00014-20-1-2202	DURIP: Expansion of Combinatorial DNA Nanoparticle Libraries for Materials Research & Structural Biology	12.300	114,571	-
Navy	N00014-20-1-2221	Searching for new aluminum/gallium and electrolyte combinations for high-energy energy generation systems	12.300	104,571	-
Navy	N00014-20-1-2280	Synthesis Genome for Inorganic Materials: Case Oriented Proposal	12.300	6,054	-

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Navy	N00014-20-1-2300	Nano-Curing Embedded Heaters for Extreme Performance of Sea-based Airframe Structures	12.300	190,853	-
Navy	N00014-20-1-2306	Interface Exchange and Topology Driven Quantum Properties in 2D systems	12.300	52,469	-
Navy	N00014-20-1-2336	Mathematical Foundations of Modern Learning Problems	12.300	170,740	-
Navy	N00014-20-1-2353	Dashboard Maintenance and Tactical Decision Aid	12.300	-27	-
Navy	N00014-20-1-2366	Physics-informed, machine learning methods for the quantification of extreme ocean events for naval vessels	12.300	8,911	-
Navy	N00014-20-1-2394	Optimization, Federated learning, and high dimensional statistics for large-scale machine learning	12.300	590,181	-
Navy	N00014-20-1-2428	Optical-transition atomic clock beyond the standard quantum limit	12.300	152,732	-
Navy	N00014-20-1-2531	Underwater Backscatter Networking	12.300	489,350	-
Navy	N00014-20-1-2532	Lightweight representations for decentralized learning in data-rich environments	12.300	235,104	-
Navy	N00014-20-1-2533	Secure and Resilient Soft Real-Time Cyber-Physical Systems	12.300	-1,774	-
Navy	N00014-20-1-2561	Understanding Extreme Response and Damage of Biological Materials	12.300	103,086	-
Navy	N00014-20-1-2589	Developing next generation AI vision systems by characterizing and exploiting untapped primate visual processing circuit motifs	12.300	579,311	222,338
Navy	N00014-20-1-2826	Information Flow on Networks	12.300	414,437	-
Navy	N00014-20-1-4005	Hybrid Encoding for Singed Expressions (HESE) and Direct HESE Analog-to-Digital Converters	12.300	70,893	70,936
Navy	N00014-21-1-2170	Computational principles of belief system change	12.300	193,455	-
Navy	N00014-21-1-2192	Thermal Management Technologies for Low-Temperature Undersea Dive Persistence: a Novel Arctic Diving Suit	12.300	76,422	-
Navy	N00014-21-1-2195	Constrained Generative Modeling for Autonomous Molecular Discovery	12.300	27,019	-
Navy	N00014-21-1-2357	Bayesian Experimental Design with Active Learning Algorithms	12.300	156,612	-
Navy	N00014-21-1-2382	Integrated Modeling-Data-Simulation for Engineering Estimation: A Heat Transfer ParAnaLyst	12.300	193,512	-
Navy	N00014-21-1-2400	Self-damping structural materials	12.300	149,213	-
Navy	N00014-21-1-2402	Design of Environmentally Responsive Hierarchical Materials	12.300	142,932	-
Navy	N00014-21-1-2497	Furthering Technology for using Lithium Ion Batteries	12.300	319,473	-
Navy	N00014-21-1-2509	Integrated calorimetry-spectrometry analysis to unravel hydrogen effects on metastable alloys	12.300	248,379	-
Navy	N00014-21-1-2571	Transient Corona Discharges for Ignition and Flameholding in an Afterburner Environment	12.300	142,323	-
Navy	N00014-21-1-2573	Improving Group Decision-Making for Contentious Topics	12.300	150,901	-

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Federal Agency	Government Contract Number	Master Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
Navy	N00014-21-1-2591	Natural Superlattice 2D Materials	12.300	291,960	-
Navy	N00014-21-1-2666	Molecularly Precise Gas Separations Through Site-Specific Membrane Design	12.300	265,692	-
Navy	N00014-21-1-2776	Finding a Needle in a Haystack: Utilizing Structures and Predictive Information in Online Optimization	12.300	67,784	-
Navy	N00014-21-1-2807	Leveraging Causal Structure for Prediction Across Environments	12.300	126,786	-
Navy	N00014-21-1-2831	Compression and Assimilation for Resource-limited Operations	12.300	172,230	-
Navy	N00014-21-1-2841	Statistical Learning with large parameter spaces: Interpretable Nonparametrics, Conditional Computing and Beyond	12.300	145,069	-
Navy	N00014-21-1-2880	Laser system for quantum simulation and computation with array of collective Rydberg qubits	12.300	199,154	-
Navy	N00014-21-1-2960	A Scalable Architecture to Accelerate Event-Driven Simulation	12.300	537,641	-
Navy	N00014-21-1-4013	Hierarchical Nanoscale Materials Programmed using Structured DNA Nanoparticles	12.300	202,056	-
Navy	N00014-22-1-2036	Additive Manufacturing of Functionally Graded Oxide Dispersion-Strengthened Superalloys	12.300	171,082	-
Navy	N00014-22-1-2092	Dashboard MACE with Wireless Integration	12.300	117,823	-
Navy	N00014-22-1-2116	Representation Learning as a Tool for Causal Discovery	12.300	157,549	-
Navy	N00014-22-1-2148	Tailoring the Multiscale Organization of Self-Assembled Materials via a 'Systems-Level' Approach	12.300	218,950	-
Navy	N00014-22-1-2203	Long Nanofiber Reinforcement of Bulk Ceramics for Extreme Toughness, Strength, and Multifunctionality for Naval Aviation Applications	12.300	175,229	-
Navy	N00014-22-1-2284	Observational Benchmarks for BSION Project	12.300	114,484	-
Navy	N00014-22-1-2303	In-situ Monitored Molecular Beam Epitaxy of Encapsulated 2D Materials	12.300	324,501	-
Navy	N00014-22-1-2304	Laser system for a network of entangled atomic clocks	12.300	395,785	-
Navy	N00014-22-1-2326	Instrumentation for Battery Research	12.300	235,451	-
Navy	N00014-22-1-2339	Beyond Worst-Case Analysis in Reinforcement Learning	12.300	205,982	-
Navy	N00014-22-1-2419	Enabling Volumetric Ionospheric Imaging Using Vector Sensor Ionosondes	12.300	152,459	-
Navy	N00014-22-1-2453	Improving Target Tracking by Enhancing Neural Synchrony	12.300	317,483	128,607
Navy	N00014-22-1-2463	Software Integrated with Secure Hardware (SWISH)	12.300	562,053	466,514
Navy	N00014-22-1-2468	Optically-Controlled GaN Power Devices	12.300	262,045	-
Navy	N00014-22-1-2578	Interactive Large-scale Multi-agent Planning with Natural Language Inputs and Explainable AI	12.300	297,888	-
Navy	N00014-22-1-2630	Nanoengineered Multifunctional Structural Energy Storage	12.300	128,654	-

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Federal Agency	Government Contract Number	Master Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
Navy	N00014-22-1-2665	Collaborative Proposal: Scaling up MINLPs via Branch-and-Bound and First Order Methods with applications to Structured Statistical Learning	12.300	110,856	-
Navy	N00014-22-1-2709	Design Optimization of 10Ni Naval Steels	12.300	35,484	-
Navy	N00014-22-1-2740	Intentional multi-modal self-learning to perceive and understand the real world	12.300	847,570	125,369
Navy	N00014-22-1-2756	Non-parametric methods in reinforcement learning: Instance-optimality, adaptivity and data-dependent bounds	12.300	143,686	-
Navy	N00014-23-1-2004	CyberSteels: Accelerating Genomic Design	12.300	100,309	-
Navy	N00014-23-1-2160	SABINE Models and Measurements. (alaSka Arctic Bottomside IoNosphEre) SABINE	12.300	37,434	-
Navy	N00014-23-1-2164	Instrumentation to Support Diver-AUV Cooperative Autonomy	12.300	63,735	-
Navy	N00014-23-1-2299	Optimization-based Machine Learning for Dynamic Decision Problems	12.300	21,589	-
Navy	N00014-23-1-2530	The Role of Cavity and Interface Interactions in Damage and Injury of Biological Materials for Protective Measures	12.300	985	-
Navy	N00014-23-1-2584	Fairness on Online Platforms	12.300	32,395	-
Navy	N660012014028 / MIPR# HR0011047345	A Paradigm Shift in the Space Enterprise via Servicing for LEO Mega Constellations	12.910	123,714	-
Navy	N0018921PZ142	Engineering Support for the Interagency Very-Long Baseline Interferometry (VLBI) Correlator	12.RD	19,333	-
Navy	N0018922PZ243	Engineering Support for the Interagency Very-Long Baseline Interferometry (VLBI) Correlator	12.RD	193,408	-
Navy	N66001-13-C-4025	Integrated and Scalable Cyto-Technologies (INSCyT) for Flexible Microbial Manufacturing	12.RD	772,125	-
		Total for Navy		**20,462,054**	**1,392,954**
Other DOD					
Other DOD	HDTRA12110013	Robust AI-driven counter-measures: screening, guiding, combining	12.351	453,305	-
Other DOD	HDTRA12210010	Deep Learning-Guided Discovery and Structural Validation of Marine Toxin Inhibitors	12.351	487,901	-
Other DOD	HDTRA12210032	Unsupervised Machine Learning for Drug Repurposing and Medical Countermeasure (MCM) Identification	12.351	465,881	-
Other DOD	W911NF2120206	Development of AI Algorithms to Support Human-Robot Teams of Unmanned Marine Vehicles in Shallow Water Environments	12.431	60,629	-
Other DOD	HM0 4762310 001	Broadening broadband VLBI to also observe GNSS signals	12.630	8,921	-
NSA	H98230-19-C-0292	MIT Center for Quantum Engineering (MIT-CQE)	12.RD	234,299	-

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Federal Agency	Government Contract Number	Master Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
Other DOD	N6600123C4506	Analogue genetic circuits for long-term reliable reporting by living sensors	12.RD	6,479	-
Other DOD	W912HQ20C0015	Retrobiosynthetic design for renewable energetic materials	12.RD	362,377	-
		Total for Other DOD		**2,079,792**	**-**
		TOTAL for Department of Defense		**91,448,419**	**14,806,512**

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Federal Agency	Government Contract Number	Master Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
DEPARTMENT OF COMMERCE					
DOC	NA18OAR4170105	2018 Omnibus: Sea Grant College Program	11.417	749,350	288,527
DOC	NA21OAR4170339	Special Projects Competition Addressing COVID-19 Impacts to Seafood Resources SPECIAL PROJECTS E	11.417	27,461	-
DOC	NA21OAR4170389	Coordinated Ocean Energy Expertise to Northeast Coastal Stakeholders: MIT Sea Grant	11.417	13,516	-
DOC	NA22OAR4170126	2022-2023 Sea Grant OMNIBUS	11.417	1,309,740	42,677
DOC	NA22OAR4170144	Special Projects C: Disaster Preparedness for Coastal Communities	11.417	47,287	-
DOC	NA19OAR4310180	Exploring the trend in inorganic aerosol deposition	11.431	94,263	-
DOC	NA21OAR4590170	Advancing Ensemble Subseasonal Forecasting with Machine Learning	11.459	86,833	-
DOC	NA18NWS4680058	New Frameworks for Predicting Extreme Rapid Intensification	11.468	2,780	2,780
DOC	70NANB20H014	Open Materials Metrology and Modeling (OM3)	11.609	207,158	-
DOC	60NANB22D082	Open Metrology. MIT's Center for Bits and Atoms (CBA) meeting at MIT on August 19, 2022	11.620	28,369	-
		Total for Department of Commerce		**2,566,757**	**333,984**
		TOTAL for Department of Commerce		**2,566,757**	**333,984**

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Federal Agency	Government Contract Number	Master Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
DEPARTMENT OF ENERGY					
DOE	DE-FC02-93ER54186	Fusion Development and Technology - Parent	81.049	1,530,172	-
DOE	DE-FG02-02ER45977	Fundamental Studies on Heat Conduction in Polymers	81.049	184,931	-
DOE	DE-FG02-03ER46076	Strongly Correlated Electronic Systems: Local Moments and Conduction Electrons	81.049	199,508	-
DOE	DE-FG02-07ER46454	Probing Excitons in Confined Environments using Photon-Resolved Methods	81.049	-20	-
DOE	DE-FG02-07ER46474	Bimolecular Interactions in Organic Semiconductors	81.049	110,593	-
DOE	DE-FG02-07ER46474	Bimolecular Interactions in Organic Semiconductors: Hot charge, Hot excitons, Efficiency Droop, and Instability	81.049	-6,174	-
DOE	DE-FG02-08ER46488	Materials Exhibiting Biomimetic Carbon Fixation and Self Repair: Theory and Experiment (Renewal)	81.049	175,891	-
DOE	DE-FG02-08ER46514	Novel Temperature Limited Tunneling Spectroscopy of Quantum Hall Systems	81.049	46,250	-
DOE	DE-FG02-08ER46521	Ultrafast Electronic and Structural Dynamics in Quantum Materials	81.049	439,170	-
DOE	DE-FG02-91ER54109	Theoretical Research in Advanced Physics and Technology (Renewal of 6937946)	81.049	1,260,724	-
DOE	DE-FG02-94ER40818	Research in Nuclear Physics: Medium Energy Nuclear Physics	81.049	708,381	-
DOE	DE-FG02-94ER61937	Sectoral Interactions, Compounding Influences and Stressors, and Complex Systems: Understanding Tipping Points and Non-Linear Dynamics	81.049	794,492	-
DOE	DE-NA0004029	Development of New Advanced X-ray and γ-ray Diagnostics for Inertial-Confinement-Fusion and Discovery-Science Programs at OMEGA and the NIF	81.049	255,162	-
DOE	DE-NA0004129	Study of Magnetized, High-Energy-Density Hydrodynamics at OMEGA	81.049	108,258	-
DOE	DE-NE0009273	ATF Solutions to Light Water-Cooled SMRs	81.049	76,886	1,638
DOE	DE-SC0007106	Encoding Material Structure Into the Primary Sequence of Polymers	81.049	245,823	-
DOE	DE-SC0008739	Unconventional Metals in Strongly Correlated Systems	81.049	149,989	-
DOE	DE-SC0010492	Fusion Pilot Plant and ITER Scenarios and Control	81.049	103,211	-
DOE	DE-SC0010492	Long Pulse High Performance Scenarios and Control in EAST	81.049	240,028	-
DOE	DE-SC0011088	MIT RELATIVISTIC HEAVY ION GROUP	81.049	1,481,531	-
DOE	DE-SC0011090	FY2020 - 2022 Task R Theoretical Nuclear Physics	81.049	574,602	-
DOE	DE-SC0011090	TASK R - THEORETICAL NUCLEAR PHYSICS	81.049	645,401	-
DOE	DE-SC0011091	Task W - Neutrino Physics	81.049	692,171	-

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DOE	DE-SC0011755	AMS Operations	81.049	3,664,184	-
DOE	DE-SC0011848	AMS Research	81.049	1,817,592	-
DOE	DE-SC0011939	TASK A: PARTICLE PHYSICS COLLABORATION	81.049	939,437	-
DOE	DE-SC0011939	TASK A: PARTICLE PHYSICS COLLABORATION (PARENT)	81.049	258,809	-
DOE	DE-SC0012470	MDSPlus Development and Support	81.049	385,707	-
DOE	DE-SC0012567	Task C: Theoretical High Energy Physics	81.049	909,861	-
DOE	DE-SC0014229	Phase Contrast Imaging for Wendelstein 7-X	81.049	416,066	31,194
DOE	DE-SC0014251	Gas-Puff-Imaging for Diagnosis of Boundary and SOL Physics in W7-X	81.049	483,221	-
DOE	DE-SC0014264	MIT Plasma Science and Fusion Center Magnetic Confinement Fusion Experiment Research and Related Activities	81.049	6,781,791	-
DOE	DE-SC0014901	Computer-Aided Construction of Chemical Kinetic Models	81.049	127	-
DOE	DE-SC0015566	High Frequency High Gradient Accelerator Research	81.049	4	-
DOE	DE-SC0015566	Novel Concepts for High Gradient Acceleration	81.049	404,635	-
DOE	DE-SC0016154	Measurement of Helicons and Parametric Decay Waves in DIII-D with Phase Contrast Imaging	81.049	619,681	-
DOE	DE-SC0016214	Catalysis Beyond the Active Site: Pore Engineering in Lewis Acid Zeolites for Enhanced Cycloaddition Chemistry	81.049	3,621	-
DOE	DE-SC0016214	Tailored Lewis Acidiczeolite Environments for the Promotion Ofliquid- phase Transfer Hydrogenation Catalysis	81.049	16,595	-
DOE	DE-SC0018090	Center for Integrated Simulation of Fusion Relevant RF Actuators	81.049	505,764	120,649
DOE	DE-SC0018091	New Experimental Views on the Role of Temperature in Extreme Strain Rate Mechanics	81.049	475,981	-
DOE	DE-SC0018094	Nonequilibrium Properties of Driven Electrochemical Interfaces	81.049	213,797	-
DOE	DE-SC0018097	Spectroscopic studies of protein-protein association in model membranes	81.049	288,340	-
DOE	DE-SC0018121	Computing the Properties of Matter with Leadership Computing Resources	81.049	58,631	-
DOE	DE-SC0018229	MIT-Bates Research and Engineering Center	81.049	1,909,764	-
DOE	DE-SC0018934	Exploring Natural Aerosol Formation from DMS Oxidation and Implications for Aerosol Forcing	81.049	2,844	-
DOE	DE-SC0018935	Interplay of Magnetism and Superconductivity in van der Waals Heterostructures	81.049	-3,018	-
DOE	DE-SC0018947	Portable Parallel Algorithms and Frameworks for Exascale Graph Analytics	81.049	113,852	-
DOE	DE-SC0019087	Rational Sub-Nanometer Manipulation of Polymer Morphology for Efficient Chemical Separations	81.049	120,371	-

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DOE	DE-SC0019089	Feasibility Study: High-k Temperature (HiT) Fluctuation Diagnostic	81.049	31,247	-
DOE	DE-SC0019112	The Center for Enhanced Nanofluidic Transport – Phase 2 (CENT2)	81.049	1,281,318	889,020
DOE	DE-SC0019112	The Center for Enhanced Nanofluidic Transport (CENT)	81.049	783,490	425,837
DOE	DE-SC0019126	Novel Terahertz-Induced Quantum States Probed with Ultrafast Coherent X-Rays	81.049	912,101	179,283
DOE	DE-SC0019345	Excitons In Low-Dimensional Perovskites	81.049	374,701	-
DOE	DE-SC0019768	Search for a Non-Zero Value of the Electric Dipole Moment of the Neutron	81.049	176,846	-
DOE	DE-SC0019998	Controlling Exciton Dynamics with DNA Origami for Quantum Information Science	81.049	365,537	-
DOE	DE-SC0019999	Medium Energy Nuclear Physics: Exotic Physics & Advanced Tools at J.Lab and the EIC	81.049	34,355	-
DOE	DE-SC0020042	Janus 2D Material Platform Enabled by Atomic-Layer Substitution	81.049	105,109	-
DOE	DE-SC0020042	Novel 2D materials and Structures via Janus Manipulation	81.049	-20,305	-
DOE	DE-SC0020148	Tracing the Topological Fingerprint of Weyl Semimetals Using Neutron Probes	81.049	214,595	-
DOE	DE-SC0020149	Creating and Probing Large Gap 2D Topological Insulators for Quantum Computing	81.049	459,226	-
DOE	DE-SC0020180	Discovery and Design of Stable Nanocrystalline Alloys: The Grain Boundary Segregation Genome	81.049	69,091	-
DOE	DE-SC0020180	Towards High-Throughput Computation of Phase-and Defect Diagrams	81.049	111,490	-
DOE	DE-SC0020181	Quantum Devices for Neutrino and Rare Particle Detection	81.049	9,054	-
DOE	DE-SC0020240	Short-Range Correlations in Nuclei and the EMC Effect	81.049	704,059	-
DOE	DE-SC0020264	Quantum algorithms for fusion-plasma dynamics	81.049	524,478	163,237
DOE	DE-SC0020265	Study of Short-Range Correlations in Nuclei Using Electro-induced Nucleon-knockout Reactions at High Momentum-Transfer	81.049	178,467	-
DOE	DE-SC0020327	Boundrary, SOL, and Divertor Physics Studies on TCV	81.049	386,176	-
DOE	DE-SC0020973	Molecular Control of Heterogeneous Electrocatalysis	81.049	149,621	-
DOE	DE-SC0020974	Primary and Secondary Sphere Effects on the Valence Isomerism of Fe-S Clusters	81.049	162,009	-
DOE	DE-SC0020998	A multiresolution sharp-interface framework for tightly-coupled multiphysics simulations	81.049	166,678	-
DOE	DE-SC0021006	The QCD structure of nucleons and light nuclei	81.049	101,037	-
DOE	DE-SC0021025	Revealing the molecular origin of interactions between nanocrystals	81.049	377,648	-

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Federal Agency	Government Contract Number	Master Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
DOE	DE-SC0021120	Study of High Harmonic Fast Wave Interaction with the Scrape-Off-Layer Plasmas in NSTX-U	81.049	211,839	-
DOE	DE-SC0021176	Shedding Light on Nuclear Properties at the Limits of Existence	81.049	378,554	-
DOE	DE-SC0021178	Liquid Metal surface properties and plasma material interactions for plasma-facing component development in NSTX-U	81.049	132,077	-
DOE	DE-SC0021179	Laser Spectroscopy of Exotic Atoms and Molecules Containing Octupole-Deformed Nuclei	81.049	129,015	-
DOE	DE-SC0021180	Josephson Traveling Wave Parametric Amplifiers to Enable Future Neutrino Mass Measurements	81.049	102,221	-
DOE	DE-SC0021181	Exploring the Effects of Environmental Radiation on Superconducting Qubit Coherence	81.049	103,373	-
DOE	DE-SC0021202	Accelerating radio frequency modeling using machine learning	81.049	120,557	-
DOE	DE-SC0021225	FAIR Framework for Physics-Inspired Artificial Intelligence in High Energy Physics	81.049	111,042	-
DOE	DE-SC0021226	Frameworks, Algorithms and Scalable Technologies for Mathematics (FASTMath) SciDAC Institute	81.049	88,699	31,465
DOE	DE-SC0021580	Signatures of Reaction Mechanisms in the Vibrational Level Population Distribution of Reaction Products	81.049	33,046	-
DOE	DE-SC0021629	Role of neutrals versus transport in determining the pedestal density structure	81.049	107,758	-
DOE	DE-SC0021634	Carbonate Management to Enable Energy- and Carbon-Efficient CO2 Electrolysis	81.049	321,350	-
DOE	DE-SC0021637	Adapting transient grating spectroscopy for non-destructive in situ/operando, measurement of thermomechanical properties of fusion materials under plasma bombardment	81.049	185,071	-
DOE	DE-SC0021647	Unitary Qubit Lattice Algorithms for Plasma Physics	81.049	62,123	-
DOE	DE-SC0021650	Investigating Excitonic Properties through Photon Correlation in Quantum Optical Materials	81.049	525,167	-
DOE	DE-SC0021886	Spacetime Emergence from Quantum Gravity: Perturbative and Nonperturbative Aspects	81.049	133,522	-
DOE	DE-SC0021939	Resonant Coherent Diffractive Imaging of Quantum Solids	81.049	164,111	-
DOE	DE-SC0021940	Machine Learning Augmented Multimodal Neutron Scattering for Emergent Topological Materials	81.049	267,239	-
DOE	DE-SC0021943	Harnessing the Large Hadron Collider with New Insights in Real-Time Data Processing and Artificial Intelligence	81.049	133,867	-
DOE	DE-SC0022012	Collaborative Research: Enabling multi-scale studies of magnetic reconnection with interpretable data-driven models	81.049	62,958	-
DOE	DE-SC0022016	Improving bioprocess robustness by cellular noise engineering	81.049	518,258	32,284
DOE	DE-SC0022017	Exploring Past and Future Drivers of Biogenic SOA	81.049	194,421	-

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Federal Agency	Government Contract Number	Master Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
DOE	DE-SC0022028	Incommensurate Interfaces in Intercalated Quantum Materials	81.049	175,530	-
DOE	DE-SC0022033	A Streamlined Open Source Neutronics Toolkit for Fusion Reactor Design	81.049	273,585	-
DOE	DE-SC0022054	Nanoscale Free-Electron Lasing	81.049	215,580	13,537
DOE	DE-SC0022340	Intelligent experiments through real-time AI: Fast Data Processing and Autonomous Detector Control for sPHENIX and future EIC detectors	81.049	225,844	-
DOE	DE-SC0022997	CRCNS22 A combined computational and experimental investigation of the cellular and network basis of visual recognition memory	81.049	92,902	-
DOE	DE-SC0022999	Machine learning assisted prediction of tungsten heavy alloy plasma facing component performance for fusion energy applications	81.049	87,854	-
DOE	DE-SC0023116	Fundamental nuclear physics at the exascale and beyond	81.049	460,390	-
DOE	DE-SC0023187	M2dt: Multifaceted Mathematics for Predictive Digital Twins	81.049	59,249	-
DOE	DE-SC0023188	Randomized algorithms for optimal data acquisition in Bayesian inverse problems	81.049	66,436	-
DOE	DE-SC0023287	Inverse Design of Tungsten-based Low-Activation High Entropy Alloys for Plasma-Facing Materials via Machine-Learning Engineering of Vacancy Exchange Potentials	81.049	105,105	-
DOE	DE-SC0023288	Uncovering intrinsic transport and magnetic properties of two-dimensional electrically conducting metal-organic frameworks	81.049	65,667	-
DOE	DE-SC0023289	Opaqueness and aspect ratio impact on fueling and core-edge performance	81.049	84,114	-
DOE	DE-SC0023292	Permanent Magnets Featuring Heavy Main Group Elements for Magnetic Anisotropy	81.049	125,100	-
DOE	DE-SC0023684	Integrated Plasma-material Interaction Analysis Toward Long-Pulse Operation in a Fully-Tungsten Tokamak	81.049	15,337	-
DOE	DE-SC0024307	Rapid development of radiation-resistant advanced alloys for radio frequency actuators	81.049	12,185	-
DOE	DE-EE0008316	A direct process for wire production from sulfide concentrates	81.086	-1,954	-
DOE	DE-EE0009096 09/01	Machine-learned processing pathways for solid state electrolytes	81.086	607,695	-
DOE	DE-EE0009165	Multifunctional Optical Outcouplers for Efficient and Stable White OLEDs	81.086	489,642	-
DOE	DE-EE0009211	Transit-Centric Smart Mobility for High-Growth Urban Activity Centers: Improving Energy Efficiency through Machine Learning	81.086	348,616	105,978
DOE	DE-EE0009679	High Energy Density Hydrogel Thermo-Adsorptive Storage	81.086	995,123	99,139
DOE	DE-EE0008558	Low-cost, high-efficiency III-V photovoltaics enabled by remote epitaxy through graphene	81.087	131,577	51,860

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Federal Agency	Government Contract Number	Master Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
DOE	DE-EE0008830	Micro-mechanically guided high-throughput alloy design exploration towards metastability-induced hydrogen embrittlement resistance	81.087	136,325	-
DOE	DE-EE0009366	Machine Learning Accelerates Innovation in Perovskite Manufacturing Scale-up	81.087	96,482	75,023
DOE	DE-EE0009512	Next-generation perovskite photovoltaics: improving, stabilizing, and lead-sealing of record-setting laboratory solar cells toward commercialization	81.087	329,230	-
DOE	DE-FE0031668	Robust highly durable solid oxide fuel cell cathodes - Improved materials compatibility & self-regulating surface chemistry	81.089	24,035	-
DOE	DE-FE0032082	CFoam House	81.089	201,822	95,759
DOE	DE-FE0032102	Improving Durability and Performance of Solid Oxide Electrolyzers by Controlling Surface Composition on Oxygen Electrodes	81.089	515,025	131,041
DOE	DE-NA0003868	Center for Advanced Nuclear Diagnostics and Platforms for ICF and HED Physics at Omega, NIF, and Z	81.113	1,943,101	206,775
DOE	DE-NE0008728	University Reactor Upgrades Infrastructure Support for: Modular Hot Cells for Post-Irradiation Examination	81.121	188,148	-
DOE	DE-NE0008751	Determination of Molecular Structure and Dynamics of Molten Salts by Advanced Neutron and X-ray Scattering Measurements and Computer Modeling	81.121	19,580	-
DOE	DE-NE0008871	Simultaneous Corrosion/Irradiation Testing in Lead and Lead-Bismuth Eutectic: The Radiation Decelerated Corrosion Hypothesis	81.121	40,947	40,436
DOE	DE-NE0008872	Demonstrating Reactor Autonomous Control Framework using Graphite Exponential Pile	81.121	57,455	-
DOE	DE-NE0008873	Design of risk informed autonomous operation for advanced reactor	81.121	112,777	82,455
DOE	DE-NE0008966	Flexible Siting Criteria and Staff Minimization for Micro-Reactors	81.121	111,975	-
DOE	DE-NE0008967	Highly Compact Steam Generators for Improved Economics of Small Modular Reactors	81.121	149,066	-
DOE	DE-NE0008989	Validation of Robustness in TCR Design Strategies	81.121	306,826	-
DOE	DE-NE0008999	Molten Salt Reactor Test Bed with Neutron Irradiation	81.121	1,000,333	455,722
DOE	DE-NE0009014	(20-20186) University Research Reactor Upgrades Infrastructure Support for MIT Research Reactor's Normal & Emergency Electrical Power Supply Systems	81.121	90,531	-
DOE	DE-NE0009049	Horizontal Compact High Temperature Gas Reactor	81.121	1,076,225	482,640
DOE	DE-NE0009155	Experimental investigation and development of models and correlations for cladding-to-coolant heat transfer phenomena in transient conditions in support of TREAT and the LWR fleet	81.121	225,758	38,824
DOE	DE-NE0009267	Integrated Marine Platform for Hydrogen and Ammonia Production	81.121	123,038	-

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Federal Agency	Government Contract Number	Master Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
DOE	DE-NE0009312	Microscale PIE Tools for Expanding the Scientific Impact of the MIT Reactor.	81.121	86	-
DOE	DE-NE0009321	The application of advanced high resolution optical diagnostics to answer long standing questions and make new discoveries in boiling heat transfer in LWR conditions	81.121	44,158	-
DOE	DE-NE0009324	Understanding of ATF Cladding Performance under Radiation using MITR	81.121	317,148	107,236
DOE	DE-OE0000920	Effcient UltRa Endpoint IoT-enabled Coordinated Architecture (EUREICA)	81.122	546,532	344,735
DOE	DE-NA0003965	CESMIX: Center for the Exascale Simulation of Material Interfaces in Extreme Environments	81.124	2,037,347	-
DOE	DE-AR0001066	Multimetallic Layered Composites (MMLCs) for Rapid, Economical Advanced Reactor Deployment	81.135	181,441	83,848
DOE	DE-AR0001130	MULTISCALE POROUS HIGH-TEMPERATURE HEAT EXCHANGER USING CERAMIC COEXTRUSION	81.135	365,127	291,958
DOE	DE-AR0001133	CARBONHOUSE: A SCALABLE ALL-CARBON BUILDING LOGIC DERIVED FROM HYDROCARBON RESOURCES	81.135	510,141	95,110
DOE	DE-AR0001154	Distributed nuclear reactor core monitoring with single-crystal harsh-environment optical fibers	81.135	51,957	-
DOE	DE-AR0001218	Machine learning assisted models for understanding and optimizing boiling heat transfer on scalable random surfaces	81.135	186,439	-
DOE	DE-AR0001220	GLOBAL OPTIMIZATION OF MULTICOMPONENT OXIDE CATALYSTS FOR OER/ORR	81.135	712,930	42,314
DOE	DE-AR0001261	Radio Frequency tools for Breakthrough Fusion Concepts	81.135	233,266	77,896
DOE	DE-AR0001295	High Fidelity Digital Twins for BWRX-300 Critical	81.135	351,257	205,040
DOE	DE-AR0001298	Generation of Critical Irradiation Data to Enable Digital Twinning of Molten-Salt Reactors	81.135	296,313	-
DOE	DE-AR0001311	Power plant CO2 capture integrated with lime-based direct air capture	81.135	60,272	55,615
DOE	DE-AR0001395	ELECTROCHEMICAL MINING OF MSWI ASH	81.135	444,955	167,455
DOE	DE-AR0001409	ELECTROCHEMICALLY MODULATED CO2 REMOVAL FROM OCEAN WATERS	81.135	257,259	-
DOE	DE-AR0001434	Additive Manufacuring of Oxygen-Resistant Gradient Refractory Composites	81.135	404,975	-
DOE	DE-AR0001511	ZERO-CARON BIOFUELS: AN OPTIMIZED TWO-STAGE SYSTEM FOR HIGH PRODUCTIVITY CONVERSION OF CO2 TO LIQUID FUELS	81.135	951,368	386,750
DOE	DE-AR0001527	Ventilation Air Methane Abatement via Catalytic Oxidation (VAMCO) with Machine-Learning Enhanced Sensing and Feedback Controls	81.135	967,012	3,483

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Federal Agency	Government Contract Number	Master Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
DOE	DE-AR0001542	Liquid Immersion Blanket Rapid Assessment (LIBRA)	81.135	857,018	-
DOE	DE-AR0001569	Nitrogen Fertilizer: New Strategies for Low-energy, Low-emission Production and Use	81.135	395,597	-
DOE	DE-AR0001591	8 GaN-on-Si Super Junction Devices for Next Generation Power Electronics	81.135	1,244,192	315,606
DOE	DE-AR0001649	Alternating Direction Decomposition with Strong Bounding and Convexification (ADD-SBC) for Solving Security Constrained AC Unit Commitment Problems	81.135	229,045	-
DOE	684843	Real-Time Data Reduction Codesign at the Extreme Edge for Science	81.RD	97,432	-
DOE	N000428947	Metal Microplasma Printing for Agile Electronics	81.RD	2,764	-
DOE	PO N000428947	Metal Microplasma Printing for Agile Electronics	81.RD	55,645	-
DOE	PO N000461457	Third Phase Development of Atmospheric Microplasma Sputtering Capability for Additive Manufacturing	81.RD	38,422	-
DOE	SC-19-487	Center for the Advancement of Topological Semimetals (CATS)	81.RD	12,177	-
		Total for Department of Energy		**65,385,464**	**5,930,842**
		TOTAL for Department of Energy		**65,385,464**	**5,930,842**

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Federal Agency	Government Contract Number	Master Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
DEPARTMENT OF HEALTH & HUMAN SERVICES					
CDC					
CDC	75D30120C09254	Development of a cough/sneeze simulator to measure performance of PPE	93.RD	43,179	-
		Total for CDC		**43,179**	**-**
Other HHS					
HHS	1-R01-FD007458-01	COVID-19: A modular platform for rapid VLP vaccine development and manufacturing for SARS-CoV-2 pandemic response	93.103	179,273	-
HHS	1-R01-FD007480-01	Continuous Production of Viral -Vectors using membraneless Perfusion Culture of Host Cells	93.103	493,200	42,763
HHS	5 U01 FD006755-03	Integrated Continuous Processing Facility for Small Molecule and Biologic Lyophilized Final Dosage Forms	93.103	239,927	-
HHS	5-R01-FD006584-03	Continuous Viral Vector Manufacturing based on Mechanistic Modeling and Novel Process Analytics	93.103	19,486	-
HHS	5-R01-FD007226-02	Flexible Platform for End-to-end Manufacturing of Gene Therapies to Advance Development of Treatments for Ultrarare Diseases	93.103	88,578	-
HHS	5-R01-FD007226-03	Flexible Platform for End-to-end Manufacturing of Gene Therapies to Advance Development of Treatments for Ultrarare Diseases	93.103	295,816	-
HHS	5-R01-FD007458-02	COVID-19: A modular platform for rapid VLP vaccine development and manufacturing for SARS-CoV-2 pandemic response	93.103	382,918	-
HHS	5-U01FD006483-02	Smart Data Analytics for Risk Based Regulatory Science and Bioprocessing Decisions	93.103	-9,060	-
HHS	5-U01FD006483-03	Smart Data Analytics for Risk Based Regulatory Science and Bioprocessing Decisions	93.103	27,380	-
HHS	5-U01-FD006751-03	Novel Process Analytic Technology for Continuous Bioprocessses	93.103	418,208	-
HHS	75F40121C00090	COVID-19: Application of Smart Data Analytics to Biomanufacturing	93.RD	1,525,710	-
HHS	75F40121C00111	Controlled Protein Capture via Continuous Crystallization and Precipitation for Monoclonal Antibody Manufacturing	93.RD	1,321,408	756,031
HHS	75F40121C00131	Technologies to Enable Continuous Production of rAAV from Sf9/baculovirus Culture	93.RD	957,504	140,381
HHS	75F40122C00200	COVID-19: Development of an Integrated Continuous cGMP Facility for mRNA Manufacturing	93.RD	5,084,820	3,923,955
HHS	75P00120P00168	Web-Based Accessibility Initiative	93.RD	509,828	-
		Total for Other HHS		**11,534,996**	**4,863,130**
NIH					

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Federal Agency	Government Contract Number	Master Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NIH	1-R25-ES034600-01	Short Courses for Teaching Gene-Environment Interactions with a focus on Environmental Justice Communities	93.113	33,968	31,452
NIH	5P30ES002109-39	MIT Center for Environmental Health Sciences (YR 36-40)	93.113	31,127	-
NIH	5P30ES002109-40	MIT Center for Environmental Health Sciences (YR 36-40)	93.113	130,016	-
NIH	5R25ES034600-02	Short Courses for Teaching Gene-Environment Interactions with a focus on Environmental Justice Communities	93.113	88,590	-
NIH	5-R35-ES028303-06	Mechanism of Eukaryotic Environmental Mutagenesis	93.113	436,605	-
NIH	5-R35-ES028303-06 REVISED	Mechanism of Eukaryotic Environmental Mutagenesis	93.113	220,784	-
NIH	5-R35-ES028303-07	Mechanism of Eukaryotic Environmental Mutagenesis	93.113	64,654	-
NIH	5-R35-ES028374-05	Protein Kinase Signaling in the Genotoxic Stress Response	93.113	264,120	-
NIH	5-R35-ES028374-06	Protein Kinase Signaling in the Genotoxic Stress Response	93.113	427,287	-
NIH	5-T32-ES007020-47	Training Grant in Environmental Toxicology	93.113	1,057	-
NIH	5-T32-ES007020-48	Training Grant in Environmental Toxicology	93.113	756,288	-
NIH	5-F32-DE032551-02	Elucidating the regulation and spread of an integrative and conjugative element from Streptococcus mutans in the oral microbiome	93.121	59,110	-
NIH	5-R01-DE024747-05	Tunable Nanolayer-Polymer Composite Patches for Cell-Free CMF Repair	93.121	-746	-
NIH	7-R01-DE029342-02 REVISED	Identification and Validation of a Novel Central Analgesia Circuit	93.121	543,677	197,641
NIH	2-P42-ES027707-06	The MIT Superfund Research Program: A Systems Approach for the Protection of Human Health from Hazardous Chemicals	93.143	1,802,228	-
NIH	3-P42-ES027707-05S1	Science and Engineering for Sensors, Mechanisms, and Biomarkers of Exposures	93.143	-494	-
NIH	5-P42-ES027707-05	Science and Engineering for Sensors, Mechanisms, and Biomarkers of Exposures	93.143	2,305	-
NIH	5-P42-ES027707-05 REVISED	Science and Engineering for Sensors, Mechanisms, and Biomarkers of Exposures	93.143	669	-
NIH	5-P42-ES027707-07	The MIT Superfund Research Program: A Systems Approach for the Protection of Human Health from Hazardous Chemicals	93.143	906	-
NIH	1-F99-HG013039-01	Leveraging natural and engineered genetic barcodes from single cell RNA sequencing to investigate cellular evolution, clonal expansion, and associations between cellular genotypes and phenotypes	93.172	4,222	-
NIH	1-R56-HG011857-01	RNA targeting tools with novel specific RNA-guided RNA-targeting CRISPR effectors	93.172	27,508	-
NIH	5-F32-HG012307-03	Connecting perturbations of RNA binding proteins to their consequences	93.172	64,316	-
NIH	5-R01-HG002439-20	Regulation and Function of Alternative mRNA Isoform Expression in Mammals	93.172	450,029	-

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Federal Agency	Government Contract Number	Master Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NIH	5-R01-HG008754-04	High-Throughput Native Context Mapping and Modeling of Regulatory DNA	93.172	14,502	16,078
NIH	5-R01-HG010959-04	Privacy-preserving genomic medicine at scale	93.172	706,842	89,871
NIH	3-R01-DC016607-04S1 REVISED	The neural architecture of pragmatic processing	93.173	-1,201	-
NIH	5-R01-DC000238-36 REVISED	Experimental - Theoretical Studies of Cochlear Mechanisms	93.173	36,933	-
NIH	5-R01-DC000238-38	Experimental Theoretical Studies of Cochlear Mechanisms	93.173	274,869	-
NIH	5-R01-DC014739-05	Auditory Scene Analysis with Complex Sounds	93.173	22,671	-
NIH	5-R01-DC016607-05	The neural architecture of pragmatic processing	93.173	455,789	-
NIH	5-R01DC017970-03	Computational Cognitive Neuroscience of Human Auditory Cortex	93.173	7,221	-
NIH	5-R01DC017970-05	Computational Cognitive Neuroscience of Human Auditory Cortex	93.173	282,673	-
NIH	5R01DC020484-02	Neural Mechanisms that Underlie Flexible Sensory Control of Behavioral States in C. elegans	93.173	56,834	-
NIH	1-DP1-AT011991-01	Fusion of nanomagnetic and viral tools to interrogate brain-body circuits	93.213	1,606,009	-
NIH	1-R01-AT011460-01	Noninvasive sensory stimulation to promote glymphatic-lymphatic clearance for the treatment of Alzheimer's Disease	93.213	191,148	-
NIH	5R01AT011460-03	Noninvasive sensory stimulation to promote glymphatic-lymphatic clearance for the treatment of Alzheimer's Disease	93.213	522,489	-
NIH	1-K99-MH129613-01	Thalamic regulation of prefrontal dynamics in decision making under uncertainty	93.242	77,282	-
NIH	1-R01-MH129046-01	CRCNS: Computational principles of mental simulation in the entorhinal and parietal cortex	93.242	100,166	-
NIH	1-RF1-MH120017-01	Re-engineering Rabies Virus	93.242	845,927	-
NIH	1-RF1-MH121270-01 REVISED	Highly specific, renewable, and cost-effective antibody toolbox for 3D proteomic phenotyping of the brain	93.242	465,640	505,085
NIH	1-RF1-MH121885-01REVISED	Nobrainer: A robust and validated neural network tool suite for imagers	93.242	761,129	596,896
NIH	1-RF1-MH124606-01	Multiplexed Nanoscale Protein Mapping Through Expansion Microscopy and Immuno-SABER	93.242	336,280	336,280
NIH	1RF1MH124606-01 REVISED	Multiplexed Nanoscale Protein Mapping Through Expansion Microscopy and Immuno-SABER	93.242	273,111	-
NIH	1RF1MH132596-01	Highly multiplexed circuit mapping using barcoded rabies viruses and in situ sequencing	93.242	22,169	-
NIH	1-UG3-MH126868-01	Hemogenetic imaging technology for circuit-specific analysis of primate brain function	93.242	510,286	-
NIH	1-UG3-MH126869-01	Developing cell type-specific enhancers and connectivity mapping pipelines for marmosets	93.242	203,189	208,067

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Federal Agency	Government Contract Number	Master Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NIH	5-F31-MH124393-03	Exploring the role of genetic structural variation in neuropsychiatric diseases	93.242	14,245	-
NIH	5-F31-MH129112-02	Spatiotemporal dynamics of locus coeruleus norepinephrine release in a learned behavior	93.242	45,629	-
NIH	5F31MH133329-02	A brain-wide atlas of astrocyte molecular diversity across developmental stages and model species	93.242	4,524	-
NIH	5-F32-MH117933-03	Characterizing Neural Adaptation in Autism Spectrum Disorder	93.242	9,548	-
NIH	5-F32-MH122995-04	Markerless Tracking of 3D Posture to Reveal the Sensory Origins of Body Schema - PDF: K. Severson	93.242	73,533	-
NIH	5-R01-MH060379-20	Functional and anatomical characterization of the striosomal system	93.242	-125	-
NIH	5R01MH060379-23	Functional and anatomical characterization of the striosomal system	93.242	453,042	-
NIH	5R01MH085802-14	Early developmental mechanisms of Rett Syndrome	93.242	248,349	-
NIH	5-R01-MH104536-10	Imaging Synaptic Transmission of Individual Active Zones	93.242	496,826	-
NIH	5-R01-MH106497-05	Delineating the Anatomical and Functional Circuitry Underlying Social Learning	93.242	-1,160	-
NIH	5-R01-MH112694-05 REVISED	Simultaneous multiplexed in situ fluorescence imaging of neuronal proteins and messenger RNAs	93.242	110,153	-
NIH	5-R01-MH114031-04	RNA Scaffolds for Cell Specific Multiplexed Neural Observation	93.242	42,439	42,433
NIH	5-R01-MH115037-05	Elucidating neural substrates that mediate autism-like behaviors	93.242	-28,192	-
NIH	5-R01-MH115592-05	Thalamocortical Dynamics and Consciousness	93.242	73,823	-
NIH	5-R01-MH120118-03 REVISED	Behavioral and mechanistic dissection of a cognitive thalamo-cortical network	93.242	67,842	-
NIH	5R01MH121802-05	Mutant Shank3 macaque monkeys for neurobiological studies of ASD	93.242	185,839	-
NIH	5-R01-MH122025-05	CRCNS US-French Research Proposal : Principles of Inference through Neural Dynamics	93.242	198,217	-
NIH	5R01MH122270-05	Characterization of amygdalar circuits mediating suppression of innate social behaviors	93.242	575,867	-
NIH	5-R01-MH126351-04	Spatiotemporal dynamics of locus coeruleus circuits during learned behavior	93.242	270,458	-
NIH	5R01MH129046-03	CRCNS: Computational principles of mental simulation in the entorhinal and parietal cortex	93.242	341,332	-
NIH	5R01MH131715-02	Layer-specific manipulations to test feedforward/feedback cortical circuitry	93.242	90,476	-
NIH	5R01MH132172-02	CRCNS: Circuit mechanisms of priors and learning during decision making	93.242	232,915	-

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Federal Agency	Government Contract Number	Master Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NIH	5R21MH130067-02	Structured light temporal focusing depth-resolved wide-field FLIM-FRET for in vivo synaptic imaging	93.242	207,352	17,196
NIH	5R21MH130624-02	Investigation of the Synaptic Molecular Network using Multiplexed Imaging	93.242	158,390	-
NIH	5R24MH117295-05	DANDI: Distributed Archives for Neurophysiology Data Integration	93.242	1,402,188	843,610
NIH	5-U01-MH114819-05	A Molecular and Cellular Atlas of the Marmoset Brain	93.242	331,485	331,485
NIH	5-U01-MH117072-04	Towards integrated 3D reconstruction of whole human brains at subcellular resolution	93.242	-75,360	-3,748
NIH	5-U01-MH117072-05	Towards integrated 3D reconstruction of whole human brains at subcellular resolution	93.242	1,567,236	139,415
NIH	5-UG3-MH126868-02	Hemogenetic imaging technology for circuit-specific analysis of primate brain function	93.242	105,657	-
NIH	5-UG3-MH126869-02	Developing cell type-specific enhancers and connectivity mapping pipelines for marmosets	93.242	1,234,200	584,868
NIH	5-K99-AA028579-02	Arousal-induced noradrenergic signaling modulates cortical astrocyte-neuron circuits during ethanol consumption	93.273	100,407	-
NIH	1-R01-DA045549-01	High-Performance Imaging Through Scattering Living Tissue	93.279	3,612	-
NIH	1-R01-DA054584-01	Single-Cell Dissection of Ensembles and Cell Types Mediating Opioid Action in the Rodent Brain	93.279	274,094	-
NIH	1-RF1-DA049005-01	Novel tools for spatiotemporal modulation of astrocytes in neuronal circuits	93.279	219,910	8,506
NIH	1UE5DA056914-01	Entrepreneurship and Innovation for Biomedical Product Development (EI4BPD)	93.279	192,097	37,189
NIH	5-R01-DA029639-10	Novel Platforms for Systematic Optical Control of Complex Neural Circuits In Vivo	93.279	19,214	-
NIH	5-R01-DA029639-12	Novel Platforms for Systematic Optical Control of Complex Neural Circuits In Vivo	93.279	717,934	219,981
NIH	5-R01-DA045549-04	High-Performance Imaging Through Scattering Living Tissue	93.279	47,390	21,974
NIH	5-R01-DA054584-03	Single-Cell Dissection of Ensembles and Cell Types Mediating Opioid Action in the Rodent Brain	93.279	459,952	-
NIH	5-U01-DA054181-02	A Genetic Engineering Toolbox for Marmosets (GETMarm): Development and optimization of genome editing and assisted reproduction techniques for marmoset models	93.279	1,088,794	-
NIH	5UE5DA056914-02	Entrepreneurship and Innovation for Biomedical Product Development (EI4BPD)	93.279	13,053	-
NIH	1-R01-EB024591-01	Synthetic Genetic Controller Circuits to Reprogram Cell Fate	93.286	3,913	3,634
NIH	1-R01-EB025854-01	Synthetic biology-regulated RNA vaccines	93.286	77,445	-
NIH	1-R01-EB026344-01	Multivalent Nano-conjugates for Targeted Penetration of and Delivery to Dense Extracellular Matrices	93.286	6,775	-

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Federal Agency	Government Contract Number	Master Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NIH	1-R01-EB027717-01A1	Micro-invasive biochemical sampling of brain interstitial fluid for investigating neural pathology	93.286	369,399	-
NIH	1-R01-EB030946-01	Synthetic gene sensors and effectors to redirect organoid development	93.286	416,728	416,728
NIH	1-R01-EB031082-01A1	Localized immunotherapy using alum-binding therapeutics	93.286	362,454	-
NIH	1-R01-EB031813-01A1	NMR-Based Rapid Fluid Assessment: Device Design and Signal Processing	93.286	163,693	149,918
NIH	1-R01-EB031992-01A1	SMART BIOELECTRONIC IMPLANTS FOR CONTROLLED DELIVERY OF THERAPEUTIC PROTEINS IN VIVO AND ITS APPLICATION IN LONG-TERM TREATMENT OF HEMOPHILIA A	93.286	166,038	-
NIH	1-R21-EB028414-01A1	Mechanical Augmentation of the Diaphragm for End-Stage Respiratory Failure	93.286	164,582	-
NIH	1-R21-EB033019-01	Compact Helium-Free Fast-Switching MRI Magnet for Ratiometric Molecular Imaging and Novel Contrast Exploration	93.286	11,583	-
NIH	1-U01-EB031641-01	Toward functional molecular neuroimaging using vasoactive probes in human subjects	93.286	285,890	-
NIH	2-P41-EB015871-31	MIT Laser Biomedical Research Center	93.286	304,200	116,479
NIH	2-R01-EB001965-14	Advanced Instrumentation for Dynamic Nuclear Polarization NMR Research	93.286	15,836	-
NIH	2-R01-EB004866-13	Innovative Instrumentation for High Magnetic Field DNP NMR	93.286	34,705	-
NIH	2-R01-EB017755-05	Mucin Glycans in the Regulation of Microbial Virulence	93.286	147,426	105,972
NIH	2R56EB017205-08A1	Critical Care R56 Bridge Funding	93.286	7,462	-
NIH	2T32EB019940-06A1	Neurobiological Engineering Training Program	93.286	86,630	-
NIH	3-K99-EB025254-02S1	High-throughput micro-RNA profiling of single cells and its application in leukemia	93.286	33,092	-
NIH	3-R01-EB017205-06S1	Critical Care Informatics	93.286	25,561	-
NIH	3-R01-EB025854-03S1	COVID-19: Synthetic biology-regulated RNA vaccines	93.286	199,175	-
NIH	3-R01-EB026344-03S1 REVISED	Multivalent Nano-conjugates for Targeted Penetration of and Delivery to Dense Extracellular Matrices	93.286	155,463	-
NIH	3-R21-EB026008-02S1 REVISED	COVID-19: Structured DNA Nanoparticles Therapeutic mRNA and CRISPR/Cas9 Delivery	93.286	1,898	-
NIH	5-K99EB027706-02	Developing next generation multiphoton systems to reveal cortico-thalamic interactions underlying short-term memory in behaving mice	93.286	-2,577	-
NIH	5K99EB032427-02	Development of bio-integrated devices to enhance transplant survival for subcutaneous encapsulated cell therapies	93.286	90,986	-
NIH	5-P41-EB015871-35	MIT Laser Biomedical Research Center	93.286	373,179	-

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Federal Agency	Government Contract Number	Master Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NIH	5-R01-EB000244-41	A new high-throughput gastrointestinal tract explant platform for drug formulation discovery and metabolic disease modulation	93.286	367,527	367,527
NIH	5-R01-EB000244-42	A new high-throughput gastrointestinal tract explant platform for drug formulation discovery and metabolic disease modulation	93.286	354,987	-
NIH	5-R01-EB001965-17	Advanced Instrumentation for Dynamic Nuclear Polarization NMR Research	93.286	423,108	-
NIH	5-R01EB004866-16	Innovative Instrumentation for High Magnetic Field DNP NMR	93.286	280,152	-
NIH	5-R01-EB017205-07 REVISED	Critical Care Informatics	93.286	135,814	-
NIH	5-R01-EB017755-08 REVISED	Mucin Glycans in the Regulation of Microbial Virulence	93.286	194,399	-
NIH	5-R01-EB022062-04 REVISED	Tabletop liquid-helium-free, persistent-mode 1.5-T/70-mm osteoporosis MRI magnet	93.286	64,110	-
NIH	5-R01-EB024261-07	Expansion Microscopy	93.286	826,309	-
NIH	5-R01-EB024591-04	Synthetic Genetic Controller Circuits to Reprogram Cell Fate	93.286	16,631	20,924
NIH	5-R01-EB025256-04	Programmed Differentiation Circuits for Organoids using Meso-Microfluidics	93.286	192,585	-
NIH	5R01EB025854-04	Synthetic biology-regulated RNA vaccines	93.286	7,813	-
NIH	5-R01-EB026344-04	Multivalent Nano-conjugates for Targeted Penetration of and Delivery to Dense Extracellular Matrices	93.286	43,458	-
NIH	5-R01-EB027717-04 REVISED	Micro-invasive biochemical sampling of brain interstitial fluid for investigating neural pathology	93.286	346,919	-
NIH	5R01EB030946-04	Synthetic gene sensors and effectors to redirect organoid development	93.286	242,861	-
NIH	5-R01-EB031082-03	Localized immunotherapy using alum-binding therapeutics	93.286	290,679	-
NIH	5-R01-EB031813-03	NMR-Based Rapid Fluid Assessment: Device Design and Signal Processing	93.286	130,227	-
NIH	5-R01-EB031957-03	Programmable gene integration and cell engineering with CRISPR-directed integrases	93.286	437,306	-
NIH	5-R01-EB031992-03	SMART BIOELECTRONIC IMPLANTS FOR CONTROLLED DELIVERY OF THERAPEUTIC PROTEINS IN VIVO AND ITS APPLICATION IN LONG-TERM TREATMENT OF HEMOPHILIA A	93.286	316,750	-
NIH	5-R21-EB026008-02 REVISED	Structured DNA Nanoparticles Therapeutic mRNA and CRISPR/Cas9 Delivery	93.286	-16,514	-
NIH	5-R21-EB032607-02	Microfluidics-enabled directed affinity reagent engineering for fast, sensitive diagnostics	93.286	161,517	-
NIH	5R21EB033019-02	Compact Helium-Free Fast-Switching MRI Magnet for Ratiometric Molecular Imaging and Novel Contrast Exploration	93.286	124,754	-
NIH	5-T32-EB001680-17	Neuroimaging Training Program	93.286	21,765	-
NIH	5-T32-EB001680-18	Neuroimaging Training Program	93.286	171,089	-

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NIH	5-U01-EB029132-03	Microvascular Permeability, Inflammation, and Lesion Physiology in Endometriosis: A Microphysiological Systems Approach	93.286	565,322	-
NIH	5-U01-EB031641-02	Toward functional molecular neuroimaging using vasoactive probes in human subjects	93.286	548,645	-
NIH	1DP2AI136597-01	Developing powerful daisy drive systems for the precise alteration of local populations	93.310	-43,835	-
NIH	1-DP2-GM140938-01	DYNAMIC BOTTOM-UP DISSECTION OF CHROMATIN LOOPING AND GENE REGULATION	93.310	814,041	-
NIH	1-DP2-GM146248-01	Late Stage Stereochemical Editing to Transform the Synthesis of Bioactive Molecules	93.310	547,442	-
NIH	1-DP2-GM146254-01	Towards fully reconstituting mammalian transcription in a test tube	93.310	463,185	-
NIH	1-DP2-HL168072-01	Circulatronics: A New Paradigm for Biomedical Implants	93.310	220,215	-
NIH	1-R01-ES031576-01	Epigenetics of the human gut microbiome	93.310	161,933	-
NIH	4-DP2-ES027992-02	Proteome-Driven Holistic Reconstruction of Organ-Wide Multi-Scale Networks	93.310	-18,095	-
NIH	5DP5OD026369-05	Dissecting and engineering reversible cell cycle states	93.310	425,022	-
NIH	5-R01-ES031576-05	Epigenetics of the human gut microbiome	93.310	232,402	-
NIH	5-U01-CA231079-03	Development of multifunctional probes for profiling microbial glycans	93.310	-1,867	-
NIH	5-U24-OD026638-04	Knockin marmoset reporters for non-invasive measuring of genome-editing efficiency	93.310	690,559	-
NIH	1U18TR004149-01	Informatics and Machine Learning Modules for Research Planning, Scheduling, Simulation, and Optimization in the ASPIRE Autonomous Laboratory	93.350	351,918	-
NIH	1-S10-OD028706-01A1	Q-band Upgrade to an X-band Pulsed EPR spectrometer	93.351	730,251	-
NIH	1-U01-CA250554-01	Developing high-throughput genetic perturbation strategies for single cells in cancer organoids	93.353	-1,244	-
NIH	5-U01-CA250554-02	Developing high-throughput genetic perturbation strategies for single cells in cancer organoids	93.353	546,991	-
NIH	1-F99-CA264404-01	Toward safe, systemic immunotherapies for treatment of metastatic disease: Developing dendritic cell-biased immunomodulators with precise control over magnitude and timing of immune stimulation	93.393	45,386	-
NIH	1-R21-CA256081-01	Innovative Droplet Lenses for NextGen Light Sensors of Biomarkers of Inflammation	93.393	82,773	-
NIH	5-K00-CA245813-05	Protein Phosphatase PP2A and DNA damage in cell fate decisions of acute myeloid leukemic cells	93.393	91,285	-
NIH	5-K00-CA253767-04	Evaluating evolutionary dynamics in pancreatic adenocarcinoma	93.393	86,755	-

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NIH	5-P01-CA042063-32	Characterization of Pathways Controlling Cancer at the Level of Gene Regulation	93.393	228,528	-
NIH	5-R01-CA080024-26	Intra and Extra-Chromosomal Probes for Mutagenesis by Carcinogens	93.393	396,375	-
NIH	5-R21-CA256081-03	Innovative Droplet Lenses for NextGen Light Sensors of Biomarkers of Inflammation	93.393	156,717	8,610
NIH	1-R01-CA220468-01	Organic nanoparticles for dual MRI-guided therapeutic selection and ovarian cancer drug delivery	93.394	143,743	142,159
NIH	1-R01-CA252216-01	Omniview tethered capsule folow cost , non-endoscopic Barretts esophagus screenings in unsedated patients	93.394	5,589	-
NIH	1-R21-CA236685-01	Building microenvironment-containing organoids from patient samples with single-cell precision	93.394	71,741	71,741
NIH	1-R21-CA259840-01	High-efficiency microfluidic cell fusion for dendritic cell/tumor cell vaccine production	93.394	192,674	89,489
NIH	5-R01-CA218094-05	Deep learning based antibody design using high-throughput affinity testing of synthetic sequences	93.394	504,095	-
NIH	5-R01-CA220468-05	Organic nanoparticles for dual MRI-guided therapeutic selection and ovarian cancer drug delivery	93.394	55,612	-
NIH	5-R01-CA220468-07	Bottlebrush polymer prodrugs for targeted delivery of combination therapies and in vivo imaging of pharmacological response	93.394	270,799	-
NIH	5-R01-CA235740-05	Microengineered Technologies for Quantitative, Multiplexed and Spatially Resolved Measurement of miRNA in Tissue Sections	93.394	314,468	128,384
NIH	5-R01-CA249151-04	Increasing nerve-sparing radical prostatectomy rates using intraoperative nonlinear microscopy	93.394	606,841	395,813
NIH	5-R01-CA252216-03	Omniview tethered capsule folow cost , non-endoscopic Barretts esophagus screenings in unsedated patients	93.394	177,672	-
NIH	5-R21-CA236685-03	Building microenvironment-containing organoids from patient samples with single-cell precision	93.394	71,568	-
NIH	1-R01-CA226898-01A1	RNA-Binding Proteins as Molecular Integrators that Control the Response of HGSOC to Ant-Cancer Therapies	93.395	539,315	-
NIH	1-R01-CA235375-01A1	Delivery of cytokines for cancer immunotherapy using nanolayer-controlled trafficking of liposomal nanoparticles	93.395	55,346	-
NIH	1-R01-CA247632-01	Enhancing CAR-T cell activity against solid tumors by vaccine boosting through the chimeric receptor	93.395	18,095	18,095
NIH	1-R01-CA271243-01	Intratumoral Cytokine Immunotherapy Studies in Companion Canine Cancer Models	93.395	42,319	28,544
NIH	1-U01-CA265706-01	Immunotherapy via engineered therapeutic programs in tumors using RNA	93.395	571,482	23,598
NIH	5-R01-CA073808-26	Human Ribonuclease as a Cytotoxin	93.395	474,672	-

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NIH	5-R01-CA235375-05	Delivery of cytokines for cancer immunotherapy using nanolayer-controlled trafficking of liposomal nanoparticles	93.395	215,791	-
NIH	5-R01-CA247632-05	Enhancing CAR-T cell activity against solid tumors by vaccine boosting through the chimeric receptor	93.395	351,992	-
NIH	5-R01-CA271243-03	Intratumoral Cytokine Immunotherapy Studies in Companion Canine Cancer Models	93.395	360,768	-
NIH	1-R01-CA245314-01A1	Impact of fasting on intestinal stem cells and cancer	93.396	57,890	-
NIH	1-R21-CA257980-01A1	A cell-cycle induced genetic recorder for simultaneous recovery of cell divisions and lineage	93.396	86,986	73,211
NIH	1R35CA274464-01	Studying factors controlling cancer progression and immune recognition in mouse models	93.396	423,206	-
NIH	1-U01-CA253547-01A1	Identifying therapeutic pathways targeting medulloblastoma-immune cell interactions	93.396	230,232	232,954
NIH	1-UG3-CA275687-01	Single-cell label-free identification of senescence by Raman microscopy and spatial genomics	93.396	328,682	171,010
NIH	3-U01-CA238720-04S1	Identification of adaptive response mechanisms in breast cancer by information theory and proteomics	93.396	127,628	-
NIH	3-U01-CA238720-05	Identification of adaptive response mechanisms in breast cancer by information theory and proteomics	93.396	15,633	-
NIH	5R01CA233477-05	Identifying and targeting evolutionary trajectories in cancer	93.396	492,535	-
NIH	5-R01-CA233983-03 REVISED	Development of novel metastatic mouse models that recapitulate the major immune contexts of human colon cancer	93.396	89,326	-
NIH	5-R01-CA245314-04	Impact of fasting on intestinal stem cells and cancer	93.396	247,013	-
NIH	5R01CA248280-05	Rapid ex vivo biosensor cultures to assess dependencies in gastroesophageal cancer	93.396	664,250	-
NIH	5-R21-CA257980-02	A cell-cycle induced genetic recorder for simultaneous recovery of cell divisions and lineage	93.396	104,764	-
NIH	5-R33-CA257878-02-REVISED	Super-resolution microscopy for dynamic analysis of focal enhancer amplifications in cancer	93.396	375,492	-
NIH	5-R35-CA242379-03	Understanding the role of metabolism in cancer	93.396	-160,452	-
NIH	5-R35-CA242379-04	Understanding the role of metabolism in cancer	93.396	822,167	-
NIH	5-R37CA273819-02	Understanding the induction of T cell dysfunction in the context of lung cancer.	93.396	61,135	-
NIH	5-U01-CA214381-05	Development of Physiologic Tissue Models to Assess Tumor Explant Response to Immune Checkpoint Blockade	93.396	561,910	488,690
NIH	5-U01-CA215798-05	Systems approaches to understanding the relationships between genotype, signaling, and therapeutic efficacy	93.396	210,887	210,887
NIH	5-U01-CA238720-03	Identification of adaptive response mechanisms in breast cancer by information theory and proteomics	93.396	53,423	49,846

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NIH	5-U01-CA238720-04	Identification of adaptive response mechanisms in breast cancer by information theory and proteomics	93.396	265,511	92,857
NIH	5-U01-CA253547-02	Identifying therapeutic pathways targeting medulloblastoma-immune cell interactions	93.396	499,653	298,484
NIH	7-R01-CA248280-03	Rapid ex vivo biosensor cultures to assess dependencies in gastroesophageal cancer	93.396	107,448	9,982
NIH	1U54CA261694-01	Mechanical determinants of organ-selective metastatic colonization, dormancy and outgrowth	93.397	1,535,577	951,383
NIH	5-P30-CA014051-50	Cancer Center Support (CCSG) Grant	93.397	-2,436	-
NIH	5-P30-CA014051-51	Cancer Center Support (CCSG) Grant	93.397	3,019,609	-
NIH	5-P30-CA014051-52	Cancer Center Support (CCSG) Grant	93.397	555,424	-
NIH	5-U54-CA210180-05	MIT/Mayo Physical Sciences Center for Drug Delivery and Efficacy in Brain Tumors	93.397	19,188	65,304
NIH	5-U54-CA217377-05	Quantitative and functional characterization of therapeutic resistance in cancer (PARENT)	93.397	628,793	148,967
NIH	1-F31-CA268835-01	Comprehensive modeling of tumor suppressor gene-derived neoantigens in pancreatic cancer	93.398	20,002	-
NIH	1F99CA274651-01	Engineering Next-Generation Nanoparticles One Layer at a Time	93.398	1,450	-
NIH	1-K99-CA255928-01A1 REVISED	Understanding the effects of dietary interventions on pancreatic ductal adenocarcinoma therapy	93.398	10,185	-
NIH	5F31CA232340-04	Determining the mechanism of serine sensing by the mTOR pathway	93.398	-1,044	-
NIH	5-F31-CA232355-04 REVISED	Defining the mechanism of starvation-induced ribophagy	93.398	47,527	-
NIH	5-F31-CA239493-04	Rebalancing protein homeostasis enhances tumor antigen presentation	93.398	18,146	-
NIH	5-F31-CA254162-04	Understanding Compartmentalized Leucine Metabolism Downstream of mTORC1 Signaling	93.398	45,441	-
NIH	5-F31-CA261093-02 REVISED	Investigating the impact of heterogeneous and homogenous neoantigen expression patterns on the anti-tumor immune response	93.398	23,561	-
NIH	5-F31-CA271787-02	Exploiting metabolic vulnerabilities of breast cancer brain metastases for therapy	93.398	46,059	-
NIH	5-F31-CA275339-02	Interrogation of retroelement-derived proteins for functional gene transfer	93.398	36,050	-
NIH	5-F32-CA239362-03	Cytosolic Delivery of Tumor Antigens into Dendritic Cells - Postdoctoral Fellow: Nicholas Truex	93.398	13,249	-
NIH	5-F32-CA247259-03	Molecular probes for allele-specific interdiction of K-Ras G12D signaling	93.398	65,113	-

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NIH	5-F32-CA247274-03	Genomic incorporation of stapled peptides for cost effective discovery and synthesis of novel therapeutics - PDF: Emma Chory	93.398	48,485	-
NIH	5F32CA265042-03	Elucidating the molecular mechanisms of PRMT5i response and resistance in LUAD and PDAC	93.398	72,107	-
NIH	5F99CA274651-02	Engineering Next-Generation Nanoparticles One Layer at a Time	93.398	44,754	-
NIH	5-K00-CA212227-06	Imaging Cancer Angiogenesis with Acoustic Angiography Ultrasound	93.398	52,476	-
NIH	5-K99-CA237861-02 REVISED	Developing multiplexed microenvironmental sensors for precision diagnostics of cancer metastasis	93.398	19,935	-
NIH	5-K99-CA255844-02 REVISED	Understanding drug delivery through an integrated barcoding approach	93.398	9,710	-
NIH	5-R01-HL140471-04	Investigating the role of H2A.Z dynamics in regulating cardiac lineage commitment	93.837	14,513	-
NIH	5R01HL153857-04	Stretchable Hydrogel Bioinks-Enabled Microfluidic Bioprinting of Functional Small-Diameter Blood Vessels	93.837	610,406	318,925
NIH	5-R01-HL161069-03	Personalized lesion modification optimizes atherosclerosis intervention	93.837	752,359	203,766
NIH	5-F32-HL162428-02	The Role of Macrophages in Pulmonary Regeneration using a Bioengineered Whole Lung Tissue Model	93.838	68,486	-
NIH	5-R01-HL162564-03	Nonviral delivery techniques for in vivo prime editing	93.838	389,839	-
NIH	1-R01-HL158102-01	Single-cell measurement of cyclic stress on sickle blood cells by imaging-microfluidics	93.839	186,442	-
NIH	5-F30-HL156404-03 REVISED	Molecular determinants of fetal hemoglobin induction by hydroxyurea to treat sickle cell disease	93.839	50,496	-
NIH	5-R01-HL158102-03	Single-cell measurement of cyclic stress on sickle blood cells by imaging-microfluidics	93.839	329,683	208,899
NIH	5-F31-AR079263-03	Chondronoids for Studying Collagen-II Homeostasis and Diseases	93.846	48,460	-
NIH	5-R01-AR071443-05	Defining and Modulating Mechanisms of Collagen Proteostasis	93.846	3,809	-
NIH	5R01AR080392-02	Developing an Objective and Quantifiable Measure of Itch Using Artificial Intelligence and Radio Signals	93.846	312,544	-
NIH	5-R56-AR044276-24	Chemistry and Biology of Collagen	93.846	-14,656	-
NIH	5-F32-DK126233-03	Engineered nanoparticles to rescue complement dysfunction and vascular disease during diabetes	93.847	71,561	-
NIH	5-R01-DK115558-05	Macromolecular interactions controlling the ALA synthases, keystone enzymes that initiate heme biosynthesis	93.847	485,562	-
NIH	1-F99-NS124175-01	PDF: H. Kosakowski - Function of high-level visual cortex in awake infants.	93.853	-378	-
NIH	1-R01-NS113245-01	Functional dissection of thalamocortical interactions through genetically-defined TRN subnetworks	93.853	85,967	-

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NIH	1-R01-NS115576-01	Wireless Magnetomechanical Neuromodulation of Targeted Circuits	93.853	134,028	134,028
NIH	1-R01-NS115576-01 REVISED	Wireless Magnetomechanical Neuromodulation of Targeted Circuits	93.853	388,432	-
NIH	1-R01-NS120592-01	Nanosensors for sensitive brain-wide neurochemical imaging	93.853	406,482	-
NIH	1R01NS121073-01A1	Analysis of integrated brain functions using hemogenetic imaging	93.853	65,202	51,427
NIH	1-R01-NS123120-02	Non-Human Primate Model for Developing Closed-Loop Anesthesia Delivery Systems	93.853	346,472	-
NIH	1-R21-NS120088-01A1	A high-throughput open-well system for engineering neurovascular units	93.853	152,283	-
NIH	1-R21-NS123499-01A1	Pathophysiology and treatment of fragile X and related disorders	93.853	271,686	-
NIH	1-R21-NS125396-01A1	Developing a strategy for 4-color in vivo two-photon imaging	93.853	175,093	-
NIH	1-RF1-NS129032-01	Single-cell multi-region transcriptional and epigenomic dissection of VCID	93.853	823,314	-
NIH	2-R01-NS089076-06	Epigenetic pathology and therapy in Huntington's disease	93.853	647,286	118,972
NIH	3-F32-NS116107-02S1	New molecular pathways that link gut microbiota to neural circuit activity and behavior	93.853	19,960	-
NIH	3-R01-NS113245-04S1	Functional dissection of thalamocortical interactions through genetically-defined TRN subnetworks	93.853	97,617	-
NIH	3-R01-NS113245-05S1	Functional dissection of thalamocortical interactions through genetically-defined TRN subnetworks	93.853	417,463	-
NIH	4-UG3-NS115064-02	Year 2: Construction of an integrated immune - vascular brain - chip as a platform for the study, drug screening, and treatments of Alzheimer's disease	93.853	67,282	-
NIH	5-F31-NS113464-02	The Role of Neuronal DNA Double Strand Breaks in Neuroinflammation	93.853	5,620	-
NIH	5-F31-NS118753-03	Interferometric, acousto-optic modulated diffuse correlation spectroscopy @ 1064 nm (AOM-iDCS) toward higher sensitivity, non-invasive measurement of cerebral blood flow	93.853	6,459	-
NIH	5-F31-NS118948-03	Effect of Nanoscale Active Zone Morphology on Synaptic Vesicle Release Probability	93.853	16,127	-
NIH	5-F31-NS127420-02 REVISED	Establishing the cohort of early active zone proteins and their role in synaptic strength and maturation at the Drosophila neuromuscular junction.	93.853	39,747	-
NIH	5-F31-NS127458-02	Profiling Axonal Specializations in Dopamine Neurons and Their Alterations in Parkinson’s Disease Models	93.853	20,441	-
NIH	5-F32-NS128067-02	Single Cell Dissection of Cerebrovascular Dysfunction in Parkinson's Disease and Amyotrophic Lateral Sclerosis	93.853	54,664	-
NIH	5-K00-NS113459-05	The development of subnetworks of the TRN	93.853	81,032	-

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Federal Agency	Government Contract Number	Master Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NIH	5K99NS118112-02	Network and dendritic mechanisms of context-dependent cortical computation	93.853	2,469	-
NIH	5-R00-NS119749-04	A new animal model to examine nervous system function, development, and regeneration	93.853	171,198	-
NIH	5-R01-NS040296-22	Characterization of the Drosophila Synaptotagmin Family	93.853	361,981	-
NIH	5-R01-NS077986-11	Pre-motor Neural Circuits for Exploratory Movement	93.853	436,207	-
NIH	5-R01-NS098505-03	Dissecting the role of thalamic inhibition in neurodevelopmental diseases	93.853	4,610	-
NIH	5-R01-NS098505-05	Dissecting the role of thalamic inhibition in neurodevelopmental diseases	93.853	6,395	-
NIH	5-R01NS102730-05	Mechanisms underlying DNA double strand break response in Alzheimer?s disease and frontal temporal dementia	93.853	84,670	-
NIH	5-R01-NS104892-05	Neuromodulatory control of collective circuit dynamics in C. elegans	93.853	55,452	-
NIH	5-R01-NS106031-05	A dendritic mechanism for cholinergic neuromodulation of cortical function	93.853	207,123	-
NIH	5-R01-NS109947-06	Cortical Signature and Modulation of Pain	93.853	990,450	508,711
NIH	5-R01-NS113079-05	Dendritic Computation and Representation of Head Direction in Retrosplenial Cortex	93.853	467,716	-
NIH	5-R01-NS117588-03	Molecular and Cellular Mechanisms Mediating Structural and Functional Active Zone Maturation	93.853	254,962	-
NIH	5R01NS119519-04	Sensorimotor learning through adjustments of cortical dynamics	93.853	321,494	-
NIH	5-R01-NS121073-03	Analysis of integrated brain functions using hemogenetic imaging	93.853	381,825	-
NIH	5-R01-NS121078-02	Human 3D Neuro-Vascular Interaction and Meningeal Lymphatic Models with Application to Alzheimer’s Disease	93.853	259,109	259,109
NIH	5-R01-NS121078-03	Human 3D Neuro-Vascular Interaction and Meningeal Lymphatic Models with Application to Alzheimer’s Disease	93.853	278,680	-
NIH	5-R01-NS130361-02	Astrocyte-neuron circuits underlying cortical mechanisms of learned behavior	93.853	143,341	-
NIH	5R01NS131457-02	Brain-wide representations of behavior during aversive internal states in C. elegans	93.853	85,967	-
NIH	5-R35-NS127327-02	Molecular Mechanisms Underlying Cell Type-Specific Vulnerability in Huntington’s Disease	93.853	536,592	-
NIH	5-R37NS051874-27	The Cdk5/35 Kinase	93.853	622,714	-
NIH	5-U01-NS110453-03	Single-cell transcriptional and epigenomic dissection of Alzheimer's Disease and Related Dementias	93.853	21,853	-
NIH	5-U01-NS121471-02	Computational neuroscience of language processing in the human brain	93.853	1,141,584	524,560

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Federal Agency	Government Contract Number	Master Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NIH	5-U01-NS121471-03	Computational neuroscience of language processing in the human brain	93.853	243,422	-
NIH	5UH3NS115064-03	Year 2: Construction of an integrated immune - vascular brain - chip as a platform for the study, drug screening, and treatments of Alzheimer's disease	93.853	1,367,963	190,194
NIH	5UH3NS115064-04	Year 2: Construction of an integrated immune - vascular brain - chip as a platform for the study, drug screening, and treatments of Alzheimer's disease	93.853	523,462	480,331
NIH	1-DP2-AI158126-01	Repertoire-scale T cell antigen identification via peptide-MHC lentivirus display	93.855	315,914	-
NIH	1-R01-AI168166-01A1	Defining the Interplay Between Viral Adaptation and Host Proteostasis	93.855	49,682	31,247
NIH	1R01AI175489-01	"Extended dosing" immunization to enhance humoral immunity to next-generation vaccines	93.855	761	-
NIH	1-R21-AI158169-01	COVID-19: EVOLVING VIRUS-SPECIFIC sACE2 MIMICS FOR COMPETITIVE INHIBITION OF SARS-CoV-2	93.855	213,091	-
NIH	1-R21-AI167289-01	Identifying mucin O-glycans in the regulation of Staphylococcus aureus pathogenesis	93.855	75,550	61,775
NIH	1R21AI179432-01	Mechanism of nuclear pore passage of the HIV-1 capsid	93.855	2,586	-
NIH	1-R61-AI161297-01	Immune engineering of optimized sequential immunization strategies for HIV vaccines	93.855	304,721	290,946
NIH	1-R61-AI161805-01	Combinatorial and computational design of bnAb mRNA vaccines for HIV	93.855	140,268	-
NIH	2-R01-AI055258-16	Synthetic Ligands for Directing Immune Responses	93.855	39,957	-
NIH	3-R01-AI152209-02S1	Heritable immunization of the white-footed mouse reservoir of Lyme disease	93.855	135,548	-
NIH	5-F31-AI133989-03	Solid-state NMR studies of the dynamic interactions of the influenza A M2 membrane protein with water, antiviral drugs, and the M1 protein	93.855	-114	-
NIH	5F32AI161868-03	Engineering chimeric gene therapy vectors with enhanced packaging capacity - PDF: V. Madigan	93.855	67,530	-
NIH	5-F32-AI164829-02	Controlling Vaccine Kinetics with Small Molecule Drugs	93.855	69,794	-
NIH	5F32AI172121-02	Investigating genes of unknown function required for Rickettsia parkeri infection	93.855	51,531	-
NIH	5-R01-AI016892-43	AAA+ proteolytic machines	93.855	283,427	-
NIH	5-R01-AI055258-19	Synthetic Ligands for Directing Immune Responses	93.855	474,024	-
NIH	5-R01-AI126592-08	Chemical Probes of Mycobacteria	93.855	748,266	-
NIH	5-R01-AI141543-04	Target-specific antimalarial compound identification using phenotypic assays	93.855	141,725	-

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Federal Agency	Government Contract Number	Master Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NIH	5-R01-AI152209-03	Heritable immunization of the white-footed mouse reservoir of Lyme disease	93.855	692,905	570,559
NIH	5R01AI155489-03	Mechanisms of SFG Rickettsia-Host Interactions	93.855	457,826	-
NIH	5-R01-AI162307-03	Investigation of Synthetic DNA-based Viral Particles for Spatially Controlled Antigen Presentation	93.855	434,719	-
NIH	5-R01-AI168166-02	Defining the Interplay Between Viral Adaptation and Host Proteostasis	93.855	430,973	-
NIH	5-R01-AI175489-02	"Extended dosing" immunization to enhance humoral immunity to next-generation vaccines	93.855	69,330	-
NIH	5-R21-AI156664-02	Development of an emulsion-based method for repertoire-scale paired-chain T cell receptor sequencing	93.855	231,873	-
NIH	5R21AI167289-02	Identifying mucin O-glycans in the regulation of Staphylococcus aureus pathogenesis	93.855	114,734	-
NIH	5-R21-AI171663-02	Biochemical Strategy to Avert Microbial Drug Resistance	93.855	168,081	-
NIH	5-R33-AI121669-04	Engineering "Phagebody" Antimicrobials for Carbapenem-Resistant Enterobacteriaceae	93.855	-89,529	-
NIH	5-R61-AI161297-03	Immune engineering of optimized sequential immunization strategies for HIV vaccines	93.855	344,904	-
NIH	5-R61-AI161805-02	Combinatorial and computational design of bnAb mRNA vaccines for HIV	93.855	162	-
NIH	5-R61-AI161805-03	Combinatorial and computational design of bnAb mRNA vaccines for HIV	93.855	472,098	-
NIH	5-U19-AI131135-05	3D Models of Engineered Human iPS Cells to Investigate Neurotropic Virus Infections	93.855	17,375	-
NIH	5-U19-AI131135-05 REVISED	3D Models of Engineered Human iPS Cells to Investigate Neurotropic Virus Infections	93.855	463,953	75,938
NIH	1 T32 GM136540-01A1	Pre-doctoral Training in Fundamental Approaches to Biochemistry and Cell and Molecular Biology	93.859	60,798	-
NIH	1DP2GM128200-01	Nanometer distance assay to uncover protein dynamics	93.859	24,339	-
NIH	1-DP2-GM140922-01	An Evolutionary Framework For Identifying Determinants Of Colonization In Human Microbiomes	93.859	675,301	-
NIH	1-DP2-GM149549-01	New insights into the molecular regulation of mechanotransduction	93.859	211,483	-
NIH	1K99GM149815-01	Dissecting enhancer-promoter looping and gene induction dynamics in differentiation	93.859	32,195	-
NIH	1-R01-GM137138-01	A high-resolution 1.3-GHz LTS/HTS NMR magnet (1.3G)	93.859	36,536	-
NIH	1-R01-GM147794-01	A Benchtop Cryogen-Free 23.5-T/25-mm-RT-Bore Magnet for 1-GHz microcoil NMR Spectroscopy	93.859	452	-

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Federal Agency	Government Contract Number	Master Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NIH	1-R21-GM141616-01	Accelerated discovery of synthetic polymers for ribonucleoprotein delivery through the integration of active learning, machine learning, and polymer science	93.859	22,191	-
NIH	2-R01-GM126376-05	Metallobiochemistry of innate immunity and bacterial physiology	93.859	111,640	111,608
NIH	2-R01-GM132997-35	High Field DNP and EPR in Biological Systems	93.859	40,144	-
NIH	2R35GM126982-06	Metalloenzyme structure, function and assembly	93.859	75,913	-
NIH	3F32GM134557-03S2	Protein fragments as cotranslationally-acting inhibitors	93.859	5,000	-
NIH	3-F32-GM137477-02S1 REVISED	Developing glycan-directed tools to investigate microbial infection	93.859	22,004	-
NIH	3-F32-GM139231-02S1	Exploring novel mechanisms of antiviral immunity in bacteria.	93.859	23,014	-
NIH	3-K99-GM140212-02S1	Evolutionary adaptation and spatial organization of signaling in the Mitotic Exit Network	93.859	86,750	-
NIH	3-R01-GM114547-10S1	Synthetic Methods based on Biphilic Phosphorus Catalysts	93.859	484,018	-
NIH	3-R01-GM131627-03A1S1	Structure and function of the monotopic phosphoglycosyl transferase superfamily: Initiators of biosynthesis of complex bacterial glycoconjugates	93.859	185,103	-
NIH	3-R01-GM135413-04S1	Dissecting the functional organization of the serotonergic system in C. elegans	93.859	50,760	-
NIH	3-R35-GM122483-03S1	Metal-Catalyzed Methods for Organic Synthesis	93.859	-403	-
NIH	3-R35-GM136354-03S1	Leveraging Next-Generation Directed Evolution Platforms and Chemical Control of Proteostasis to Deliver Robust Biotechnologies and Illuminate Roles of Chaperone Networks in Protein Evolution	93.859	83,981	-
NIH	3-R35-GM141963-03S1	Development of New Strategies for Chemical Synthesis and Study of Complex Natural Products	93.859	425	-
NIH	4R00GM126277-03	Non-cleaved Electro-Mechanical Expansion (NEME) technology for super-resolution imaging of biological samples with conventional optical microscopes	93.859	64,181	-
NIH	5 R01 GM131627-05	Structure and function of the monotopic phosphoglycosyl transferase superfamily: Initiators of biosynthesis of complex bacterial glycoconjugates	93.859	459,560	172,784
NIH	5-F31-GM131648-04	Structural Basis of Metallocofactor Delivery and Repair	93.859	57,459	-
NIH	5F31GM146448-02	Biochemical and Biophysical Studies of Human Ribonucleotide Reductase	93.859	47,394	-
NIH	5F31GM148042-02	Anti-CRISPR-mediated Acylation and Bioreversible Esterification for Precision Genome Editing	93.859	47,970	-
NIH	5-F31-GM148069-02	Enzymatic Mechanism of Polysaccharide Length Control by GlfT2	93.859	21,880	-
NIH	5-F32-GM133056-03	Structural Characterization of AdoMet Radical Enzyme-Catalyzed Posttranslational Modifications in Bacterial Anaerobic Metabolism	93.859	-2,363	-
NIH	5-F32-GM134568-02	Defining Adaptors for mRNA Degradation in Bacteria	93.859	-3,133	-

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Federal Agency	Government Contract Number	Master Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NIH	5-F32-GM134577-03	Investigating mechanisms regulating cell adhesion during tissue remodeling	93.859	15,147	-
NIH	5F32GM136023-03 REVISED	Design and synthesis of nucleoside-based small molecules to inhibit phosphoglycosyl transferases	93.859	74,993	-
NIH	5-F32-GM136190-02	Living Additive Expansion Microscopy	93.859	8,533	-
NIH	5-F32-GM137510-02 REVISED	Investigation of the design, structure and mechanism of Mena protein interaction inhibitors	93.859	67,068	-
NIH	5-F32-GM137543-03	Developing Cyclopentadiene as a Reagent in Bioorthogonal Chemistry	93.859	7,583	-
NIH	5-F32-GM139304-03	The Structures of hVDAC-1 and hVDAC-2 by High Frequency Magic Angle Spinning Nuclear Magnetic Resonance Spectroscopy	93.859	61,350	-
NIH	5F32GM140548-03	Mechanistic dissection of dynamics of transcriptional regulation by chromatin looping	93.859	63,452	-
NIH	5F32GM142152-03	Investigating mechanisms regulating cytoskeletal dynamics and alignment during epithelial tissue folding	93.859	69,621	-
NIH	5-F32-GM143840-03	Structural Determination and Design of Drug Interactions with Ribonucleotide Reductase	93.859	61,946	-
NIH	5-F32-GM143865-03	Development of Nontrigonal Phosphorus Catalysts for Redox-Mediated Cross-Coupling Transformations	93.859	69,245	-
NIH	5-F32-GM143898-03	Determinants of elongation rate differences between B. subtilis and E. coli RNA polymerases	93.859	63,337	-
NIH	5-F32-GM145072-03	Structure function investigations of radical transfer and disulfide exchange in a class Ia ribonucleotide reductase	93.859	92,402	-
NIH	5F32GM146391-03	Enantioselective Thioetherification of Olefins Guided by CuH Catalysis	93.859	70,809	-
NIH	5-F32-GM147996-02	Development of Novel Biphilic Phosphorus Catalysts via Computational Modeling and Multidimensional Analysis	93.859	56,596	-
NIH	5-K99-GM145910-02	Investigation and application of hydrocarbon-degrading enzymes using cryo-electron microscopy and directed evolution	93.859	89,578	-
NIH	5-K99-GM148718-02	Cytotoxicity and function of incomplete proteins	93.859	48,257	-
NIH	5-P41-GM132079-03	MIT Harvard Center for Magnetic Resonance-Year 1	93.859	387,692	-
NIH	5R00GM126277-05	Non-cleaved Electro-Mechanical Expansion (NEME) technology for super-resolution imaging of biological samples with conventional optical microscopes	93.859	166,886	-
NIH	5-R00-GM130896-04	Molecular Mechanisms regulating chromatin looping in time and space	93.859	131,648	-
NIH	5-R00-GM140265-03	Understanding mechanisms of transcriptional regulation by chromatin adaptor proteins	93.859	241,698	-
NIH	5-R01-GM024663-45	Genetic Analysis of Nematode Egg Laying and Co-regulated Behavioral Systems	93.859	341,081	-

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Federal Agency	Government Contract Number	Master Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NIH	5-R01-GM031030-38 REVISED	Molecular Genetics of Rhizobium Nodulation Plasmids	93.859	79,860	-
NIH	5R01GM039334-35	Deciphering the Principles of Membrane-Associated Glycan Assembly for Glycoconjugate Biosynthesis	93.859	520,592	251,404
NIH	5-R01-GM044783-29	Protein Chemistry	93.859	141,067	-
NIH	5-R01-GM066976-17	Structures and lipid interactions of curvature-inducing membrane peptides by NMR	93.859	217,319	-
NIH	5-R01-GM085319-12 REVISED	Function of Sequence-specific RNA Binding Proteins	93.859	1,111	-
NIH	5-R01-GM085319-15	Function of Sequence-specific RNA Binding Proteins	93.859	300,905	-
NIH	5-R01-GM088204-13S1	Structures and Dynamics of Proton- and Cation-Dependent Channels and Transporters	93.859	220,557	-
NIH	5-R01-GM110048-06	Analysis and design of protein interactions that regulate cell death	93.859	15,909	-
NIH	5-R01-GM114190-09	Polymer models of mitotic and interphase chromosomes	93.859	412,416	-
NIH	5-R01-GM118695-04	Bioinorganic Explorations of Host-Defense Proteins	93.859	13,494	-
NIH	5-R01-GM118695-06	Bioinorganic Explorations of Host-defense Proteins	93.859	168,076	-
NIH	5-R01GM125646-04 REVISED	Investigating RhoA GTPase regulation in sculpting tissues	93.859	61,546	-
NIH	5-R01-GM126376-07	Metallobiochemistry of innate immunity and bacterial physiology	93.859	192,684	-
NIH	5-R01-GM129007-04	Mapping, modeling and manipulating the interactions of protein domains that bind short linear motifs	93.859	186,949	-
NIH	5R01GM130936-04	Reagents for Chemical Oligophosphorylation, Synthesis of Oligophosphate-Organic Molecule Conjugates, and Biochemical Studies	93.859	348,125	-
NIH	5-R01-GM132997-34	High Field DNP and EPR in Biological Systems	93.859	627,124	-
NIH	5-R01-GM134734-04	Nuclear Organization and Dynamics of Mediator and RNA Polymerase II in Living Stem Cells	93.859	49,338	-
NIH	5-R01-GM135413-04	Dissecting the functional organization of the serotonergic system in C. elegans	93.859	190,598	-
NIH	5-R01-GM136882-05	Modeling the Organometallic Chemistry of Radical S-adenosylmethionine Enzymes	93.859	258,767	-
NIH	5-R01-GM137138-02	A high-resolution 1.3-GHz LTS/HTS NMR magnet (1.3G)	93.859	53,657	-
NIH	5-R01-GM137138-04	A high-resolution 1.3-GHz LTS/HTS NMR magnet (1.3G)	93.859	188,574	-
NIH	5-R01-GM139055-03	Diamond Rotors	93.859	297,121	-
NIH	5-R01-GM140108-04	Mechanobiology of Vimentin Intermediate Filaments in 3D Collective Cell Migration	93.859	357,092	240,105
NIH	5R01GM141025-02	Microbial Control of Host Intercellular Communication	93.859	213,079	-
NIH	5-R01-GM141275-02S1	Selective Catalytic Strategies for Carbohydrate Synthesis	93.859	230,678	-
NIH	5R01GM144542-03	Tools to determine and analyze the structures of molecular machines in motion	93.859	303,021	-

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Federal Agency	Government Contract Number	Master Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NIH	5R01GM145787-03	Chemical Approaches to Studying the Mechanisms and Biophysical Properties of Complex Metallocofactors	93.859	323,635	-
NIH	5-R01-GM147794-02	A Benchtop Cryogen-Free 23.5-T/25-mm-RT-Bore Magnet for 1-GHz microcoil NMR Spectroscopy	93.859	167,655	-
NIH	5-R01-GM147960-02	Mechanisms of replication origin licensing studied by real-time single-molecule fluorescence	93.859	203,454	85,231
NIH	5-R21-GM140613-02	Acoustically-driven optical-interferometric microscope for cell characterization	93.859	120,616	-
NIH	5-R21-GM141616-02	Accelerated discovery of synthetic polymers for ribonucleoprotein delivery through the integration of active learning, machine learning, and polymer science	93.859	134,739	-
NIH	5-R35 -GM142634-03	Mechanisms regulating ribosome assembly and function in stem cells and vertebrate development.	93.859	315,198	-
NIH	5-R35-GM122483-05	Metal-Catalyzed Methods for Organic Synthesis	93.859	6,625	-
NIH	5-R35-GM122483-07	Metal-Catalyzed Methods for Organic Synthesis	93.859	1,311,046	-
NIH	5R35GM122488-08	Studies on cell polarity, chemotropism, and cell cycle control	93.859	149,293	-
NIH	5-R35-GM122538-05	Mechanisms and regulation of replication, the cell cycle, gene expression, and horizontal gene transfer in prokaryotes, focusing on Bacillus subtilis	93.859	213,554	-
NIH	5R35GM124732-05	Evolution and Regulation of Bacterial Proteome Composition	93.859	-10,701	-
NIH	5R35GM124732-07	Evolution and Regulation of Bacterial Proteome Composition	93.859	164,468	-
NIH	5-R35-GM126982-05 REVISED	Metalloenzyme structure, function and assembly	93.859	249,576	-
NIH	5-R35-GM133580-05	From epigenome to genome and back: disentangling the relationship between epigenetic modifications and chromatin organization	93.859	385,809	-
NIH	5-R35-GM136354-04S1	Leveraging Next-Generation Directed Evolution Platforms and Chemical Control of Proteostasis to Deliver Robust Biotechnologies and Illuminate Roles of Chaperone Networks in Protein Evolution	93.859	183,437	-
NIH	5R35GM141517-04	Structure and function of ClpXP	93.859	450,552	-
NIH	5-R35-GM141834-03	Structure-Function of Nucleo-Cytoplasmic Communication	93.859	555,229	-
NIH	5R35GM141861-03	Manifold representations and active learning for 21 st century biology	93.859	352,685	-
NIH	5-R35-GM141963-03	Development of New Strategies for Chemical Synthesis and Study of Complex Natural Products	93.859	555,439	-
NIH	5-R35-GM143033-03	Multiscale tools and approaches for understanding and engineering cell-fate transitions	93.859	348,061	-
NIH	5-R35-GM144115-03	Tissue morphogenesis: From signals to forces	93.859	561,585	-
NIH	5-R35GM148220-02	Protein Chemistry	93.859	218,353	-

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Federal Agency	Government Contract Number	Master Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NIH	5-R35-GM148343-02	Mechanisms and regulation of replication, the cell cycle, gene expression, and horizontal gene transfer in prokaryotes, focusing on Bacillus subtilis	93.859	344,204	-
NIH	5-RM1-GM135102-04	A universal pipeline for functional characterization of the human microbiota at a massive scale	93.859	1,869,767	1,629,523
NIH	5-T32 GM136540-02 REVISED	Pre-doctoral Training in Fundamental Approaches to Biochemistry and Cell and Molecular Biology	93.859	1,395,177	-
NIH	5-T32-GM087237-13 REVISED	Graduate Training in Computational and Systems Biology	93.859	-8,463	-
NIH	5-T32-GM087237-14 REVISED	Graduate Training in Computational and Systems Biology	93.859	459,541	-
NIH	7F32GM134557-03 REVISED	Protein fragments as cotranslationally-acting inhibitors	93.859	20,218	-
NIH	1-R01-HD105947-01	Genetically Programmed Pancreatic Organoids with Self-Adaptive Multi-Lineage Population Control	93.865	467,878	275,707
NIH	3-F32-HD100064-03S1	Neurocognitive Basis of Language Comprehension in Children with Dyslexia	93.865	47,100	-
NIH	5-DP1-HD091947-05	How Does the Functional Organization of the Human Brain Arise in Development?	93.865	795,658	-
NIH	5-F32-HD096829-04	How infants use the affiliations of their caregivers to evaluate others.	93.865	-1,104	-
NIH	5-F32-HD097982-03 REVISED	Linguistic Experience and Generalization: Early Links between Sounds,Words, and Grammar	93.865	30,413	-
NIH	5-F32-HD103363-03 REVISED	Neural foundations of learning, reasoning, and surprise in human infants [PDF: S. Liu]	93.865	64,509	-
NIH	5F32HD108930-02	Metabolic Regulation of Pancreatic Epithelium Development	93.865	62,606	-
NIH	5-F32-HD110967-02	Neurocognitive Foundations of Morphological Processing in Children with Dyslexia	93.865	23,010	-
NIH	5-R01-HD097135-05	Agonist-Antagonist Myoneural Interface for Functional Limb Restoration after Transtibial Amputation	93.865	637,213	-
NIH	5R01HD103847-03	How do Cortical regions selective for visual scenes develop in human infants?	93.865	277,038	-
NIH	5R01HD105947-03	Genetically Programmed Pancreatic Organoids with Self-Adaptive Multi-Lineage Population Control	93.865	399,126	-
NIH	5R01HD110335-02	Parsing the Interplay Between Biophysical and Biochemical Microenvironment Cues On Endometriosis Lesion Phenotypes Using Microphysiologial Systems	93.865	309,800	-
NIH	1 P30 AG064190-01	MIT Roybal Center for Translational Research to Improve Healthcare for the Aging	93.866	-71,536	-59,347
NIH	1-R01-AG062335-01	Elucidating the Molecular Mechanisms of Neuropsychiatric Symptoms in Alzheimer's Disease	93.866	528,568	-
NIH	1-R01-AG070831-01	Mechanisms of pathology and neuronal hyperactivity in a memory circuit in Alzheimer's disease	93.866	337,674	-

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Federal Agency	Government Contract Number	Master Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NIH	1-R01-AG074003-01	Single-cell epigenomic and trancriptional dissection of sex-specific differences in Alzheimer's Disease	93.866	271,307	-
NIH	1-R56-AG069192-01	The infectious etiology of Alzheimer's disease revealed at nanoscale precision	93.866	219,828	192,163
NIH	1-RF1-AG058504-01 REVISED	Solid State NMR Studies of Amyloid Proteins	93.866	38,496	-
NIH	1-RF1-AG062377-01 REVISED	Dissection of endosomal trafficking mechanisms in Alzheimers Disease	93.866	522,495	-
NIH	1-RF1-AG075901-01A1	The effects of Alzheimer's disease risk genes on metabolism and signaling across cell types	93.866	514,462	97,768
NIH	1-U01-AG077227-01	Mapping the vulnerable locus coeruleus pathways in aging and AD	93.866	946,816	28,394
NIH	2-R56-AG049897-06A1	Health care hotspotting: inside the Camden Coalition's superutilizer program	93.866	173,098	-
NIH	3-P30-AG064190-02S1	MIT Roybal Center for Translational Research to Improve Healthcare for the Aging	93.866	21,707	23,293
NIH	3-P30-AG064190-02S2	MIT Roybal Center for Translational Research to Improve Healthcare for the Aging	93.866	-153	-
NIH	3-RF1-AG059661-01S1	Molecular structures of tau aggregates studied by solid-state NMR	93.866	744,718	-
NIH	5 P30 AG064190-02	MIT Roybal Center for Translational Research to Improve Healthcare for the Aging	93.866	793,651	227,548
NIH	5 P30 AG064190-03	MIT Roybal Center for Translational Research to Improve Healthcare for the Aging	93.866	4,037	-
NIH	5-F32-AG072813-02	Engineering a Vascularized Brain-Chip for Probing and Evaluating Mechanisms of Alzheimer's Disease	93.866	63,871	-
NIH	5-K99-AG073466-02	Impact of DNA double-strand breaks on 3D genome organization and genome stability in Alzheimer's disease	93.866	127,860	-
NIH	5-R01-AG058002-05	Epigenomic, transcriptional and cellular dissection of Alzheimer's variants	93.866	-13,072	27,981
NIH	5R01AG058504-03	Solid State NMR Studies of Amyloid Proteins	93.866	470,871	-
NIH	5-R01-AG062335-05	Elucidating the Molecular Mechanisms of Neuropsychiatric Symptoms in Alzheimer's Disease	93.866	1,023,029	52,035
NIH	5-R01-AG067151-04	Single-Cell Transcriptional and Epigenomic Dissection to Identify Therapeutic Targets for ALS and FTD	93.866	726,453	211,632
NIH	5-R01-AG069232-03	Manipulating Neural Oscillations with Non-Invasive Sensory Stimulation for Alzheimer's Disease Intervention	93.866	912,851	-
NIH	5-R01-AG070831-03	Mechanisms of pathology and neuronal hyperactivity in a memory circuit in Alzheimer's disease	93.866	443,765	-
NIH	5-R01-AG074003-03	Single-cell epigenomic and trancriptional dissection of sex-specific differences in Alzheimer's Disease	93.866	1,219,405	-

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Federal Agency	Government Contract Number	Master Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NIH	5-R01-AG074932-02	Discovery and manipulation of transcription factors to restore long term stem cell repopulation in aged bone-marrow	93.866	662,028	-
NIH	5R01AG081017-02	Single-cell multi-region dissection of AD-pathogen interactions for HSV-1 and CMV	93.866	343,871	20,522
NIH	5-R37-AG032449-15	Determinants of Elderly Health: The Role of Place-Based Factors	93.866	385,339	237,435
NIH	5-U01-AG066757-02 REVISED	Development of PU.1 Inhibitory Modulators as Novel Therapeutics for Alzheimer's Disease	93.866	340,566	340,566
NIH	5-U01-AG066757-03	Development of PU.1 Inhibitory Modulators as Novel Therapeutics for Alzheimer's Disease	93.866	1,389,320	1,012,788
NIH	7-R01-AG058002-02	Epigenomic, transcriptional and cellular dissection of Alzheimer's variants	93.866	87,474	-
NIH	1-R01-EY033843-01	Computational Models of the Ventral Visual Pathway in Humans: What, How, and Why?	93.867	20,539	-
NIH	1-R01-EY034419-01	Characterizing excitatory synapse in vivo structural dynamics	93.867	6,525	-
NIH	1-R21-EY034283-01	A Novel Wireless and Subcellular Device for Neuromodulation	93.867	56,105	-
NIH	2R01EY011289-34	Novel Optical Diagnostics with Optical Coherence Tomography	93.867	102,225	102,225
NIH	2-R01-EY025437-06A1	in vivo imaging of circuit remodeling in mouse visual cortex	93.867	148,999	-
NIH	5-F31-EY031259-03	Distinct long-range inputs to prefrontal cortex coordinate visual decision making	93.867	23,639	-
NIH	5-F31-EY033649-02	Alignment of visual features in binocular cortical circuits through experience dependent synaptic plasticity	93.867	36,263	-
NIH	5F31EY033996-03	Elucidating the Role of Dorsal Lateral Geniculate Nucleus Burst-Mode Firing in Retinal Inactivation Induced Recovery from Monocular Deprivation	93.867	42,194	-
NIH	5F32EY032756-03	Visual cortex circuits mediating arousal and visual discrimination	93.867	66,889	-
NIH	5K99EY032603-02	Towards a computationally precise characterization of the human ventral visual pathway	93.867	57,026	-
NIH	5-P30-EY002621-44	Core-Vision Processes	93.867	-86,289	-
NIH	5-P30-EY002621-45	Core-Vision Processes	93.867	462,839	-
NIH	5-R01-EY011289-37	Novel Optical Diagnostics with Optical Coherence Tomography	93.867	233,611	-
NIH	5-R01-EY020517-11	Project Prakash: Development of Object Perception After Late Sight Onset	93.867	553,454	-
NIH	5-R01-EY023037-10	Behavioral Consequences and cellular substrates of plasticity in visual cortex	93.867	702,343	-
NIH	5-R01-EY025437-05 REVISED	in vivo imaging of inhibitory circuit remodeling in mouse visual cortex	93.867	478	-
NIH	5-R01-EY028219-04	Astrocyte-neuron interactions in visual cortex circuits	93.867	155,236	-

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Federal Agency	Government Contract Number	Master Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NIH	5-R01-EY029245-04 REVISED	Using the principles of synaptic plasticity to promote recovery from amblyopia	93.867	63,538	-
NIH	5-R01-EY029666-05	Neural Mechanisms for Feature-Based Attention	93.867	651,860	-
NIH	5-R01-EY033430-02	Interhemispheric coordination and transfer of visual information	93.867	201,957	-
NIH	5-R01-EY033638-03	CRCNS: Resolving human face perception with novel MEG source localization methods	93.867	238,766	-
NIH	5R01EY034419-02	Characterizing excitatory synapse in vivo structural dynamics	93.867	388,342	-
NIH	5-R21-EY032369-02	Multimodal probes for multiscale calcium imaging	93.867	197,999	-
NIH	5-R21-EY034283-02	A Novel Wireless and Subcellular Device for Neuromodulation	93.867	76,219	-
NIH	1U19AI167899-01	Maternal Omics to Maximize Immunity	93.RD	1,268,746	1,100,456
NIH	75N97020C00013	COVID-19: A Federated COVID-Rich ICU Database	93.RD	235,462	113,839
		Total for NIH		**125,326,740**	**19,630,516**
		TOTAL for Department of Health & Human Services		**136,904,915**	**24,493,646**

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Federal Agency	Government Contract Number	Master Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
DEPARTMENT OF HOMELAND SECURITY					
DHS	22CWDARI00046-01-00	Novel Low Cost, Robust and High Sensitivity Polycrystalline Radiation Detectors	97.077	278,330	38,575
DHS	70FB7020C00000019	COVID-19: Development of alternative foundation system(s) for the SEED post-disaster housing unit for OCONUS tropical islands	97.RD	100,241	-
		Total for Department of Homeland Security		**378,571**	**38,575**
		TOTAL for Department of Homeland Security		**378,571**	**38,575**

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Federal Agency	Government Contract Number	Master Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
DEPARTMENT OF TRANSPORTATION					
DOT	692M151940009	FAA Joint University Program for Air Transportation	20.108	75,928	-
DOT	692M152140015	Pilot Response to System Malfunctions	20.108	651	-
DOT	13-C-AJFE-046	Center of Excellence for Alternative Jet Fuels and Environment	20.109	167,710	-
DOT	13-C-AJFE-048	Center of Excellence for Alternative Jet Fuels and Environment	20.109	394,396	-
DOT	13-C-AJFE-MIT	Center of Excellence for Alternative Jet Fuels and Environment	20.109	1,120,559	28,366
DOT	13-C-AJFE-MIT-01	Center of Excellence for Alternative Jet Fuels and Environment	20.109	61,959	-
DOT	13-C-AJFE-MIT-045	Center of Excellence for Alternative Jet Fuels and Environment	20.109	146,360	-
DOT	13-C-AJFE-MIT-047	Center of Excellence for Alternative Jet Fuels and Environment	20.109	65,162	-
DOT	13-C-AJFE-MIT-050	Center of Excellence for Alternative Jet Fuels and Environment	20.109	125,772	17,990
DOT	13-C-AJFE-MIT-052	Center of Excellence for Alternative Jet Fuels and Environment	20.109	466,466	-
DOT	13-C-AJFE-MIT-075	Center of Excellence for Alternative Jet Fuels and Environment	20.109	126,763	-
DOT	13-C-AJFE-MIT-086	Center of Excellence for Alternative Jet Fuels and Environment	20.109	482,403	-
DOT	13-C-AJFE-MIT-091	Center of Excellence for Alternative Jet Fuels and Environment	20.109	213,721	-
DOT	13-C-AJFE-MIT-095	Center of Excellence for Alternative Jet Fuels and Environment	20.109	217,088	-
DOT	13-C-AJFE-MIT-103	Center of Excellence for Alternative Jet Fuels and Environment	20.109	65,934	-
		Total for Department of Transportation		**3,730,872**	**46,356**
		TOTAL for Department of Transportation		**3,730,872**	**46,356**

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Federal Agency	Government Contract Number	Master Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
MISCELLANEOUS FEDERAL GOVT					
Department of Interior					
DOI	D18AC00019	Ultrasmall and Ultrafast: Ferrimagnetic Skyrmions Manipulated by Spins and Photons	12.910	-54,596	-
DOI	D18AC00037	Many-body atomic clocks based on non-equilibrium correlated quantum matter	12.910	106,771	-
DOI	D18AP00039	Adaptive-focus topological features for machine-learning-driven discovery of 2D coordination polymers	12.910	-414	-
DOI	D19AP00037	Dislocation-free heteroepitaxy or IR devices by remote epitaxy	12.910	196,305	-
DOI	D22AP0015000001-0277	Mechanical Neuromorphic Metamaterials for Multifunctional Nanosystems	12.910	115,358	-
DOI	R22AC00183-00	Multi- market pilot of low-cost, time-variant electrodialysis reversal desalination systems with optimized brine management	15.506	374,957	70,566
DOI	G22AP00012-00	Towards improved quantification of induced earthquake sources using the Large-N LASSO array: Collaborative Research with Massachusetts Institute of Technology and Boston University	15.807	56,954	-
DOI	G22AP00198-00	Induced seismicity and aseismic slip on rough faults	15.807	78,472	-
DOI	G22AP00307-00	Interseismic deformation in the Northern San Francisco Bay and Sacramento-San Joaquin Delta Regions from survey GNSS observations: Collaborative Research with MIT and UC Riverside	15.807	32,260	-
		Total for Department of Interior		**906,067**	**70,566**
Department of Education					
ED	91990020C0105	Open Source Standard Wallet Application	84.RD	121	-
		Total for Department of Education		**121**	**-**
Department of Agriculture					
USDA	58-6000-0-0051	Rural / Urban Cost of Living Differences	10.250	13,397	-
USDA	2021-67021-33999	Nanosensors for Measuring and Decoding Immune Signaling Waveforms In Planta	10.310	123,546	-
USDA	2023-67021-38831	Upgrading Dairy Industry Waste through Microbial Engineering	10.310	6,267	-
		Total for Department of Agriculture		**143,210**	**-**
Other Agencies					
Misc.	LG-250130-OLS-21	Community Tracking Indicators for Open and Inclusive Scholarship	45.312	82,708	-
Misc.	2022-22072700001	USGA-MIT Strategic Partnership Proposal	54.RD	210,860	-
Misc.	83618301	The Hawaii Island Volcanic Smog Sensor Network (HI-Vog)	66.509	-509	-

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Federal Agency	Government Contract Number	Master Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
Misc.	84000501-0	Leveraging comprehensive organic oxidation experiments for the development of improved atmospheric chemical mechanisms	66.509	103,172	-
Misc.	95332422T0007	Generating Evidence to Improve Productivity Growth and Transportation Logistics of MSMEs in Indonesia	85.002	26,144	-
Misc.	95332423T0001	Economy-Wide Impacts of Environmental Changes and Responses	85.002	41,560	-
		Total for Other Agencies		**463,935**	**-**
		TOTAL for Miscellaneous Federal Govt		**1,513,333**	**70,566**

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Federal Agency	Government Contract Number	Master Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION					
NASA	80NSSC18K0457	Large Geodetic Array Processing and Correlation Impacts	43.001	43,116	-
NASA	80NSSC18K0553	Solar System Planetary Geodesy Research	43.001	5,120	-
NASA	80NSSC18K0682	The Design, Analysis and Research with Retro-reflector Arrays	43.001	27,161	-
NASA	80NSSC18K0849	The MIT-Hawaii-IRTF Joint Campaign for NEO Spectral Reconnaissance	43.001	-28	-
NASA	80NSSC18K1004	Earth, Mars or YORP spinup: Isolating the mechanisms for asteroid surface refreshing	43.001	-55	-
NASA	80NSSC18K1057	ASPECT: Active Shoreline Processes and Evolution of Coasts on Titan	43.001	25,843	2,152
NASA	80NSSC18K1091	Modeling extreme mass ratio inspirals: How accurate must the models be?	43.001	1,038	-
NASA	80NSSC18K1608	THE FIRST NUSTAR OBSERVATION OF 4U 1907+09	43.001	20,979	-
NASA	80NSSC18K1643	Plasma and Energetic Particle Archive for Jovian Magnetospheric Interactions with the Galilean Moons	43.001	8,717	-
NASA	80NSSC18K1677	Auroral Emissions Radio Observer (AERO)	43.001	134,155	1,686
NASA	80NSSC19K0078	Ionospheric Response to Super Storms and Its Role in Geospace Coupling	43.001	84,403	-
NASA	80NSSC19K0205	Designing applications to foster the health of terrestrial and wetland ecosystems in the coastal zone of West Africa	43.001	145,549	24,829
NASA	80NSSC19K0262	Ionospheric imprint of regional mesopause variability - a four dimensional study of atmospheric coupling	43.001	98,869	86,749
NASA	80NSSC19K0335	High Resolution and High Efficiency X-ray Transmission Grating Spectrometer	43.001	-495	-
NASA	80NSSC19K0464	The Thermal Maturity of Neoproterozoic Strata: Carbonate Clumped Isotope Thermometry and Biomarker Analyses	43.001	98,992	-
NASA	80NSSC19K0465	Biosignatures of the 'Dirty Ice' of the McMurdo Ice Shelf: Analogues for biological oases during the Cryogenian and on other icy worlds.	43.001	20,399	-
NASA	80NSSC19K0471	A Database Approach to Life's use of Chemical Space for Insight into the Nature and Signatures of Life on Other Worlds	43.001	6,665	-
NASA	80NSSC19K0617	Vector Interferometry Space Technology using AERO (VISTA)	43.001	418,862	19,447
NASA	80NSSC19K0834	Can gravity wave generation in the mesospheric polar vortex drive traveling ionospheric disturbances?	43.001	178,804	157,069
NASA	80NSSC19K0943	Quantifying the Effect of Contrail Cirrus on Climate, Atmospheric Composition, and Air Quality Through Coordinated Modeling and Observation	43.001	19,189	-

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Federal Agency	Government Contract Number	Master Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NASA	80NSSC19K1277	Swath Mapping Lidar Science and Requirements	43.001	10,556	-
NASA	80NSSC19K1287	NICER (Continuation) - Detector Team Support and Legacy Science	43.001	501,115	24,170
NASA	80NSSC20K0037	PROBING THE ORIGIN OF SLOW PULSATIONS IN 4U 0114+65 (NuSTAR 5134)	43.001	3,419	-
NASA	80NSSC20K0234	Guiding the search for signals of biological and prebiotic processes by the NASA Mars 2020 Rover mission	43.001	79,916	-
NASA	80NSSC20K0238	Enabling Magnetic Studies of Returned Samples with the Mars 2020 Rover	43.001	51,765	-
NASA	80NSSC20K0382	The Impact of Titan's Impacts	43.001	165,591	23,570
NASA	80NSSC20K0400	Demonstration of Pointing Stability to Enable Astrophysics with Rotating Synthetic Aperture Telescopes	43.001	79,729	-
NASA	80NSSC20K0401	Toward Fast, Low-Noise, Radiation-Tolerant X-ray Imaging Arrays for Lynx: Raising Technology Readiness Further	43.001	327,672	187,997
NASA	80NSSC20K0484	Delta T: Dynamics and Detectability of Deltas on Titan	43.001	109,500	52,750
NASA	80NSSC20K0499	Confronting Lyman-alpha radiation pressure in galaxy formation simulations	43.001	106,854	-
NASA	80NSSC20K0733	XARM observations of black hole accretion flows	43.001	91,451	-
NASA	80NSSC20K0737	MIT Participation in Calibration and Ground Software Development for XRISM	43.001	175,008	-
NASA	80NSSC20K0802	Simultaneous Disc and Corona Reverberation Mapping in AGN Mrk 335 (XMM 84276)	43.001	27,292	-
NASA	80NSSC20K0851	JOINT NUSTAR AND XMM TOO OBSERVATIONS TO CONSTRAIN THE SPINS OF SUPERMASSIVE BLACK HOLES IN TIDAL DISRUPTION FLARES (XMM 5210)	43.001	10,885	-
NASA	80NSSC20K0907	Development of sub-arcsecond x-ray telescope optics	43.001	811,206	133,724
NASA	80NSSC20K1012	Continuing Development of Bragg Reflector Optics and Gratings for Polarimetry	43.001	46,901	-
NASA	80NSSC20K1084	Mapping the evolution of the accretion flow in Tidal Disruption Events (XMM 82381)	43.001	3,118	-
NASA	80NSSC20K1085	Testing the origin of the X-ray Emission in Gamma-ray Loud NLSI 1H0323+342 (XMM 82378)	43.001	-103	-
NASA	80NSSC20K1092	Bubble-based Ocean-worlds Organics Sample Trap (BOOST)	43.001	503,027	40,461
NASA	80NSSC20K1157	Assessing the Impact of Glacial Melt on the Coupled Climate	43.001	119,879	-
NASA	80NSSC20K1249	Globe Orbiting Soft X-ray Polarimeter (GOSoX),	43.001	23,968	-
NASA	80NSSC20K1417	Material Mixing on the Moon from Impacts	43.001	124,618	-
NASA	80NSSC20K1584	DO SUPERGIANT FAST X-RAY TRANSIENTS LAUNCH JETS? A MULTIWAVELENGTH STUDY (FERMI 131162)	43.001	8,792	-

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Federal Agency	Government Contract Number	Master Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NASA	80NSSC20K1785	Model-Data Exploration of Hemispherical Asymmetries in the Magnetosphere/Ionosphere System	43.001	168,995	52,271
NASA	80NSSC20K1846	Lunar Orbiter Laser Altimeter Investigation and Associated Science	43.001	313,642	-
NASA	80NSSC20M0071	RESOURCE: Resource Exploration and Science of OUR Cosmic Environment	43.001	180,890	-
NASA	80NSSC21K0133	LONG-TERM SYSTEMATIC MONITORING OF HMXB PULSAR OAO 1657-415 (NICER 3149)	43.001	587	-
NASA	80NSSC21K0154	Investigating the Intensity of the Early Lunar Dynamo	43.001	123,334	16,020
NASA	80NSSC21K0354	A SYSTEMATIC STUDY OF TESS ORBITAL PHASE CURVES (TESS GI 3232)	43.001	7,976	-
NASA	80NSSC21K0550	Gravitational-Wave Instrumentation Subject Matter Expert for the NASA LISA Study Office	43.001	139,158	-
NASA	80NSSC21K0557	Response of the seasonal ice zone in the Southern Ocean to changes in the wind	43.001	164,205	-
NASA	80NSSC21K0849	T-Rex: Time-resolved Radiation Environment of planet forming disks with XMM-Newton (XMM 86504)	43.001	56,146	-
NASA	80NSSC21K0871	An unprecedented view of high-frequency QPO phenomena in accreting black holes (XMM 86501)	43.001	85,333	-
NASA	80NSSC21K0872	Investigating the vertical structure of the accretion disc wind in Hercules X-1 (XMM 86544)	43.001	8,408	-
NASA	80NSSC21K0874	The interplay between slow slip, fault coupling, and crustal earthquakes	43.001	190,790	11,896
NASA	80NSSC21K1304	MIT–GISS collaborations in Oceans and Climate	43.001	244,836	-
NASA	80NSSC21K1310	The Influence of Traveling Ionospheric Disturbances on Ionospheric Irregularities	43.001	148,098	-
NASA	80NSSC21K1369	Advanced Global Atmospheric Gases Experiment (AGAGE) Collaborative Project: MIT Component	43.001	639,233	132,124
NASA	80NSSC21K1775	2021 Antarctic Solar Eclipse: Ionospheric response in the southern and northern hemispheres	43.001	72,104	-
NASA	80NSSC21K1802	Tidal Evolution of the Satellite Systems of the Outer Planets	43.001	96,981	11,825
NASA	80NSSC21K1903	THE POWER OF SPACE: SIMULTANEOUS X-RAY AND UV MONITORING OF ACCRETING LOW-MASS STARS (NICER 3144)	43.001	2,709	-
NASA	80NSSC21M0012	MIT Media Lab: Supporting NASA's SciAct Portfolio	43.001	338,765	-
NASA	80NSSC22K0001	ACCRETION AND EJECTION IN NGC 1365 WITH NUSTAR AND CHANDRA/HETG (NuSTAR 7263)	43.001	32,778	-
NASA	80NSSC22K0090	TRACKING THE LONG-TERM EVOLUTION OF QUASI-PERIODIC ERUPTIONS FROM A NEWLY DISCOVERED EROSITA AGN USING XRT AND UVOT (SWIFT 1720147)	43.001	20	-

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Federal Agency	Government Contract Number	Master Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NASA	80NSSC22K0105	Testing whether impact plasmas and a core dynamo magnetized the Moon and Mercury	43.001	99,321	3,648
NASA	80NSSC22K0119	A Systematic Study Of Tess Orbital Phase Curves (TESS 4096)	43.001	35,357	-
NASA	80NSSC22K0153	Using the ECCO-Darwin data-assimilative global-ocean biogeochemistry model to quantify the drivers and uncertainty of ocean carbon sources and sinks	43.001	89,987	-
NASA	80NSSC22K0164	Hunting For Black Holes With Tess (TESS 4190)	43.001	6,589	-
NASA	80NSSC22K0171	GOLD-ICON Guest Investigator: Understanding the day-to-day variability of plasma bubbles utilizing GOLD-ICON data - drivers from above and below	43.001	99,861	-
NASA	80NSSC22K0179	A Systematic Study To Characterize Rapid Optical Variability Of Agn And Search For Quasi-Periodic Oscillations (TESS 4215)	43.001	4,884	-
NASA	80NSSC22K0459	Teasing out the hidden complexities of slow slip from the geodetic record in Cascadia	43.001	67,333	-
NASA	80NSSC22K0570	MAPPING GAS FLOWS IN THE AGN MRK 817 WITH XMM-NEWTON AND HST (XMM 88234)	43.001	58,845	-
NASA	80NSSC22K0788	Curved Detectors for Future X-ray Astrophysics Missions	43.001	65,844	-
NASA	80NSSC22K0836	Spatio-temporal Paleoclimate Constraints from Coupled Lake Systems on Mars	43.001	23,921	-
NASA	80NSSC22K0848	Removing Stellar Activity from Radial Velocity Observations using Machine Learning (20-EPRV)	43.001	119,630	-
NASA	80NSSC22K0959	RELATIVISTIC REFLECTION AND REVERBERATION MAPPING IN A BLACK HOLE BINARY (NICER 4118)	43.001	19,923	-
NASA	80NSSC22K0961	Identifying Newborn Compact Objects in Fast, Blue Optical Transients Using NICER's Superior Timing Observations (NICER 4156)	43.001	18,829	-
NASA	80NSSC22K0962	TOO Monitoring of a Future Stellar Tidal Disruption Event (NICER 4078)	43.001	37,442	-
NASA	80NSSC22K1013	Midlatitude topside ionospheric variations associated with plasmaspheric erosion and refilling	43.001	52,249	-
NASA	80NSSC22K1067	Disintegrating Rocky Bodies Transiting White Dwarfs: The Key To Understanding Exoplanet Compositions (TESS Cycle 3 G03207)	43.001	29,071	-
NASA	80NSSC22K1074	Imprint of stratospheric QBO on the thermosphere and ionosphere	43.001	94,978	-
NASA	80NSSC22K1120	Bridging the gap between X-ray and UV/optical disk reverberation mapping in Active Galactic Nuclei	43.001	81,313	-
NASA	80NSSC22K1136	Supporting Drought Management in Angola using Integrated Modeling of the Environment, Vulnerability, Decision Making and Technology (EVDT)	43.001	15,009	-
NASA	80NSSC22K1262	Disintegrating Rocky Bodies Transiting White Dwarfs: The Key To Understanding Exoplanet Compositions (TESS Cycle 4 G04200)	43.001	30,523	16,858

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Federal Agency	Government Contract Number	Master Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NASA	80NSSC22K1307	Relativistic Reflection and Reverberation Mapping in a Black Hole Binary (NICER 5118)	43.001	19,582	-
NASA	80NSSC22K1350	Time-Resolved Spectroscopic and Polarimetric Studies of 4U 1626-67 with NICER And IXPE (NICER 5161)	43.001	43,974	-
NASA	80NSSC22K1351	TOO Monitoring of a Future Stellar Tidal Disruption Event (NICER 5070)	43.001	31,037	-
NASA	80NSSC22K1408	Completing Kepler's Census: Using Deep Neural Networks to Measure the Frequency of Earth Analogs	43.001	129,046	-
NASA	80NSSC22K1412	High-order Wavefront Control for High-contrast Imaging on Space-rated Processors	43.001	238,664	50,882
NASA	80NSSC22K1697	EIS cloud development and showcase on generalized regression to ECCO state estimates.	43.001	3,165	-
NASA	80NSSC22K1808	ZWCL 1856.8: CAPTURING A DOUBLE RADIO RELIC IN THE NUSTAR FIELD OF VIEW (NuSTAR 8232)	43.001	6,588	-
NASA	80NSSC22K1904	Technology maturation for a high-sensitivity and high-resolving power x-ray spectrometer	43.001	638,249	247,400
NASA	80NSSC23K0067	Studying Minute Timescale Variability Of White Dwarfs In The Cycle 5 Tess Full Frame Images (TESS GO 5104)	43.001	160,000	-
NASA	80NSSC23K0211	Extremely Low-noise, High Frame-rate X-ray Image Sensors for Strategic Astrophysics Missions	43.001	74,719	-
NASA	80NSSC23K0218	Effect of methane clathrate on crater size and implications for the age of Titan's surface	43.001	3,397	-
NASA	80NSSC23K0350	Adaptive High-order Wavefront Control Algorithms for High-contrast Imaging on the Decadal Survey Testbed	43.001	114,456	-
NASA	80NSSC23K0355	Oceanic Pathways Of Earth Energy Imbalance	43.001	1,583	-
NASA	80NSSC23K0359	Capturing Quasi-Periodic Outflows from a Future AGN Outburst (NICER 5091)	43.001	10,521	-
NASA	80NSSC23K0389	Assessing Accuracy of Greenhouse Gas Emission Inventories in a Multi-Municipality Metropolitan Area	43.001	13,612	-
NASA	80NSSC23K0481	1ES 1927+654: Constraining the Late Stages of an Extreme Nuclear Transient (XMM 90259)	43.001	4,160	-
NASA	80NSSC23K0632	Time-dependent photoionisation modeling of AGN outflows and their dust content	43.001	8,228	-
NASA	80NSSC23K0644	The Rocket Experiment Demonstration of a Soft X-ray Polarimeter	43.001	334,105	-
NASA	80NSSC23K0671	Space Weather Impact on Planetary Emissions (SWIPE)	43.001	16,997	-
NASA	80NSSC23K0742	Analysis of Multi-GNSS Signal and Noise	43.001	54,785	-
NASA	80NSSC23K0768	Disintegrating Rocky Bodies Transiting White Dwarfs: The Key To Understanding Exoplanet Compositions (TESS 5084)	43.001	143	-

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Federal Agency	Government Contract Number	Master Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NASA	80NSSC23K0770	Sharp-crack modeling of asteroid fragmentation: alternative scaling laws of fragment strength as a function of size	43.001	15,705	-
NASA	80NSSC23K0907	ADROIT (Adaptive Deformable miRrors to enable deplOyable dIffractive opTics)	43.001	6,994	-
NASA	NNX11AJ28G	Development of a Magnetometer for a Planetary Lander	43.001	0	-2,617
NASA	NNX15AL48G	ROSES: Cassini Data Analysis and Participating Scientists	43.001	774	774
NASA	NNX16AC98G	Advanced Global Atmospheric Gases Experiment [AGAGE] Collaborative Project: MIT Component	43.001	319,805	121,873
NASA	NNX16AG82G	Electron Hole Instabilities in the Plasma Wake of Moons, Asteroids and Comets	43.001	0	-39
NASA	80NSSC20M0080	Modeling and Analysis of Safety in New Human-Automation Teaming	43.002	248,108	-
NASA	80NSSC21M0108	Combined Experimental and First Principles Tool Development of Interface Analysis in An All Solid-State Battery	43.002	226,725	-
NASA	80NSSC21M0114	Physics-guided Machine Learning Model of Interfacial Failure Mechanisms of Solid-State Energy Storage Systems Based on a Diagnostic Databank with Advanced Experimental Techniques	43.002	23,432	-
NASA	80NSSC22K0193	Investigation of Higher-order Adaptive Methods for Sonic Boom Propagation	43.002	46,826	-
NASA	80NSSC22K0794	Service Provider Dynamics in Federated Architectures for Advanced Air Mobility Systems	43.002	74,927	-
NASA	80NSSC21M0181	Motion Planning Algorithms for Automated Assembly of Digital Composites	43.009	1,794	-
NASA	80NSSC18K1579	CLICK mission	43.012	767,614	112,640
NASA	80NSSC19K0211	Simulating the Operational Local Volume for Electrospray ion Thrusters (SOLVEiT)	43.012	27,507	12,450
NASA	80NSSC19K0217	MOSAIC: Miniature Optical Steered Antenna for Intersatellite Communication	43.012	1,883	-
NASA	80NSSC21K0219	Advanced Space Technology Roadmapping Architecture (ASTRA)	43.012	259,338	-
NASA	80NSSC21K0221	Development of New Technologies for Modified Collins Cycle Expanders	43.012	277,147	14,498
NASA	80NSSC21K0345	REDUCED GRAVITY EXPERIMENTS TO ADVANCE CFD BOILING MODELS FOR CRYOGENIC FLUID MANAGEMENT SYSTEMS	43.012	257,942	-
NASA	80NSSC21K0353	Autonomous Robot Swarms for Lunar Orbit Servicing and Space Asset Assembly	43.012	7,357	-
NASA	80NSSC21K0541	A Suborbital Evaluation of Paraffin and Beeswax Formation in Microgravity for Low-Earth-Orbit Propulsion Applications	43.012	117,478	-
NASA	80NSSC22K0759	Venus Atmosphere and Cloud Particle Sample Return for Astrobiology	43.012	174,004	28,765

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Federal Agency	Government Contract Number	Master Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NASA	80NSSC22K0760	Silent, Solid-State Propulsion for Advanced Air Mobility Vehicles	43.012	95,917	-
NASA	80NSSC22M0298	STEP-1: Staged Electrospray Pathfinder 1 CubeSat	43.012	72,837	-
NASA	80NSSC23K0051	Adaptive Space Governance and Decision-Support using Source-Sink Evolutionary Environmental Models	43.012	50,764	-
NASA	80NSSC23K0585	Great Observatory for Long Wavelengths (GO-LoW)	43.012	94,820	-
NASA	80NSSC23K0586	Bend-Forming of Large Electrostatically Actuated Space Structures	43.012	15,454	-
NASA	80NSSC23K0964	Silent, Solid-State Propulsion for Advanced Air Mobility Vehicles	43.012	12,659	-
NASA	80GSFC20C0078	Advancing VGOS from a Budding Concept to a High-Accuracy Global Geodetic Observatory	43.RD	1,530,985	-
NASA	80GSFC22CA057	Small Satellite Operations Support for Wallops Flight Facility	43.RD	163,720	-
NASA	80GSFC23CA045	Survey and Time-domain Astrophysical Research Explorer (STAR-X) Mission	43.RD	93,500	-
NASA	80MSFC17C0012	Imaging X-ray Polarimetry Explorer - Main Project (Phase B - D)	43.RD	160,855	-
NASA	80MSFC19C0050	Thermally stable nanocrystalline Nickel alloys by powder metallurgy	43.RD	45,331	-
NASA	80NSSC22P0496	Display for Astronaut Spacesuit Helmet	43.RD	257,478	-
NASA	80NSSC22PA615	Autonomous multifunctional sensor platform	43.RD	130,142	-
NASA	80NSSC22PC062	Directional Recrystallization of Additively Manufactured Oxide Dispersion-Strengthened (ODS) Medium Entropy Alloys	43.RD	38,673	-
NASA	80NSSC23PA444	Developing a Physics-Informed Particle Impact Ignition Model for High-Pressure Oxidizing Environments	43.RD	43,600	-
NASA	NNG14FC03C	Transiting Exoplanet Survey Satellite	43.RD	6,582,170	1,394,770
NASA	NNH17CH01C	The Mars Oxygen Isru Experiment (MOXIE) Continuation	43.RD	912,186	24,525
		Total for National Aeronautics and Space Administration		**23,848,801**	**3,005,167**
		TOTAL for National Aeronautics and Space Administration		**23,848,801**	**3,005,167**

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Federal Agency	Government Contract Number	Master Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
US AGENCY FOR INTERNATIONAL DEVELOPMENT					
USAID	AID-OAA-A-12-00095	CITE and IDIN	98.001	833,977	364,434
USAID	7200AA21CA00009	Strengthening Development Research and Inclusive Innovation in Latin America through the Center for Innovation and Technology Network	98.012	2,105,469	777,990
USAID	AID-OAA-A-16-00058	Ultra-Low Energy Drip Irrigation for MENA Countries	98.RD	784,625	352,884
		Total for US Agency for International Development		**3,724,071**	**1,495,308**
		TOTAL for US Agency for International Development		**3,724,071**	**1,495,308**

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Federal Agency	Government Contract Number	Master Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NATIONAL SCIENCE FOUNDATION					
NSF	CBET-0939511	Science and Technology Center: Emergent Behavior of Integrated Cellular Systems (EBICS)	47.041	543,346	451,166
NSF	CBET-1653758	CAREER: Tuning passive prosthetic leg dynamics to create low-cost, robust devices that can replicate physiological gait in multiple activities of daily living	47.041	54,159	-
NSF	CBET-1705923	Engineering a new family of consensus repeat proteins based on nucleoporins	47.041	781	-
NSF	CBET-1751925	CAREER: Holistic Assessment of the Potential of Byproduct-Derived Alkali-Activated Materials	47.041	127,343	-
NSF	CBET-1846426	CAREER: Revealing spin-state-dependent reactivity in open-shell single atom catalysts with systematically-improvable computational tools	47.041	115,005	-
NSF	CBET-1847541	CAREER: Hybrid Biorobotic Matrices to Simulate Diaphragmatic and Myocardial Biomechanics	47.041	142,287	-
NSF	CBET-1907716	Understanding Gas Transport through Nanopores in Graphene Membranes	47.041	36	-
NSF	CBET-1936696	Single Molecule Studies of Topologically Complex Polymers	47.041	22,094	-
NSF	CBET-2001231	Flexible Optoelectronic Systems for Chronic Bi-Directional Neural Interfacing	47.041	197,981	-
NSF	CBET-2019245	Collaborative Research: Scale-free continuum percolation of bubbles as a universal mechanism of the boiling crisis	47.041	68,685	-
NSF	CBET-2027870	Collaborative Research: Unraveling the Spatiotemporal Dynamics of Inertio-Elastic Turbulence using Measurements and Data-Infused Simulations	47.041	63,993	-
NSF	CBET-2034742	Collaborative Research: Crossing the percolation threshold for selective gas transport using interconnected crystals of metal–organic frameworks in polymer-based hybrid membranes	47.041	73,607	-
NSF	CBET-2034902	Collaborative Research: Creep-enabled 3D solid-state lithium metal batteries	47.041	1,582	-
NSF	CBET-2045868	CAREER: Elucidation and Development of Electrolyte and Interface Mechanisms Governing Calcium Redox in Nonaqueous Environments	47.041	76,366	-
NSF	CBET-2124194	Developing Nanosensor Chemical Cytometry (NCC) to Support the Development of Cellular Therapeutics	47.041	97,755	-
NSF	CBET-2139277	Collaborative proposal: Advancing turbidity currents: moving sources, polydispersity and aggregation	47.041	47,523	-
NSF	CBET-2140775	Career: Information-Theoretic Approach to Turbulence: Causality, Modeling & Control	47.041	79,744	-

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Federal Agency	Government Contract Number	Master Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NSF	CBET-2143625	CAREER: Efficient Uncertainty Quantification in Turbulent Combustion Simulations: Theory, Algorithms, and Computations	47.041	125,814	-
NSF	CBET-2146422	CAREER: Systematic Design of Polymers to Reveal the Anomalous Role of Fluorine on Membrane-based Separations	47.041	139,858	-
NSF	CBET-2226053	Modeling Coriolis and stability effects on wake dynamics for wind farm flow control	47.041	74,548	-
NSF	CMMI-1644558	CM/Collaborative Research: A Computational Approach to Customizing Design	47.041	28,512	-
NSF	CMMI-1727239	An Optimization Framework for Optimal A-B Testing	47.041	-205	-
NSF	CMMI-1729304	DMREF:GOALI: Discovery and Design of Additives for Novel Polymer Morphology and Performance	47.041	128,862	-
NSF	CMMI-1752172	CAREER: Directed Epitaxial Assembly of Structural Biopolymers in Hierarchical Mesostructures for Enhanced Mechanical Behavior, Mass Transport and Heat Transfer.	47.041	66,887	-
NSF	CMMI-1760025	Electrochemical separation and recovery of metals from liquid alloys	47.041	3,629	-
NSF	CMMI-1824297	AN INTEGRATED EXPERIMENTAL AND COMPUTATIONAL PLATFORM FOR DISCOVERY AND PROCESSING OF FUNCTIONAL NANO-EMULSIONS	47.041	96,533	-
NSF	CMMI-1826097	Collaborative Research: Learning to Control Dynamically Complex Objects	47.041	33,705	-
NSF	CMMI-1854833	Hybrid Intelligence for Design: Bridging Human and Machine Intelligences for Collaborative Design of Engineering Systems and Infrastructure	47.041	89,398	-
NSF	CMMI-1922206	DMREF: Collaborative Research: Fundamentals of short-range order-assisted alloy design: Thermodynamics, kinetics, mechanics	47.041	365,101	-
NSF	CMMI-1933416	Collaborative Research: Wettability Control on the Mechanics of Hydrocapillary Fracture	47.041	30,473	-
NSF	CMMI-1942016	Career: Shear Shock Propagation and Damage in Soft Materials	47.041	83,979	-
NSF	CMMI-2021625	NSF CMMI: Dual Faceted Linearization and Its Application to Nonlinear MPC	47.041	132,959	-
NSF	CMMI-2026444	FW-HTF-P Shaping Technology and Institutions for the Work of the Future	47.041	92,069	-
NSF	CMMI-2039771	D-ISN: TRACK 1: Supply Chain Analysis to Thwart Illegal Logging: Machine Learning-based Monitoring and Strategic Network Inspection	47.041	248,031	-
NSF	CMMI-2045417	CAREER: Integrated Design and Digital Fabrication using Topology Optimization and Material Extrusion 3D Printing	47.041	95,382	-
NSF	CMMI-2114343	Collaborative Research: Interfacial Photopolymerization (IPP): A Method For High-Resolution Digital Printing of Thermoplastics	47.041	142,217	-

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Federal Agency	Government Contract Number	Master Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NSF	CMMI-2135846	EAGER – Transfer by Contact using Adhesion Engineering for Integration of Two-Dimensional Materials into Functional Devices	47.041	28,979	-
NSF	CMMI-2142460	COVID-19: CAREER: Performance through Curvature-Mechanics of 3D Self-Architected Materials	47.041	62,211	-
NSF	CMMI-2154151	Hydrodynamic quantum analogs	47.041	195,208	-
NSF	CMMI-2236708	CAREER: Achieving insect-like flight capabilities in a novel soft-actuated micro-aerial-robot	47.041	12,504	-
NSF	CMMI-2240309	EAGER: Quantum Manufacturing: Bottom-up Molecular Qubit Arrays using DNA Origami	47.041	9,794	-
NSF	ECCS-1653553	CAREER: Spin-Orbit Interaction based Spintronics in Superconductors	47.041	5,497	-
NSF	ECCS-1808692	Model Reduction of High Dimensional Hidden Markov Models and Markov Decision Processes	47.041	59,647	-
NSF	ECCS-1824360	Tag-of-Everything: Secured Wireless Powering and Communication Using THz Spectrum for Ultra-Small, Package-Less ID Chips	47.041	80,018	-
NSF	ECCS-1933556	Collaborative Research: Quantum Communication with Loss-Protected Photonic Encoding	47.041	6,815	-
NSF	ECCS-2000743	Collaborative Research: Kinetic Inductance in Superconducting Nanowire Microwave Devices	47.041	90,986	-
NSF	ECCS-2002570	EAGER: Fundamentals of Modeling and Control for the Evolving Electric Power System Architectures	47.041	226,250	-
NSF	ECCS-2012258	Development of Room Temperature Terahertz Quantum Cascade Lasers	47.041	66,372	57,282
NSF	ECCS-2023468	Collaborative Research: Scaling Distributed AI Systems based on Universal Optical I/O	47.041	107,789	-
NSF	ECCS-2023987	Collaborative Research: Tellurene mid-infrared integrated photonics	47.041	117,606	-
NSF	ECCS-2026344	Conformable systems for spatiotemporal decoding of facial strains	47.041	34,179	-
NSF	ECCS-2028199	PIC: CMOS-compatible, monolithic, and high-performance optical isolators on silicon	47.041	135,450	-
NSF	ECCS-2028824	EAGER SARE: Physical-Layer Security of THz Communication Using Orbital Angular Momentum and Rapid Frequency Hopping	47.041	134,467	-
NSF	ECCS-2029670	SWIFT: LARGE: Adaptive Radio Frequency Interference Cancellation for Radio Science Observatories	47.041	288,508	-
NSF	ECCS-2044688	CAREER: Conformable Piezoelectrics for Soft Tissue Imaging	47.041	193,209	-
NSF	ECCS-2114439	EAGER: Modeling and Control of COVID-19 Transmission in Indoor Environments	47.041	19,920	-
NSF	ECCS-2128555	2128555 - Collaborative Research: SWIFT:Facilitating Spectrum Access by Noise Guessing	47.041	127,224	-

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Federal Agency	Government Contract Number	Master Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NSF	ECCS-2132929	ASCENT: PROWESS: Phase-change Reconfigurable Optical WavEfront Synthesis System	47.041	369,474	141,252
NSF	ECCS-2152528	ECCS-EPSRC: Collaborative: Acoustically induced Ferromagnetic Resonance (FMR) assisted Energy Efficient Spin Torque memory devices	47.041	139,067	-
NSF	ECCS-2239525	CAREER: Integrated Visible-Light Optical-Phased-Array-Based Devices, Systems, and Applications	47.041	9,207	-
NSF	ECCS-2316675	CAREER: DATA-DRIVEN DYNAMIC ADAPTIVE OPTIMIZATION FOR NEXT GENERATION	47.041	33,898	-
NSF	EEC-2124319	Planning Grant: Engineering Research Center for Connected Eldercare	47.041	63,307	9,530
NSF	EFMA-1830901	EFRI C3 SoRo: Soft, Strong, and Safe Configurable Robots for Diverse Manipulation Tasks	47.041	77,382	35,871
NSF	EFMA-1935291	EFRI C3 SoRo: Functional-Domain Soft Robots (FunDo SoRo) Precisely Controlled by Quantitative Dynamic Models and Data	47.041	333,138	-
NSF	IIP-1735671	Type II: MIT Innovation Corps Site	47.041	21,483	-
NSF	IIP-1832931	I-Corps New England Regional Innovation Node (NERIN)	47.041	884,324	2,388
NSF	IIP-1931623	I-Corps Teams: Reducing Exercise-Related Injuries with Fabric-Based Technologiees	47.041	3,679	-
NSF	IIP-1949121	I-Corps: Ultra-clear, transparent aerogel material developed to enable the next generation of energy efficient windows	47.041	9,471	-
NSF	IIP-2026063	I-Corps Teams: Aquaculture Diagnostics	47.041	13,739	-
NSF	IIP-2028103	I-Corps Teams: ARISE: Autonomous Distributed Systems	47.041	36,211	-
NSF	IIP-2035836	I-Corps Teams: OxyTrack: Quantitative Tissue Oxygen Sensors	47.041	34,809	-
NSF	IIP-2043000	I-Corps: Low carbon method of hydrogen gas production from hydrogen sulfide	47.041	10,234	-
NSF	IIP-2044424	Partnerships for Innovation-Research Partnerships (PFI-TT): The TACO Sparse Tensor Algebra Compiler	47.041	97,435	53,363
NSF	IIP-2044711	PFI-TT: Bridging the Information Gap in Supply Chain using Internet of Things (IoT)	47.041	8,744	-
NSF	IIP-2122581	PFI-RP: A high-performance, low-cost chip-scale platform for medical imaging	47.041	233,102	15,247
NSF	IIP-2123323	I-Corps Teams: Membrane Materials for Efficient Gas and Vapor Separations	47.041	6,580	-
NSF	IIP-2131399	I-Corps: Digital Phenotyping to Predict and Prevent Burnout in the Workplace	47.041	-2,032	-
NSF	IIP-2133778	I-Corps Teams: Digital twin technology via synthetic data generation	47.041	9,039	-

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NSF	IIP-2137197	I-Corps: Application of deep generative models for simulating biological systems	47.041	20,456	-
NSF	SMA-2022413	Innovation Dynamics of Emerging Co-Creation Practices: What are the impacts on Inclusion?	47.041	198,258	-
NSF	TI-2044711	PFI-TT: Bridging the Information Gap in Supply Chain using Internet of Things (IoT)	47.041	110,020	-
NSF	TI-2141118	Programmable lithography mask for accelerated innovation and advanced manufacturing of microchips	47.041	196,532	-
NSF	AST-1716251	Establishing the properties of the first stars and supernovae and the origins of the heaviest elements with stellar archaeology	47.049	67,260	-
NSF	AST-1751096	CAREER: Tracing the Birth and Growth of Galaxy Clusters with the South Pole Telescope 3rd Generation Survey	47.049	214,715	-
NSF	AST-1814053	Collaborative Research: Exploring the physics of galaxy clusters with comprehensive cosmological simulations	47.049	11,665	-
NSF	AST-1814259	Simulating galaxy formation with cosmic dust	47.049	42,082	-
NSF	AST-1828470	MRI [WINTER]: Development of a Wide-Field Infrared Camera for Robotic Surveys of the Dynamic Astronomical Sky	47.049	56,186	-
NSF	AST-1836002	LLAMAS: A Facility Integral Field Spectrograph for the Magellan Telescopes	47.049	322,192	-
NSF	AST-1909097	Exploring the LEGO Legacy Survey: Relating Galaxies observed by ALMA to the Milky Way	47.049	82,307	-
NSF	AST-1909307	Collaborative Research: EDGES-3: Validating and Refining Global 21cm Measurements of Cosmic Dawn	47.049	418,077	-
NSF	AST-1950348	REU/RET Site: Radio Science in Astronomy, Geodesy, and Geospace Science at MIT Haystack Observatory	47.049	174,619	-
NSF	AST-2007355	Collaborative Research: Discriminating Between Galactic Feedback Models with Next Generation Observations	47.049	70,701	-
NSF	AST-2008031	Collaborative Research: Cosmology with CHIME	47.049	161,109	-
NSF	AST-2107681	Imaging the Dynamic Atmospheres of Evolved Stars at Radio Wavelengths	47.049	74,809	-
NSF	AST-2107724	Collaborative Research: Constraining Fuzzy Dark Matter with Cosmological Simulations	47.049	3,760	-
NSF	AST-2205126	The GOTHAM Project: A New Window on Our Aromatic Universe	47.049	106,511	-
NSF	AST-2206731	Collaborative Research: WoU-MMA: Opening the Infrared Window into Multi-Messenger Astrophysics	47.049	49,520	-
NSF	AST-2309536	POLSTAR Survey: Magnetic Fields in Star Forming Filaments	47.049	61,932	-
NSF	AST-2309542	CoCoA: Cold Cores with the Atacama Large Millimeter/submillimeter Array (ALMA)	47.049	143,065	-

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NSF	CCF-2022448	Collaborative Research: National Institute for Foundations of Data Science	47.049	87,849	-
NSF	CHE-1654415	CAREER: Characterizing Water's Response to Hydrophilic Surfaces	47.049	28,854	-
NSF	CHE-1800301	Stochastic Path Integral Formalism and Applications to Coherent Energy Transfer	47.049	143,015	-
NSF	CHE-1800410	Molecular Rydberg Spectra Encode Intramolecular Dynamics	47.049	1,145	-
NSF	CHE-1836913	EAGER: Analog Quantum Simulation of Dissipative Quantum Dynamics in Condensed-Phase Chemical Systems	47.049	16,455	-
NSF	CHE-1839155	RAISE- TAQS: Room-Temperature Quantum Sensing and Computation using DNA-based Excitonic Circuits	47.049	102,786	-
NSF	CHE-1845464	CAREER: Reprogramming Transcriptional Regulation by Chemical Stabilization of Repressive Homodimers	47.049	220,346	-
NSF	CHE-1900060	Main Group Catalysts for N-H and O-H Activation Chemistry	47.049	-12,107	-
NSF	CHE-1900109	Exploration of Non-Equilibrium Interfacial Phenomena in Spin Forbidden Oxidation	47.049	111,995	-
NSF	CHE-1900391	New Cycloaddition and Annulation Strategies for Organic Synthesis	47.049	1,755	-
NSF	CHE-1904453	Collaborative Proposal: Investigation of Fundamental Properties and Electrical Control of Neurotransmitter Flow through Single-Walled Carbon Nanotubes	47.049	24,031	-
NSF	CHE-1904867	Expanding N-Heterocyclic Carbene Surface Chemistry	47.049	-3,703	-
NSF	CHE-1945500	CAREER: Fundamentals of conformational and surface water dynamics in supramolecular nanofibers	47.049	48,946	-
NSF	CHE-1955612	Synthesis of d- and p-Block Element Molecules, Reagents, and Precursors	47.049	155,975	-
NSF	CHE-2029751	COVID-19: Collaborative Research: RAPID: Augmenting Mucosal Gels with Associating Brush Polymers to Prevent COVID19 Infection	47.049	46	-
NSF	CHE-2102669	Electrosynthesis via Electrochemical Hydrogen Permeation	47.049	154,348	-
NSF	CHE-2108357	Designing Bright and Fast Fluorophores with Large Stokes' Shifts Based on Superradiant Molecular J-Aggregates	47.049	183,656	-
NSF	CHE-2108811	Reactivity of organic radicals in the atmospheric aqueous phase	47.049	232,240	-
NSF	CHE-2144153	CAREER: Development of Novel Domain-Tailored Machine Learning Tools for Organic Reaction Development and Discovery	47.049	162,662	-
NSF	CHE-2154938	Bootstrap Embedding for Molecules, Materials and Electrocatalysis	47.049	175,294	-
NSF	CHE-2203951	Analysis and Optimization of Polymer Networks for Emerging Applications	47.049	65,349	-

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Federal Agency	Government Contract Number	Master Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NSF	CHE-2247685	Nonspectator Phosphorus Ligands for Catalysis	47.049	39,896	-
NSF	DMR-1419807	NSF Materials Research Science and Engineering Centers (MRSEC) - Full Proposal	47.049	-379,481	-
NSF	DMR-1645232	2016 Alan T. Waterman Award	47.049	64,586	-
NSF	DMR-1654548	CAREER: Quantifying Radiation Damage in Metals with Wigner Energy Spectral Fingerprints	47.049	-1,459	-
NSF	DMR-1708280	FORCES & FLUCTUATIONS OUT OF EQUILIBRIUM	47.049	61,918	-
NSF	DMR-1709315	Dynamics of Associative Polymers Revealed by Self-Diffusion	47.049	46,886	-
NSF	DMR-1743059	Convergence QL: NSF/DOE Quantum Science Summer School	47.049	39,037	-
NSF	DMR-1751736	CAREER: Fundamentals of complex chalcogenide electronic materials	47.049	23,824	-
NSF	DMR-1751739	CAREER: FRACTAL ELECTRONIC TEXTURES IN QUANTUM CRITICAL SOLIDS	47.049	156,350	-
NSF	DMR-1808190	Rare earth garnets for spintronics	47.049	-17,424	-
NSF	DMR-1809740	Synthesis and Applications of Functional Carbon Nanomaterials	47.049	-3,243	-
NSF	DMR-1809802	Tuning the Electronic and Topological Properties of Twisted van der Waals Heterostructures	47.049	228,422	-
NSF	DMR-1809815	Probing Chiral Fermion Dynamics in Topological Semimetals	47.049	5,261	-
NSF	DMR-1847861	CAREER: Strongly correlated systems through the lens of topological phases	47.049	120,419	-
NSF	DMR-1905164	Scalable Quantum Emitters Enabled through Rational Bottom-Up Synthesis	47.049	-21	-
NSF	DMR-1911666	Novel Phases of Electronic Insulators and Quantum Hall Systems	47.049	65,747	-
NSF	DMR-1911792	Epitaxial Ceramic Nanocomposites by Design	47.049	94,946	-
NSF	DMR-1922311	DMREF: Collaborative Research: The Synthesis Genome: Data Mining for Synthesis of New Materials	47.049	115,140	-
NSF	DMR-1923976	Collaborative Research: Traversals in Transformation Strain Space and Microstructure Design for High Performance Ferroelastic Materials	47.049	-2,132	-
NSF	DMR-2002860	Entropy and Phase Transformations in Stable Nanocrystalline Alloys	47.049	297,182	-
NSF	DMR-2004556	Collaborative Research: Improving contact fatigue and wear properties using graded nanostructured surfaces in metallic materials	47.049	31,098	-
NSF	DMR-2004913	GOALI: Frictional Ignition of Metals in High-Pressure Oxygen Environments	47.049	160,574	-
NSF	DMR-2022428	Entanglement and emergence in quantum states of matter	47.049	155,558	-
NSF	DMR-2104912	Interactions between spin wave and magnetic domain structures	47.049	64,945	-

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Federal Agency	Government Contract Number	Master Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NSF	DMR-2104964	NSF-BSF: Development and Study of Lattice-Derived Flat Band States	47.049	149,515	-
NSF	DMR-2105495	Singlet Fission, Triplet Upconversion, and Thermally-Activated Delayed Fluorescence: Controlling Exciton Dynamics with Metal-Organic Frameworks	47.049	142,403	-
NSF	DMR-2117609	MRI: Acquisition of a Next Generation Nanofabrication Dual-beam Platform	47.049	699,038	-
NSF	DMR-2118448	Collaborative Research: DMREF: Symmetry-Guided Machine Learning for the Discovery of Topological Phononic Materials	47.049	225,824	-
NSF	DMR-2118678	Collaborative Research: DMREF: Designer Mesoscale Materials Synthesized in the Self-Assembly Foundry	47.049	322,692	-
NSF	DMR-2119076	Collaborative Research: DMREF: Developing Damage Resistant Materials for Hydrogen Storage and Large-scale Transport.	47.049	75,949	-
NSF	DMR-2132623	Ferroelectricity emerging from antisite defects in complex oxides	47.049	143,061	-
NSF	DMR-2132647	EAGER: SUPER: Electrochemical Protonation to Achieve Superconducting Matter	47.049	79,325	-
NSF	DMR-2144136	COVID-19: CAREER: Designer Halide Perovskite Nanocrystals with Controlled Light-Matter Interactions for On-Demand Quantum Light Sources	47.049	105,903	-
NSF	DMR-2204222	Brush Particle-Based Building Blocks for High Refractive Index Composites	47.049	240,701	-
NSF	DMR-2204638	Collaborative Research: Martensitic Transformations in Paraelectric Shape Memory Ceramics Activated by an Electric Field	47.049	61,619	-
NSF	DMR-2206305	Novel Phases of Electronic Insulators and Quantum Hall Systems	47.049	159,630	-
NSF	DMR-2207299	Carbon-based nanocomposites for sensing and catalysis	47.049	227,036	-
NSF	DMR-2214021	Collaborative Research: DMREF: Foundations of programmable living materials through synthetic biofilm engineering and quantitative computational modeling	47.049	73,469	-
NSF	DMR-2218550	Correlated Quantum Phenomena at Superconductor/Magnetic Interfaces	47.049	178,391	-
NSF	DMR-2218849	NSF-BSF: Fluctuation phenomena out of equilibrium	47.049	33,224	-
NSF	DMR-2220706	High-Pressure Synthesis of Missing Pnictide Superconductors	47.049	103,897	-
NSF	DMR-2224948	Collaborative Research: Developing metal-organic molecular beam epitaxy (MOMBE) for chalcogenide semiconductor thin film synthesis	47.049	70,074	-
NSF	DMR-2225925	Optical Study of Electron Correlation in Graphene-Based Moire Superlattices	47.049	395,029	-
NSF	DMR-2225968	Collaborative Research:Combinatorial solution processing of optical phase change materials	47.049	32,499	-

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Federal Agency	Government Contract Number	Master Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NSF	DMR-2226519	Time Resolved Probing of Unconventional Orders in Novel Kagome Metals	47.049	122,357	-
NSF	DMR-2237244	CAREER: Probing Quantum Matter using Programmable Quantum Simulators	47.049	28,648	-
NSF	DMR-2240994	Collaborative Research: Remote epitaxy on van der Waals materials: unveiling adatom interaction, growing single-crystal membranes, and producing unconventional heterostructures	47.049	70,134	-
NSF	DMS-1601946	Topics in arithmetic geometry	47.049	11,133	-
NSF	DMS-1651995	CAREER: Gaussian Graphical Models: Theory, Computation, and Applications	47.049	215,858	-
NSF	DMS-1712862	Universal randomness in 2D	47.049	-10,392	-
NSF	DMS-1749858	CAREER: Classical and quantum chaos	47.049	94,796	-
NSF	DMS-1760264	FRG: Collaborative Research: Algebra and geometry behind link homology	47.049	-954	-
NSF	DMS-1764370	Combinatorics in Algebra, Geometry, and Physics	47.049	35,879	-
NSF	DMS-1811267	Non-compact solutions to geometric flows	47.049	14,629	-
NSF	DMS-1812142	Evolution equations in geometry	47.049	11,135	-
NSF	DMS-1845034	CAREER: Higher enumerative geometry via representation theory and mathematical physics	47.049	97,298	-
NSF	DMS-1853981	Colored Stochastic Vertex Models	47.049	118,246	-
NSF	DMS-1855773	Mathematical Sciences:Geometric methods in the representation theory of affine Hecke algebras, finite reductive groups and character sheaves	47.049	6,773	-
NSF	DMS-1901642-001	Algebraic cycles and L-values	47.049	101,876	-
NSF	DMS-1904997	Lefschetz fibrations, their noncommutative counterparts, and formal groups	47.049	-1,712	-
NSF	DMS-1906072	Classical methods in motivic homotopy theory	47.049	39,253	-
NSF	DMS-1916120	PRIMES, MathROOTS, and CrowdMath: Expanding Opportunities for High School Students	47.049	21,641	-
NSF	DMS-1940092	CAREER: Phase Transitions in Randomized Combinatorial Search and Optimization Problems	47.049	156,345	-
NSF	DMS-1944952	CAREER: Differential Equations, Algebraic Geometry and String Theory	47.049	35,550	-
NSF	DMS-1952706	Collaborative Research: Optimal-complexity spectral methods for complex fluids	47.049	49,021	-
NSF	DMS-1953945	Probabilistic and analytic aspects of the Loewner energy	47.049	81,271	-
NSF	DMS-1953947	2020 - 2022 Talbot Workshops	47.049	29,608	-
NSF	DMS-1954455	Soliton dynamics for nonlinear wave equations	47.049	90,569	-

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Federal Agency	Government Contract Number	Master Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NSF	DMS-2001318	Tensor categories and representations of quantized algebras	47.049	115,638	-
NSF	DMS-2004589	Nonlinear Analysis of Three-Dimensional Water-Wave Patterns via Exponential Asymptotics	47.049	84,365	-
NSF	DMS-2005345	Dynamics and singularities of geometric flows	47.049	172,150	-
NSF	DMS-2015517	Inference in High-Dimensional Statistical Models. Algorithmic Tractability and Computational Barriers	47.049	53,221	-
NSF	DMS-2022448	Collaborative Research: National Institute for Foundations of Data Science	47.049	832,441	107,762
NSF	DMS-2044606	CAREER: Analytic and Spectral Methods in Combinatorics	47.049	60,208	-
NSF	DMS-2052651	FRG Collaborative: New challenges in the derivation and dynamics of quantum systems	47.049	157,705	-
NSF	DMS-2054129	Combinatorics and its Applications	47.049	32,301	-
NSF	DMS-2100157	Algebraic and Probabilistic Methods in Extremal Combinatorics	47.049	32,247	-
NSF	DMS-2101040	Integral points on stacks, hyperplane sections over finite fields, and vectors forming rational angles	47.049	124,315	-
NSF	DMS-2101507	Sheaves, representations and dualities	47.049	155,221	-
NSF	DMS-2104349	Evolution equations in geometry and related fields	47.049	138,636	-
NSF	DMS-2105512	New tools for gauge theory in dimensions 3 and 4	47.049	85,907	-
NSF	DMS-2133851	Collaboration Research: Probabilistic, Geometric, and Topological Analysis of Neural Networks, From Theory to Applications	47.049	61,280	-
NSF	DMS-2134108	Collaborative Research: Foundations of Deep Learning: Theory, Robustness, and the Brain	47.049	263,284	-
NSF	DMS-2153661	Geometry and Integrability of Random Processes	47.049	52,162	-
NSF	DMS-2153741	Representations of finite reductive groups, character sheaves and theory of total positivity	47.049	64,149	-
NSF	DMS-2153742	Random Surfaces and Related Questions	47.049	58,085	-
NSF	DMS-2203455	The nearby Lagrangian conjecture from the K-theoretic viewpoint	47.049	230	-
NSF	DMS-2206085	Mean-field and Singular Limits of Deterministic and Stochastic Interacting Particle Systems	47.049	5,713	-
NSF	DMS-2211020	Summer Geometry Initiative 2022	47.049	49,604	-
NSF	DMS-2211916	Collaborative Research: Deformations of Geometric Structures in Current Mathematics	47.049	11,027	-
NSF	DMS-2218846	PRIMES Experience: Broadening Math Research and Enrichment Options for High School Students	47.049	146,682	-
NSF	DMS-2222375	Conference: Young Topologists Meeting 2022	47.049	25,182	-
NSF	DMS-2301050	Iterative Algorithms for Statistics: From Convergence Rates to Statistical Accuracy	47.049	250,946	-

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Federal Agency	Government Contract Number	Master Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NSF	OMA-1936263	QII-TAQS Characterizing and Utilizing 2D Van der Wals Materials with Superconducting Quibits	47.049	733,003	128,885
NSF	PHY-1506369	A Program in Ultralow-Temperature Atomic Physics	47.049	261,610	-
NSF	PHY-1626069	MRI: Development of the IsoDAR Front-End	47.049	309,453	307,000
NSF	PHY-1654168	CAREER: Magnetogenesis Revisited: The First Self-consistent Plasma Dynamo	47.049	21,974	-
NSF	PHY-1707549	Studies of strong-gravity binaries and their gravitational waves	47.049	-4,503	-
NSF	PHY-1707999	Inferring the Physics of mRNA Trafficking in Neuronal Systems	47.049	148,413	-
NSF	PHY-1734011	Center for Ultracold Atoms	47.049	1,675,467	706,493
NSF	PHY-1806765	Many-body entanglement for precision measurement	47.049	-1,336	-
NSF	PHY-1836814	Collaborative Proposal: The Next Generation of Gravitational Wave Detectors	47.049	556	-
NSF	PHY-1848247	CAREER: Symmetry and Geometry in Biological Active Matter	47.049	148,095	-
NSF	PHY-1904160	LHCb operations and computing	47.049	588,908	-
NSF	PHY-1904160-001	LHCb operations and computing	47.049	212,054	56,787
NSF	PHY-1912764	The PA-Supported Neutrino Program at MIT	47.049	191,440	-
NSF	PHY-1912836	SEARCHING FOR PHYSICS BEYOND THE STANDARD Model AT THE LHCB EXPERIMENT	47.049	-1,282	-
NSF	PHY-1914418 000	WoU-MMA: Collaborative Research: A Next-Generation SuperNova Early Warning System for Multimessenger Astronomy	47.049	136,929	-
NSF	PHY-1915218	Quantum simulation of out-of-equilibrium spin models	47.049	98,735	-
NSF	PHY-2010136	The Dynamic Onset of Magnetic Reconnection	47.049	93,432	-
NSF	PHY-2011905	Cosmic Censorship from Gauge/Gravity Duality	47.049	114,453	-
NSF	PHY-2012088	Quantum optomechanics: from fundamental tests to quantum tools of the future	47.049	399,366	-
NSF	PHY-2012110	Strongly interacting quantum mixtures of ultracold atoms	47.049	254,927	-
NSF	PHY-2015620	Summer School and Workshop on Genome Architecture and Function	47.049	158,630	-
NSF	PHY-2019786	AI Institute: AI Research Institute for Fundamental Interactions	47.049	4,129,994	942,494
NSF	PHY-2028125	Composable Next Generation Software Framework for Space Weather Data Assimilation and Uncertainty Quantification	47.049	768,572	276,373
NSF	PHY-2033046	RAPID: Identifying the role of mucus in COVID-19 pathogenesis	47.049	-1,240	-
NSF	PHY-2035015	EAGER: QSA: Accelerating lattice quantum field theory calculations via interpolator optimization using NISQ-era quantum computing	47.049	9,289	-
NSF	PHY-2045740	CAREER: Populations and systematic uncertainties in the era of the advanced gravitational-wave detectors	47.049	20,829	-

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Federal Agency	Government Contract Number	Master Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NSF	PHY-2108050	Developing Pulsed Power Driven Turbulent Reconnection Platforms	47.049	338,184	-
NSF	PHY-2110384	Studies of strong-gravity binaries and their gravitational waves	47.049	114,725	-
NSF	PHY-2110535	Collaborative Research: Quantum-Coherent Interactions between Free and Guided Electrons and Photons	47.049	152,533	-
NSF	PHY-2110569	New Experimental Techniques For Neutrino Physics	47.049	192,210	-
NSF	PHY-2110720	Rare Event Searches at MIT	47.049	192,078	-
NSF	PHY-2207367	Microscopy of ultracold magnetic quantum fluids	47.049	162,535	-
NSF	PHY-2207387	Collaborative Research: A Data Challenge for the Next Generation of Ground-Based Gravitational Wave Detectors	47.049	3,549	-
NSF	PHY-2207942	Opening the Gravitational-Wave Band below 30 Hz for LIGO and Cosmic Explorer	47.049	165,007	12,418
NSF	PHY-2207996	PM: Search for New Physics Beyond the Standard Model through Precision Isotope Shift Measurements	47.049	211,543	-
NSF	PHY-2208004	A Program in Ultralow-Temperature Atomic Physics	47.049	466,718	-
NSF	PHY-2209181	NSF-BSF: Searching for Physics Beyond the Standard Model at the LHCb Experiment	47.049	226,333	-
NSF	PHY-2210558	NSF-ANR: Physics of chromosomes through mechanical perturbations	47.049	37,384	-
NSF	PHY-2213898	EAGER: Radiatively Cooled Magnetic Reconnection on Z	47.049	74,957	-
NSF	PHY-2228849	Conference: Physics and Astrophysics at the Extreme (PAX) Workshop	47.049	7,182	-
NSF	AGS-1835576	Collaborative Research: Framework: Software: HDR: Data-Driven Earth System Modeling	47.050	303,761	-
NSF	AGS-1848863	Collaborative Research: Understanding the role of coupled chemistry-climate interactions in internal climate variability	47.050	146,738	-
NSF	AGS-1906719	Advancing the Understanding of the Impacts of Wave-Induced Temperature Fluctuations On Atmospheric Chemistry	47.050	91,561	-
NSF	AGS-1906768	Collaborative Research: Physics of and Climate Regulation by Convective Aggregation	47.050	8,880	-
NSF	AGS-1914920	Collaborative Research: Integrating GEOS-Chem atmospheric chemistry into the NCAR Community Earth System Model (CESM)	47.050	87,005	-
NSF	AGS-1933005	Collaborative Research: DASI Track 1: Development of a Distributed MIMO Meteor Radar Network for Space Weather Research	47.050	130,637	-
NSF	AGS-1936642	Integrating Observational Constraints and Modeling of Atmospheric Reactive Organic Carbon	47.050	200,873	-
NSF	AGS-1945871	The Global Circuits Paradox	47.050	233,376	50,012

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Federal Agency	Government Contract Number	Master Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NSF	AGS-1952737	Scientific and Technical Discovery at the Millstone Hill Geospace Facility	47.050	2,350,768	-
NSF	AGS-2025481	STEVE Community Workshop: Advancing Understanding of a New Atmospheric Phenomenon	47.050	25,389	-
NSF	AGS-2031472	Improved understanding of the moist dynamics of the extratropical storm tracks and their response to climate change	47.050	121,781	-
NSF	AGS-2031999	Geospace Facilities: Improving Millstone Geospace Radar Performance and Lifetime	47.050	439,717	-
NSF	AGS-2033787	Collaborative Research: CEDAR: Three-dimensional large electron density gradients at mid-latitudes from a TEC-based ionospheric data assimilation system (TIDAS)	47.050	61,580	-
NSF	AGS-2102975	Collaborative Research: Madagascar Caves and Paleoclimate II (MADCAP II), Continuing Investigation of climate variability in the Southern Hemisphere of the Western Indian Ocean	47.050	67,387	-
NSF	AGS-2102976	Collaborative Research: P2C2: Speleothem constraints on seasonal hydroclimate variability in Mainland Southeast Asia since the late Pleistocene	47.050	36,703	-
NSF	AGS-2128617	Improving the Understanding of Halocarbon Lifetimes and Emissions	47.050	108,843	-
NSF	AGS-2129835	Collaborative Research: Laboratory Studies of the Role of RO2 Chemistry on the Evolution of Atmospheric Organic Carbon	47.050	140,905	-
NSF	AGS-2140793	NSF-BSF Collaborative Proposal: Improved understanding of the tropospheric response to zonal asymmetry of the stratospheric polar vortex and its application to S2S prediction	47.050	54,510	-
NSF	AGS-2149698	Collaborative Research: ANSWERS: Impacts of Atmospheric Waves and Geomagnetic Disturbances on Quiet-time and Storm-time Space Weather	47.050	34,535	-
NSF	AGS-2202785	Collaborative Research: Assessing climate and stochastic forcing of North Atlantic tropical cyclone activity over the past millennium	47.050	50,868	-
NSF	AGS-2223070	Exploring the impact of future land use change on global air quality and nutrient deposition	47.050	16,767	-
NSF	AGS-2228379	Collaborative Research: Development and applications of GEOS-Chem atmospheric chemistry in CESM and MUSICA	47.050	21,217	-
NSF	EAR-1753482	Melt Network Geometry in Stressed, Partially Molten Mantle Rocks: Implications for Seismic Anisotropy	47.050	4	-
NSF	EAR-1843686	Community Facility Support for GNSS Data Analysis with GAMIT/GLOBK	47.050	42,828	-
NSF	EAR-1852946	Methane isotopologue fractionation during microbial methanogenesis and methonotrophy by pure and mixed laboratory cultures	47.050	72,420	-

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Federal Agency	Government Contract Number	Master Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NSF	EAR-1854564	Impact of vegetation geometry and distribution on bedload transport	47.050	85,734	-
NSF	EAR-1902179	Constraining the Nature and Formation Age of the Shyok Suture Zone in Ladakh, NE India	47.050	179,742	-
NSF	EAR-1903544	Collaborative Research: Regional hydrologic and vegetation changes over the last 150 kyr in the Searles and Death Valley basins	47.050	1,130	-
NSF	EAR-1905733	Collaborative Research: Development of a turnkey SQUID microscope platform for paleomagnetism and installation in a National Multi-User Facility	47.050	9,816	-
NSF	EAR-1923491	Collaborative Research: Hydrologic Disturbance in Tropical Peatlands: Linking Drainage, Soil Moisture, Flammability, and Carbon Fluxes	47.050	54,505	-
NSF	EAR-1925863	Collaborative Research: Do arc-continent collisions in the tropics set the Earth's climate state?	47.050	104,465	-
NSF	EAR-1948453	Laboratory Acquisition Protocols and Standards: A Standardized Digital Data System for Experimental Results	47.050	101,732	-
NSF	EAR-2021677	Collaborative Research: Modes of melt extraction in silicic mushes: processes, efficiency and timescales	47.050	154,140	-
NSF	EAR-2022928	Collaborative Research: Blueschist Rheology: Experimental Constraints On Glaucophane Strength And Deformation Mechanisms	47.050	58,599	-
NSF	EAR-2044806	Collaborative Research: High temporal resolution paleomagnetism of speleothems	47.050	38,369	-
NSF	EAR-2054414	Collaborative Research: Community Facility Support: Facilitating Access and Innovation through a Collaborative Organization for Rock Deformation (CORD)	47.050	68,937	-
NSF	EAR-2103408	Collaborative Research: What makes Low-Frequency Earthquakes low frequency?	47.050	62,676	-
NSF	EAR-2123254	Collaborative Research: The role of subducting seamounts in fault stability and slip behavior throughout the seismic cycle	47.050	28,229	-
NSF	EAR-2141316	Collaborative Research: Coupled flow-geomechanical models applied to assess earthquake triggering in tectonically active regions – The Los Angeles basin, CA	47.050	113,068	-
NSF	EAR-2221963	Collaborative Research: EAR Climate - Pairing calcium and clumped isotopes to inform carbon cycle and climate dynamics at the onset of the Late Paleozoic Ice Age	47.050	48,668	-
NSF	EAR-2240376	Collaborative Research: Seismic cycles and earthquake nucleation on heterogeneous faults: Large-scale laboratory experiments, numerical simulations, and Whillans ice stream	47.050	8,763	-

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Federal Agency	Government Contract Number	Master Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NSF	ICER-1854929	PREEVENTS Track 2: Collaborative Research: Predicting Hurricane Risk along the United States East Coast in a Changing Climate	47.050	37,689	-
NSF	OAC-1835618	Collaborative Research: Framework: Data: Toward Exascale Community Ocean Circulation Modeling	47.050	149,560	-
NSF	OCE-1736109	Collaborative Research: Deep Circulation over the Flanks of a Mid-Ocean Ridge	47.050	108,682	-
NSF	OCE-1736996	Collaborative Research: US GEOTRACES PMT: Pb and Cr isotopes	47.050	24,868	-
NSF	OCE-1756324	Collaborative Research: Bottom Boundary Layer Turbulent and Abyssal Recipes	47.050	54,386	-
NSF	OCE-1923312	Improving Accuracy and Precision of Marine Inorganic Carbon Measurements	47.050	108,645	-
NSF	OCE-1924050	Cr Isotope Oceanography of the Eastern Tropical North Pacific Ocean	47.050	13,935	-
NSF	OCE-2023520	Collaborative Research: Coupling of Trade Winds with the Ocean's Subtropical Cells	47.050	122,514	-
NSF	OCE-2048470	Features and implications of nitrogen assimilation trait variability in populations of Prochlorococcus	47.050	171,531	-
NSF	OCE-2124211	Collaborative Research: Towards a More Comprehensive Understanding of Eulerian and Lagrangian Transport of Active and Passive Tracers in the Ocean	47.050	17,915	-
NSF	OCE-2138890	COVID-19: EAGER: Testing the Galápagos as a long-term monitoring site for nitrous oxide emissions from the Pacific oxygen deficient zones	47.050	122,936	-
NSF	OCE-2140206	EAGER: Characteristic Disruptions of the Marine Carbon Cycle	47.050	115,256	-
NSF	OCE-2142998	CAREER: Carbon, nitrogen, and oxygen biogeochemistry at the scale of a sinking marine particle	47.050	17,959	-
NSF	OCE-2148468	US GEOTRACES GP17-OCE and GP17-ANT: Inorganic Carbon Cycling in the South Pacific and Southern Oceans by Direct Measurement	47.050	302,285	-
NSF	OCE-2148916	Collaborative Research: US GEOTRACES GP17-OCE and GP17-ANT: Pb Isotopes	47.050	105,060	-
NSF	CCF-1231216	A Center for Brains, Minds, and Machines: The Science and the Technology of Intelligence	47.070	2,541,492	901,385
NSF	CCF-1553428	CAREER: Fast Graph Algorithms and Continuous Optimization	47.070	77,875	-
NSF	CCF-1717842	CIF: Small: Fundamental limits and coding for massive wireless random-access	47.070	-2,447	-
NSF	CCF-1723344	AitF: Collaborative Research: Algorithms for Probabilistic Inference in the Real World	47.070	7,292	-

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Federal Agency	Government Contract Number	Master Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NSF	CCF-1729369	Collaborative Research: EPiQC: Enabling Practical-Scale Quantum Computation	47.070	346,905	53,223
NSF	CCF-1751011	CAREER: A Programming Language for Developing Software to Execute Reliably on Unreliable Hardware	47.070	179,766	-
NSF	CCF-1807575	SemiSynBio:Collaborative Research:Very large-scale genetic circuit design automation	47.070	-1,685	-
NSF	CCF-1810758	NSF-BSF: AF: Small: An Algorithmic Theory of Brain Networks	47.070	46,446	-
NSF	CCF-1814969	SHF: Small: A Scalable Architecture for Ubiquitous Parallelism	47.070	-10,785	-
NSF	CCF-1816209	CIF: Small: Occlusion-Based Computational Imaging and Scene Analysis: Theory, Methods and Applications	47.070	160,504	-
NSF	CCF-1845763	CAREER: Parallel Algorithms and Frameworks for Graph and Hypergraph Processing	47.070	25,139	-
NSF	CCF-1901292	AF: Medium: Collaborative Research: Theoretical Foundations of Deep Generative Models and High-Dimensional Distributions	47.070	64,116	-
NSF	CCF-1909429	AF:Small Average-Case Fine-Grained Complexity	47.070	2,539	-
NSF	CCF-1918421	Expeditions: Collaborative Research: Global Pervasive Computational Epidemiology	47.070	44,108	-
NSF	CCF-1918839	Expeditions:Understanding the World Through Code	47.070	967,312	-
NSF	CCF-1937501	RTML: Large: Co-design of Hardware and Algorithms for Energy-efficient Robot Learning	47.070	241,029	-
NSF	CCF-1940205	CAREER: Reducibility among high-dimensional statistics problems: information preserving mappings, algorithms, and complexity.	47.070	173,997	-
NSF	CCF-1941841	Workshop: Systems and Control Theory for Synthetic Biology	47.070	970	-
NSF	CCF-1943349	CAREER: Efficient Algorithms and Hardware for Accelerated Machine Learning	47.070	781	-
NSF	CCF-1955217	Collaborative Research: AF : Medium: Foundations of Structured Optimization	47.070	204,485	-
NSF	CCF-1955864	Collaborative Research: CNS: Occlusion and directional resolution in computational imaging	47.070	150,023	-
NSF	CCF-1956054	AF Medium: DNA-based Data Storage and Computing Materials	47.070	253,939	-
NSF	CCF-1956211	Collaborative Research: FET: Medium: Quantum Localization and Synchronization Networks	47.070	151,329	-
NSF	CCF-2003830	AF: Small: Distributed Algorithms for Dynamic, Noisy Platforms: Wireless Networks, Robot Swarms, and Insect Colonies	47.070	115,157	-
NSF	CCF-2006664	AF: Small: Sparsity in Local Computation	47.070	137,154	-
NSF	CCF-2006798	Collaborative Research: AF: Small: Fine-grained complexity of approximate problems	47.070	84,288	-

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Federal Agency	Government Contract Number	Master Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NSF	CCF-2007674	FET: Small: Robust and modular CRISPR/dCas9 transcriptional programs through regulated dCas9 generators	47.070	133,199	-
NSF	CCF-2028888	Collaborative Research: PPoSS: Planning: Principles for Edge Sensing and Computing for Personalized, Precision Healthcare at National Scale	47.070	96,678	-
NSF	CCF-2029016	Collaborative Research: PPoSS: Planning: Scalable Systems for Probabilistic Programming	47.070	4,737	-
NSF	CCF-2106377	Collaborative Research: CIF: Medium: Analysis and Geometry of Neural Dynamical Systems	47.070	15,014	-
NSF	CCF-2106711	Collaborative Research: SHF: Medium: Heterogeneous Architecture for Collaborative Machine Learning	47.070	344	-
NSF	CCF-2107244	Collaborative Research: SHF: Medium: Spatial Multi-Tenant Neural Acceleration for Next Generation Datacenters	47.070	237,780	-
NSF	CCF-2107373	Collaborative Research:SHF: Medium : Analog EDA Algorithmic Perspectives for Efficient and Robust Neural Network Design	47.070	38,557	-
NSF	CCF-2119340	Collaborative Research: PPoSS: LARGE: Principles and Infrastructure of Extreme Scale Edge Learning for Computational Screening and Surveillance for Health Care	47.070	149	-
NSF	CCF-2123864	Collaborative Research: FMitF: Track I:Composable Verification of Crash-Safe Distributed Systems with Grove	47.070	117,677	-
NSF	CCF-2127597	Lower Bounds in Complexity Theory Via Algorithms	47.070	125,911	-
NSF	CCF-2129139	AF: Small: Shortest Paths and Distance Parameters:Faster, Fault-Tolerant and More Accurate	47.070	150,856	-
NSF	CCF-2131115	Collaborative Research: CIF: Small: Low-Complexity Algorithms for Unsourced Multiple Access and Compressed Sensing in Large Dimensions	47.070	57,889	-
NSF	CCF-2131541	Collaborative Research: DASS: Legally Accountable Cryptographic Computing Systems (LAChS)	47.070	166,937	-
NSF	CCF-2139936	AF: Small: An Algorithmic Theory of Brain Behavior: Concept Representation and Learning in Spiking Neural Networks	47.070	72,722	-
NSF	CCF-2153230	NSF-IITP: CNS Core: Small: Quantum Communication and Sensing at Terahertz: A Path Toward 6G and Beyond	47.070	43,410	-
NSF	CCF-2217064	PPoSS: LARGE: Intel: Combining Learning and Formal Verification for Scalable Machine Programming (ScaMP)	47.070	591,607	-
NSF	CCF-2217099	Collaborative Research: PPoSS: LARGE: A Full-Stack Architecture for Sparse Computation	47.070	135,440	-
NSF	CCF-2217878	CAPA: Collaborative Research: ARION: Taming Heterogeneity with DSLs, Approximation, and Synthesis	47.070	93,105	-
NSF	CCF-2227876	AF: SMALL: On the Complexity of Satisfiable CSPs	47.070	52,224	-

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Federal Agency	Government Contract Number	Master Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NSF	CCF-2238030	CAREER: DeepCertify: Data-driven Formal Approach to Safe Autonomy	47.070	4,591	-
NSF	CCF-2238080	CAREER: Statistics through the Sum of Squares Lens	47.070	27,635	-
NSF	CCF-2310818	AF: SMALL: Extending the reach of distribution testing via structure	47.070	17,396	-
NSF	CCF-2328543	CAREER: The Exocompiler: Decoupling Algorithms from the Organization of Computation and Data	47.070	60,521	-
NSF	CMMI-2202477	Collision-resilient insect-scale soft aerial robots for collective flights in cluttered environments	47.070	99,935	-
NSF	CNS-1713725	NeTS: Small: Optimizing Information Freshness in Wireless Networks	47.070	37,926	-
NSF	CNS-1717199	NeTS: Small: Cognitive Management and Control of Agile Dynamic Optical Networks	47.070	-76	-
NSF	CNS-1735463	CRISP Type 2: Collaborative Research: Understanding the benefits and mitigating the risks of interdependence in critical infrastructure systems	47.070	205,494	-
NSF	CNS-1751009	CAREER: Data-Driven Network Resource Management Systems	47.070	114,412	-
NSF	CNS-1801399	SaTC: CORE: Medium: Collaborative: Bridging the Gap between Protocol Design and Implementation through Automated Mapping	47.070	121,462	-
NSF	CNS-1812522	SaTC:CORE:Small: verifying security for data non-interference	47.070	10,767	-
NSF	CNS-1815221	SaTC: CORE: Small: Towards Adversarially Robust Machine Learning	47.070	77,554	-
NSF	CNS-1837212	CPS:Medium: LEAR-CPS: Low-Energy computing for Autonomous mobile Robotic CPS via Co-Design of Algorithms and Integrated Circuits	47.070	20,101	-
NSF	CNS-1844280	CAREER: Wirelesss Sensing for In Vivo Medical Devices	47.070	304,366	-
NSF	CNS-1907905	CNS Core: Small: Wireless Network Control in Uncooperative and Adversarial Environments	47.070	164,699	-
NSF	CNS-1910676	CNS Core: Small: Network Architecture and Routing Protocols for Payment Channel Networks	47.070	842	-
NSF	CNS-1923130	CSforAll: RPP: Pathways for Advancing Computing Education	47.070	13,233	-
NSF	CNS-1925609	CCRI: Medium: Cilk Infrastructure for Next-Generation Parallel-Programming Research	47.070	729,241	-
NSF	CNS-1933486	Broadening Participation - I-Corps Northeast Regional Inclusion Summit	47.070	96,592	-
NSF	CNS-1946976	EAGER: Scalable Photonic AI Accelerators Based on Photoelectric Multiplication	47.070	14,609	-
NSF	CNS-1955270	Collaborative Research: SaTC: CORE: Medium: Hardening Off-the-Shelf Software Against Side Channel Attacks	47.070	19,835	-

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Federal Agency	Government Contract Number	Master Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NSF	CNS-1955370	Collaborative Research: CNS Core: Medium: Learning to Cache and Caching to Learn in High Performance Caching Systems	47.070	31,774	-
NSF	CNS-2002908	Collaborative Research: MLWiNS: Deep Neural Networks Meet Physical Layer Communications -- Learning with Knowledge of Structure	47.070	119,786	-
NSF	CNS-2006827	Collaborative Research: CNS Core: Small: Understanding Per-Hop Flow Control	47.070	24,303	-
NSF	CNS-2008624	Collaborative Research: CNS Core: Small: A Principled Framework for Workload Distribution Techniques in Large-Scale Networks	47.070	129,044	-
NSF	CNS-2044973	CAREER: Certifiable Perception for Autonomous Cyber-Physical Systems	47.070	165,066	-
NSF	CNS-2046359	CAREER: A Quantitative Framework for Analyzing and Mitigating Microarchitectural Side Channels	47.070	129,913	-
NSF	CNS-2054869	SaTC: CORE: Small: Practical private information retrieval	47.070	114,582	-
NSF	CNS-2104398	Collaborative: NGSDI: Foundations of Clean and Balanced Datacenters: Treehouse	47.070	83,155	-
NSF	CNS-2106268	Collaborative Research: CNS Core: Medium: Inference and Control in Overlay Networks	47.070	8,513	-
NSF	CNS-2115149	RAPID: Decentralization and Privacy for Secure Vaccination Coordination	47.070	183,976	-
NSF	CNS-2115587	SaTC: CORE: Medium: Provably Secure, Usable, and Performant Enclaves in Multicore Processors	47.070	293,095	-
NSF	CNS-2129970	Collaborative Research: Workshop to Develop a Roadmap for Greater Public Use of Privacy-Sensitive Government Data	47.070	26,596	-
NSF	CNS-2130671	SaTC: CORE: Small: Scaling Correct-by-Construction Code Generation for Cryptography	47.070	202,787	-
NSF	CNS-2144766	CAREER: Large-scale Dynamic Reconfigurable Networks	47.070	961	-
NSF	CNS-2144766	COVID-19: CAREER: Large-scale Dynamic Reconfigurable Networks	47.070	107,438	-
NSF	CNS-2148128	RINGS: Enabling Wireless Edge-cloud Services via Autonomous Resource Allocation and Robust Physical Layer Technologies	47.070	32,092	16,351
NSF	CNS-2148132	RINGS: Coding over High-Frequency for Absolute Post-Quantum Security (CHAPS)	47.070	352,116	131,909
NSF	CNS-2148251	RINGS: Resilient and Low-Latency Networks for Situation Awareness in the Factory of the Future	47.070	143,602	14,572
NSF	CNS-2149548	Collaborative Research: CPS: Medium: An Online Learning Framework for Socially Emerging Mixed Mobility	47.070	7,134	-
NSF	CNS-2154149	Collaborative Research: SaTC: CORE: Medium: Theoretical Foundations of Block Ciphers	47.070	80,364	-

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Federal Agency	Government Contract Number	Master Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NSF	CNS-2211382	Collaborative Research: CNS Core: Medium: A Stateful Switch Architecture for In-Network Compute	47.070	72,572	-
NSF	CNS-2212099	Collaborative Research: CNS Core: Medium: High-performance Network Stacks for the Edge	47.070	13,740	-
NSF	CNS-2212102	Collaborative Research: CNS Core: Medium: Robust Behavioral Analysis and Synthesis of Network Control Protocols Using Formal Verification	47.070	347,481	-
NSF	CNS-2219365	CSforAll: RPP: Programming the Acceleration of Computing and Equity in Massachusetts 2 (PACE2)	47.070	142,219	-
NSF	CNS-2225441	SaTC: CORE: Medium: Verifying Hardware Security Modules with Information-Preserving Refinement	47.070	115,360	-
NSF	CNS-2236700	EAGER: Developing design principles for network-scale applications derived from Internet thinking and the behavioral sciences.	47.070	129,014	-
NSF	DRL-1734443	NRI: INT: COLLAB: Development, Deployment and Evaluation of Personalized Learning Companion Robots for Early Literacy and Language Learning	47.070	3,153	-
NSF	ECCS-2230397	2022 IEEE CSS Workshop on Control for Societal-Scale Challenges	47.070	33,804	-
NSF	IIP-2023995	I-Corps Teams: Label-free Optical Imaging of the Lymphatic System for Anatomical Pathology, Image-guided Surgery, and Disease Screening.	47.070	-2,959	-
NSF	IIS-1553284	CAREER: Scalable learning with combinatorial structure	47.070	48,816	-
NSF	IIS-1718258	III:Small:A New Perspective on Grouped Variable Selection via Modern Optimization	47.070	8,055	-
NSF	IIS-1723381	S&AS:INT: Integrated Reasoning, Planning and Acting for Household Robots	47.070	53,421	-
NSF	IIS-1729931	Collaborative Research: Computational Photo-Scatterography: Unraveling Scattered Photons for Bio-imaging	47.070	210,260	-
NSF	IIS-1741341	BIGDATA: F: Collaborative Research: Towards automating data analysis: interpretable, interactive, and scalable learning via discrete probability	47.070	149,034	-
NSF	IIS-1750286	CAREER: Robust, scalable, reliable machine learning	47.070	136,121	-
NSF	IIS-1763434	III: Medium: Massively Parallel Data Analytics on Heterogeneous Architectures	47.070	210,321	-
NSF	IIS-1830282	NRI:INT:COLLAB: Collaborative Task Planning and Learning through Language Communication in a Human-Robot Team	47.070	72,068	-
NSF	IIS-1838071	BIGDATA:F: Statistical and Computational Optimal Transport for Geometric Data Analysis	47.070	167,187	-
NSF	IIS-1844406	CAREER: Adaptive Physical User Interfaces	47.070	49,069	-

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Federal Agency	Government Contract Number	Master Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NSF	IIS-1846088	CAREER: Modern nonconvex optimization for machine learning: foundations of geometric and scalable techniques	47.070	95,030	-
NSF	IIS-1900933	III: Medium: Learning-based Synthesis of Data Processing Engines	47.070	155,537	-
NSF	IIS-1900991	III: Large: Collaborative Research: Analysis Engineering for Robust End-to-End Data Science	47.070	242,116	-
NSF	IIS-1942659	CAREER: Effective Interaction Design for Data Visualization	47.070	20,539	-
NSF	IIS-1954886	CHS: Medium: Collaborative Research: Increasing Communication Rates through a Haptic Display of Speech	47.070	99,069	-
NSF	IIS-1955697	Collaborative Research: CHS: Medium: Discovery and Exploration of Design Trade-Offs	47.070	130,438	-
NSF	IIS-2006152	CHS:Small:Capturing Multisensory Interactions in Cutaneous Displays	47.070	69,877	-
NSF	IIS-2008116	Collaborative Research: CHS: Small: Learning Maker Skills By Building Game Props	47.070	200,779	-
NSF	IIS-2014391	SCH:INT: Collaborative Research: Deep Sense: Interpretable Deep Learning for Zero-effort Phenotype Sensing and Its Application to Sleep Medicine	47.070	374,163	-
NSF	IIS-2033792	Quantifying the Unknown Unknowns for Data Integration	47.070	126,590	-
NSF	IIS-2035018	EAGER: Neural Behavioral Analysis (NBA) Pipeline for Behavior and Neural Activity Analysis in Autism	47.070	-947	-
NSF	IIS-2105819	Collaborative Research: HCC: Medium: Differentiable Rendering for Computer Graphic	47.070	-7,644	-
NSF	IIS-2106962	Collaborative Research: HCC: Medium: Computational Design of Complex Fluidic Systems	47.070	302,716	-
NSF	IIS-2133072	Collaborative Research: NRI: Remotely Operated Reconfigurable Walker Robots for Eldercare	47.070	221,945	-
NSF	IIS-2151077	RI: Small: Modular structures in the brain and artificial learningsystems: emergence and function	47.070	106,649	-
NSF	IIS-2205320	Collaborative Research: SCH: Machine Learning Driven User Interfaces for Information Gathering and Synthesis from Medical Records	47.070	29,211	-
NSF	IIS-2212310	Collaborative Research: RI: Medium: Bootstrapping natural feedback for reinforcement learning	47.070	235,733	50,325
NSF	IIS-2213826	HCC: Small: Human-Centered Computing to Support Citizen Data Science on Gender-based Violence and in Other Domains	47.070	67,143	-
NSF	IIS-2214177	Robotics: Flexible manipulation without prior shape models	47.070	10,700	-
NSF	IIS-2301356	Collaborative Research: HCC: Small: Computational Design of Knitted Wearable Haptic Devices	47.070	11,956	-

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Federal Agency	Government Contract Number	Master Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NSF	OAC-1835443	Framework: Software: Next-Generation Cyberinfrastructure for Large-Scale Computer-Based Scientific Analysis and Discovery	47.070	866,695	93,518
NSF	OAC-1839159	RAISE TAQS: Very Large Scale Integrated Electronics and Photonics Platform for Scalable Quantum Information Processing	47.070	163,518	-
NSF	OAC-1931391	Frameworks: Collaborative Research: Extensible and community-driven thermodynamics, transport, and chemical kinetics modeling with Cantera: expanding to diverse scientific domains	47.070	30,632	-
NSF	OAC-1931469	Collaborative Research: Frameworks: Machine learning and FPGA computing for real-time applications in big-data physics experiments	47.070	266,149	-
NSF	OAC-1934700	Collaborative Research: Advancing Science with Accelerated Machine Learning	47.070	48,586	-
NSF	OAC-2004645	Collaborative Research : Elements : Extending the physics reach of LHCb by developing and deploying algorithms for a fully GPU-based first trigger stage	47.070	92,477	-
NSF	OAC-2041897	EAGER: Computer Progress and Economic Prosperity	47.070	-904	-
NSF	OAC-2103799	Collaborative Research: Elements: A Self-tuning Anomaly Detection Service	47.070	47,281	-
NSF	OAC-2103804	Collaborative Research: Frameworks: Convergence of Bayesian inverse methods and scientific machine learning in Earth system models through universal differentiable programming	47.070	945,219	-
NSF	OAC-2140453	The Technical foundations of prosperity	47.070	88,953	-
NSF	DEB-1924148	CNH2-S: Mercury Pollution and Human-Technical-Environmental Interactions in Artisanal Mining	47.074	198,163	113,349
NSF	DEB-2024349	EAGER: Bioforecasting: understanding and predicting species persistence in ecological communities under changing environments	47.074	30,523	-
NSF	EF-2125118	Collaborative Research: MIM: Partners in slime: Learning how mucus shapes and maintains microbiomes	47.074	198,562	-
NSF	IOS-1645061	IOS EDGE: Development of genetic tools for the dominant phototroph in the sea	47.074	-426	-
NSF	IOS-1845663	CAREER: Dissecting Neural Mechanisms of Behavioral State Control in C. elegans	47.074	163,678	-
NSF	IOS-2035181	EDGE-FGT: Genetic Tools for Picocyanobacteria that Dominate the Oceans	47.074	253,253	92,739
NSF	MCB-1652390	CAREER: Integrating Chem. Biology Methods & RNA Virus Models to Elucidate How the Metazoan Proteostasis Ntwk Modulates Protein Evolutionary Landscapes	47.074	-11,405	-
NSF	MCB-1817708	Multiplexing Autonomous Metabolite Valves	47.074	37,281	-
NSF	MCB-1840257	RoL:FELS:RAISE: Principles of Modular Organization in Resource-Limited Biological Circuits	47.074	89,462	-

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Federal Agency	Government Contract Number	Master Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NSF	MCB-1844668	CAREER: Cracking the Cleavage Code of RNase Y and Its Associated Y-Complex in Firmicutes	47.074	340,280	-
NSF	MCB-1943141	CAREER: Towards open and community-responsive ecological editing	47.074	128,958	12,667
NSF	MCB-2027165	Programmable Abiotic-Biotic Interface With planar DNA Nanopore Electrodes	47.074	794,994	464,078
NSF	MCB-2027949	Collaborative Research: MODULUS: Uncovering and re-engineering chromatin modification circuits that dictate epigenetic cell memory	47.074	288,267	-
NSF	MCB-2036037	PROTEIN REGULATORS OF 3D GENOME ARCHITECTURE: DYNAMICS, MECHANISM AND FUNCTION	47.074	330,481	-
NSF	MCB-2041555	Collaborative Research: Multidimensional single-cell phenotyping for elucidating genome to phenome relationships	47.074	91,421	-
NSF	MCB-2042362	CAREER: Chromatin Folding from the Bottom-up	47.074	255,163	-
NSF	MCB-2044895	Biophysics of Nuclear Condensates	47.074	1,108,382	852,596
NSF	MCB-2046778	CAREER: Developing novel structural techniques to untangle bacterial ribosome biogenesis	47.074	195,247	-
NSF	MCB-2116037	NSF-BSF: Sentinels: Viral First Responder Cells (VFRCs) for COVID-19 and Future Rapidly Emerging Infectious Diseases	47.074	345,195	-
NSF	MCB-2130687	BBSRC-NSF/BIO: Quantum-enhanced long-range energy capture	47.074	233,124	-
NSF	MCB-2218259	Collaborative Research: Poise under pressure: Developing strains with minimal genomes for integrated bioprocessing	47.074	131,874	-
NSF	MCB-2236194	Procollagen Assembly	47.074	168,166	-
NSF	MCB-2244770	EAGER: Leveraging Chaperones to Escape the Plant RuBisCO Catalytic Catch-22	47.074	58,756	-
NSF	BCS-1724135	CRCNS US-German-Israeli Collaborative Research Proposal: Hierarchical Coordination of Complex Actions	47.075	7,313	-
NSF	BCS-1823919	Expanding Access to Webcam-based online data collection for developmental research	47.075	32,183	-
NSF	BCS-1826757	CompCog: Advancing Understanding of Visual Crowding	47.075	50,689	-
NSF	BCS-1827598	Collaborative research: An integrated model of phonetic analysis and lexical access based on individual acoustic cues to features	47.075	3,256	-
NSF	BCS-1921501	Computational auditory scene analysis as causal inference	47.075	78,703	-
NSF	BCS-2016404	Doctoral Dissertation Research: Cultures of North American Cannabis Cultivation in an Age of Legalization	47.075	3,114	-
NSF	BCS-2016895	Collaborative Research: Cross-Categorical Context Dependence: Bridging Developmental , Experimental, and Theoretical Perspectives	47.075	77,332	-

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Federal Agency	Government Contract Number	Master Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NSF	BCS-2020840	Evaluating Meaning-based explanations of syntactic island effects cross-linguistically	47.075	137,224	-
NSF	BCS-2042748	Collaborative Research: Exploring Variation in English Intonational Acoustic Phonetics from Grammatical Perspectives	47.075	19,378	-
NSF	BCS-2116918	COVID-19: Doctoral Dissertation Research: Developing a scalable theory of alternatives in pragmatics	47.075	6,669	-
NSF	BCS-2118103	Collaborative Research: Loopholes as a window into the learning of meaning	47.075	227,122	-
NSF	BCS-2121009	Collaborative Research: CompCog: Adversarial Collaborative Research on Intuitive Physical Reasoning	47.075	90,730	-
NSF	BCS-2121074	CompCog: Noisy-channel processing in human language understanding	47.075	70,897	-
NSF	BCS-2124136	Collaborative Research: NCS-FR: Beyond the ventral stream: Reverse engineering the neurocomputational basis of physical scene understanding int he primate brain	47.075	631,015	-
NSF	BCS-2140399	Doctoral Dissertation Research: Presupposition projection in conditionals and conjunctions : Developmental and psycholinguistic evidence	47.075	2,079	-
NSF	BCS-2213722	Doctoral Dissertation Research: Disability, Technology, and Labor	47.075	3,036	-
NSF	BCS-2218748	Mobility Data for Communities (MD4C): Uncovering Segregation, Climate Resilience, and Economic Development from Cell-Phone Records	47.075	100,108	-
NSF	BCS-2228471	Collaborative Research: SAI-P: Public Multi-Access Edge Cloud (pMEC) as a Community-Based Distributed Computing Infrastructure for Emerging Real-Time Applications	47.075	59,999	-
NSF	BCS-2240406	The Perception and Cognition of Sound Texture	47.075	4,049	-
NSF	SES-1555071	CAREER: Dynamic Games and Institutions	47.075	74,499	-
NSF	SES-1848857	Risk Markets Imbalances and Macroeconomics	47.075	55,945	-
NSF	SES-1919437	Collaborative Research: The Tax Administration Production Function: Evidence from Indonesia	47.075	39,574	26,924
NSF	SES-1941577	Doctoral Dissertation Research: Sensing the World: The Development of Tactile Information Systems	47.075	8,183	-
NSF	SES-1944138	CAREER: Information Frictions in Consumer Credit Markets: Evidence on Policy, Practice, and Beliefs	47.075	46,116	-
NSF	SES-1947087	Standard Grant: Genetown: Tracing the History of the Biotechnology Industry in the Greater Boston Area, 1973-2000	47.075	48,647	-
NSF	SES-1948692	Collaborative Research: The economics of social data	47.075	62,337	-
NSF	SES-1951056	Apprenticeship, Cooperation and Choice	47.075	61,439	-
NSF	SES-2017315	Strategic Links Between Campaign Donations and Lobbying: Evidence from the LobbyView Database of Money in Politics	47.075	60,175	-

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Massachusetts Institute of Technology
Federal Research Support - On Campus
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Federal Agency	Government Contract Number	Master Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NSF	SES-2047152	Integrating Political Science and Cognitive Science to Meet the Challenge of Promoting Accurate Information on Social Media	47.075	118,271	-
NSF	SES-2047513	CAREER: Toward A Framework for Intersectional Antiracism in Technology Development, Design and Distribution	47.075	192,019	-
NSF	SES-2049263	NSF-BSF: Collaborative Research: Market Conduct in Technology Adoption in the Automobile Industry	47.075	79,561	-
NSF	SES-2049744	Collaborative Research: Information and Markets	47.075	14,476	-
NSF	SES-2049895	Firm Relocation as Environmental Policy: Impacts on Agglomeration and the Environment	47.075	105,357	53,710
NSF	SES-2147166	Doctoral Dissertation Research: Enigmatic Nature: Absent Laws and Hidden Objects in Theoretical Physcis, 1967-2004	47.075	9,035	-
NSF	SMA-1757344	Mapping the Inventor Gender Gap: Analyzing Regional & Organization Variation in the Inclusivity of the Innovation Economy	47.075	-14,049	-
NSF	DGE-1745302	Graduate Research Fellowship Program (GRFP)	47.076	944	-
NSF	DGE-1806815	IGE: Enhancing Graduate Education in Systems Thinking and Multi-Stakeholder Design through a Co-Creation Toolkit	47.076	77,365	-
NSF	DGE-2141064	Graduate Research Fellowship Program (GRFP)	47.076	19,055,718	-
NSF	DRL_2005702	Collaborative Research: Facilitating Computational Tinkering: Design-Based Strategies to Engage Children and Families in Creating with Code	47.076	248,434	-
NSF	DRL-1906636	Outsmarting Artificial Intelligence	47.076	387,149	-
NSF	DRL-1934126	Made with Math	47.076	261,378	-
NSF	DRL-2024679	Collaborative Research:NCS-FO: How cognitive maps potentiate newlearning: constraining a computational model by decoding the thoughtsof superior memorists	47.076	73,576	-
NSF	DRL-2048746	Developing and Testing Innovations [DTI]: Everyday AI for Youth	47.076	425,729	37,853
NSF	DRL-2124052	Collaborative Research: NCS-FO: Studying language in the brain in the modern machine learning era	47.076	131,357	-
NSF	DRL-2200917	Collaborative Research: Designing Computational Modeling Curricula across Science Subjects to Study How Repeated Engagement Impacts Student Learning throughout High School	47.076	476,649	-
NSF	DUE-1839921	FW-HTF Theme 2: Collaborative Research: Designing Future Reality Today: Physical-Reality Simulation Platform for Future Factories	47.076	65,924	-
NSF	DUE-2142638	Making the makers: Understanding how increased agency and social impact driven makerspaces grow engineering identity and self-efficacy in marginalized students	47.076	207,327	121,083
NSF	IIS-1917668	Supporting Teachers with Interaction Tools for Challenging Happenings (STITCH)	47.076	66,981	-1,000

Appendix A1
Massachusetts Institute of Technology
Federal Research Support - On Campus
FY 2023 Expenditures

Federal Agency	Government Contract Number	Master Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NSF	IIS-2202431	We are in this together!: Leveraging mixed reality headset technologies to re-design participatory simulations for complex systems learning in classrooms	47.076	222,322	-
NSF	OAC-2209756	Frameworks: Cyberinfrastructure for Remote Data Collection with Children	47.076	192,134	-
NSF	OPP-1853918	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	131,208	-
NSF	OPP-1931131	A New Instrument and Measurement Approach to Cryo-Seismogeodesy: Monitoring Antarctic Ice Shelf Stability Using Ice Penetrators	47.078	347,410	-
NSF	OPP-2103100	Collaborative Research: Temperature and atmospheric circulation history of high-latitude Canada across interglacials of the past 1.5 Myr from cave deposits	47.078	13,366	-
NSF	OPP-2136940	COVID-19: Collaborative Research: EAGER: Generation of high resolution surface melting maps over Antarctica using regional climate models, remote sensing and machine learning	47.078	33,743	-
NSF	OPP-2302530	A low-cost, long-endurance observational platform for the Arctic atmospheric boundary layer	47.078	127,201	-
NSF	OIA-2021069	GCR: Collaborative Research: Fine-grain generation of multiscale patterns in programmable organoids using microrobots	47.083	97,415	-
NSF	OIA-2035143	NSF Convergence Accelerator: Future of Oceans: Innovation, Exploration, and Utilization	47.083	5,056	-
NSF	OIA-2132318	A1: Knowledge Network Development Infrastructure with Application to COVID-19 Science and Economics	47.083	2,678,599	2,273,265
NSF	OIA-2134795	NSF Convergence Accelerator Track D: A Community Resource for Innovation in Polymer Technology (CRIPT)	47.083	2,528,336	949,087
NSF	OIA-2137530	NSF Convergence Accelerator Track F: Adapting and Scaling Existing Educational Programs to Combat Inauthenticity and Instill Trust in Information	47.083	436,036	190,835
NSF	OIA-2219052	GCR:Collaborative Research: Micro-robo-genetics for programmable organoid formation	47.083	146,434	-
NSF	ITE-2235945	NSF Convergence Accelerator Track I: Sustainable Topological Energy Materials (STEM) for Energy-efficient Applications	47.084	179,823	47,985
NSF	ITE-2236093	NSF Convergence Accelerator Track I: Building a Sustainable, Innovative Ecosystem for Microchip Manufacturing	47.084	101,223	-
NSF	ITE-2236190	NSF Convergence Accelerator Track I: Mind over Matter: Socioresilient Materials Design: A New Paradigm For Addressing Global Challenges in Sustainability	47.084	112,240	18,265
NSF	TI-2229704	POSE: PHASE I: Open Source Ecosystem for OpenCilk	47.084	105,428	-

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Massachusetts Institute of Technology
Federal Research Support - On Campus
FY 2023 Expenditures

Federal Agency	Government Contract Number	Master Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NSF	TI-2234141	I-Corps Team: Artificial Intelligence Models to Improve Heart Failure Management	47.084	41,347	-
NSF	TI-2234204	I- Corps: Manufacturing miniaturized high density printed circuit boards (PCB)	47.084	18,734	-
NSF	TI-2237325	I-Corps: Machine Learning and Bio-Signal Processing for Enhancing Empathy Training	47.084	32,293	-
NSF	TI-2302151	ICorps:System for rapid detection of virus-loaded aerosol	47.084	5,751	-
NSF	TI-2324992	I-Corps: Catalytic Porous Organic Polymers	47.084	1,444	-
NSF	CMMI-1826216	Manufacturing USA: Fundamentals and Applications of High-Resolution Flexographic Printing Using Nanoporous Stamps	47.RD	99,421	-
NSF	CMMI-1917891	Trinity: Tradable Mobility Credits for Efficient Transportation	47.RD	34,428	-
NSF	CNS-1739505	CPS: Small: Recover Algorithms for Dynamic Infrastructure Networks	47.RD	829	-
NSF	CNS-1932406	CPS: DFG Joint: Medium: Collaborative Research: Data-driven Secure Holonic control and Optimization for the Networked Cyber-Physical Systems (DeCisiON-CPS)	47.RD	108,794	-
NSF	ECCS-1954606	Collaborative Research: Energy Efficient Voltage Controlled Non-volatile Domain Wall Devices for Neural Networks	47.RD	18,589	-
		Total for National Science Foundation		**98,930,552**	**9,869,042**
		TOTAL for National Science Foundation		**98,930,552**	**9,869,042**
		TOTAL Federal Research Support - On Campus		**428,431,755**	**60,089,998**

Appendix A-2
Massachusetts Institue of Technology
Schedule of Expenditures of Federal Awards - Lincoln Laboratory
By Sponsor & Contract - FY 2023

Sponsor	Contract Number	Program Name	AL #	Total $ Amount Expended	$ Amount Passed to Subrecipients
DEPARTMENT OF DEFENSE					
AIR FORCE	FA8721-05-C-0002		12.RD	$ 34,529	$ 34,488
	FA8702-15-D-0001		12.RD	317,704,042	19,541,505
ARMY	FA8721-05-C-0002		12.RD	7,179	-
	FA8702-15-D-0001		12.RD	77,468,146	2,254,636
CLASSIFIED	FA8702-15-D-0001		12.RD	304,315,588	20,042,121
COMBATANT COMMANDS	FA8702-15-D-0001		12.RD	33,150,472	1,850,748
NAVY	FA8702-15-D-0001		12.RD	73,643,799	7,782,707
OFFICE OF THE SECRETARY OF DEFENSE	FA8721-05-C-0002		12.RD	92,365	92,365
	FA8702-15-D-0001		12.RD	227,819,731	9,720,539
OTHER DEPARTMENT OF DEFENSE	FA8702-15-D-0001		12.RD	76,815,629	2,898,416
TOTAL DEPARTMENT OF DEFENSE				**$ 1,111,051,480**	**$ 64,217,525**
NON DEPARTMENT OF DEFENSE					
DEPARTMENT OF AGRICULTURE	FA8702-15-D-0001		10.RD	$ (199)	$ -
DEPARTMENT OF COMMERCE	FA8702-15-D-0001		11.RD	8,101,040	608,825
DEPARTMENT OF ENERGY	FA8702-15-D-0001		81.RD	7,806,166	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	FA8702-15-D-0001		93.RD	2,282,862	-
DEPARTMENT OF HOMELAND SECURITY	FA8702-15-D-0001		97.RD	16,320,001	337,700
DEPARTMENT OF JUSTICE	FA8702-15-D-0001		16.RD	2,876,211	-
DEPARTMENT OF STATE	FA8702-15-D-0001		19.RD	133,259	-
DEPARTMENT OF TRANSPORTATION	FA8702-15-D-0001		20.RD	22,677,817	124,779
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	FA8702-15-D-0001		43.RD	14,977,396	1,215,612
US AGENCY FOR INTERNATIONAL DEVELOPMENT	FA8702-15-D-0001		98.RD	5,717,110	304,041
OTHER NON DOD	FA8702-15-D-0001		99.RD	274,704	-
TOTAL NON-DEPARTMENT OF DEFENSE				**$ 81,166,367**	**$ 2,590,957**
TOTAL DIRECT AWARDS				**$ 1,192,217,847**	**$ 66,808,482**

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Massachusetts Institue of Technology
Schedule of Expenditures of Federal Awards - Lincoln Laboratory
By Sponsor & Contract - FY 2023 Continued

Prime Sponsor and Sponsor	Passthrough Contract Number	Program Name	AL #	Total	$ Amount Passed to Subrecipients
DEPARTMENT OF DEFENSE					
ARMY					
Advanced Functional Fabrics of America	W15QKN-16-3-0001	Controlled Reflectivity Fabrics	12.RD	95,090	-
Kumu Networks, Inc.	W56KGU-21-0035	SF-STAR Tactical Radios	12.RD	262,079	-
MIT Campus	W911NF-13-D-0001	Q-Diamond	12.RD	123,804	-
MIT Campus	W911NF-20-1-0037	Metastable Qubits Multi-Ion Systems	12.RD	27,125	-
TransWave Photonics LLC	W911NF-22-C-0050	Mid-wave Infrared Beam Steering	12.RD	63,641	-
Synoptic Inc.	W56KGU-21-C-0013	Retrodirective Coherency Linking Advanc	12.RD	185,980	-
COMBATANT COMMANDS					
Ultralight Industries Corporation	H9240522P0023	Scalable Digital Phased Arrays	12.RD	82,285	-
DEPARTMENT OF THE AIR FORCE					-
ASTRA, LLC	FA8750-18-C-0119	Sun-Tracking Millimeter-Wave Radiometer	12.RD	17,201	-
Vescent Photonics	FA864921P0956	SBS Lasers for Quantum Timing	12.RD	161,158	-
RedShred, LLC	FA864922P0093	Air Force Data Hub	12.RD	(487)	-
Target Arm, Inc.	FA864922P0882	AF Arsenal Aircraft	12.RD	268,855	-
MIT Campus	FA8750-19-2-1000	AI for Personalized Foreign Language Education	12.RD	68,870	-
MIT Campus	FA8750-19-2-1000	Explainable Machine Learning for Decision	12.RD	53,237	-
MIT Campus	FA8750-19-2-1000	AI-Enhanced Spectral Awareness	12.RD	8,678	-
MIT Campus	FA8750-19-2-1000	Objective Performance Prediction & Optimization	12.RD	330,713	-
MIT Campus	FA8750-19-2-1000	AI-Enhanced Spectral Awareness	12.RD	117,302	-
MIT Campus	FA8750-19-2-1000	AI-Robust Neural Differential Models	12.RD	11,578	-
MIT Campus	FA8750-19-2-1000	AI-Automation in Space Domain Aware	12.RD	722,859	-
MIT Campus	FA8750-19-2-1000	Trustworthy AI	12.RD	115,405	-
MIT Campus	FA8750-19-2-1000	Few-Shot and Continual Lear	12.RD	45,133	-
MIT Campus	FA8750-19-2-1000	Better Networks Via AI Enabled Hierarchic	12.RD	77,978	-
MIT Campus	FA8750-19-2-1000	Guardian Autonomy for Safe Decision Making	12.RD	144,050	-
MIT Campus	FA8750-19-2-1000	Fast AI: Quick Development of Portable H	12.RD	63,837	-
MIT Campus	FA8750-19-2-1000	ML-Enhanced Data Collection, Integration	12.RD	62,027	-
MIT Campus	FA8750-19-2-1000	Transferring Multi-Robot Learning Through	12.RD	36,610	-
MIT Campus	FA8750-19-2-1000	Conversational Interaction for Unstructured	12.RD	56,956	-
MIT Campus	FA8750-19-2-1000	Multimodal Vision for Synthetic Aperture	12.RD	69,815	-
MIT Campus	FA8750-19-2-1000	AI-Assisted Optimization of Training Sch	12.RD	106,024	-
MIT Campus	FA8750-19-2-1000	AF-Weather: Newman Child	12.RD	39,844	-
MIT Campus	FA8750-19-2-1000	AI Education & Training	12.RD	52,267	-
Hypergiant Galactic Systems, Inc.	FX21S-TCS01-0279	Orbital Prime	12.RD	112,771	-
Thrust AI, LLC	FA864923P0372	Runway Situation Awareness and Alerting	12.RD	22,422	-
Ultralight Industries Corporation	FA864923P0917	Adaptable RF System for TCCBMS	12.RD	5,079	-
Ultralight Industries Corporation	FA864923P0919	Adaptable RF System for TRTRS	12.RD	3,906	-
Busek Company	FA9453-22-C-A032	Soul ADR	12.RD	19,837	-
Target Arm, Inc.	FA9453-22-C-A076	Space Debris Collection System	12.RD	70,000	-
First Light Observatory Systems, LLC	FA8750-22-C-1017	Tactical Array for Optical Surveillance	12.RD	38,013	-
DIRECTOR OF NATIONAL INTELLIGENCE	2022-22072700001	IC-MIT Strategic Partnership	54.RD	86,535	-
NAVY					
Ohio State University	N00014-17-1-2440	Low Excess-Noise Avalanche Photodetector	12.RD	29,170	-
Vescent Photonics LLC	N68335-19-C-0642	Diamond Deployed Devices	12.RD	248,181	-
Triton Systems, Inc.	N68335-20-C-0704	Retractable Antenna for Improved Communications in Satellite-denied Environments	12.RD	86,873	-
Pendar Technologies	N68335-20-C-0845	QCL Array with IW Beam Combining	12.RD	17,731	-
Pendar Technologies	N68936-21-C-0034	QCL Manufacturing 10X Cost Reduction	12.RD	17,775	-
Metis Foundation	W81XWH-22-9-0009	AI-Enabled Nerve Blocks	12.RD	94,249	-

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Massachusetts Institue of Technology
Schedule of Expenditures of Federal Awards - Lincoln Laboratory
By Sponsor & Contract - FY 2023 Continued

Prime Sponsor and Sponsor	Passthrough Contract Number	Program Name	AL #	Total	$ Amount Passed to Subrecipients
OFFICE OF THE SECRETARY OF DEFENSE					
Johns Hopkins University Applied Physics Laboratory	HQ003419D0006 (WHS1)	Cyber Resillience Assessments	12.RD	320,912	-
Geegah, LLC	HR001121C0231	Ultracompact CMOS Integrated Ultrasonic	12.RD	13,508	-
Istari, Inc.	HQ086023C7537	Physics Based Model & Simulation	12.RD	73,343	-
Creare, LLC	W81XWH22C006	Efficient Measure/Noise Blast	12.RD	9,792	-
		Total Department of Defense		**$ 4,740,011**	**$ -**
NON DEPARTMENT OF DEFENSE					
DEPARTMENT OF ENERGY					
Lawrence Berkeley National Laboratory	DE-AC02-05CH11231	Advanced Quantum Testbed	81.RD	1,380,368	-
Telluric Labs, LLC	DE-SC0019581	Rad-Hard Terabit Data Links for Particle Physics	81.RD	(368)	-
Triton Systems, Inc.	DE-SC0021947	Fiber Based Heat Exchangers for HVAC	81.RD	(110)	-
MIT Campus	N000428947	Atmospheric Microplasma Sputtering	81.RD	29,475	-
MIT Campus	DE-AR0001591	8-GAN-ON-SI Super Junction Devices	81.RD	252,763	-
MIT Campus	N000461457	Third Phase Development of Atmospheric M	81.RD	53,724	-
DEPARTMENT OF HEALTH & HUMAN SERVICES					
Massachusetts General Hospital	1-R01-DK119860-01	Diagnostic Assistant for Fatty Liver Disease	93.RD	95,376	-
Massachusetts General Hospital	1-U01-EB028660-01	Diffuse Correlation Spectroscopy for Functional Imaging of the Human Brain	93.RD	367,647	-
University of Florida	2RF1AG049722-06	Functional Connectivity Mapping	93.RD	125,562	-
MBF Bioscience	IR43MH128076	Meso-Scale Brain Mapping	93.RD	124,618	-
MIT Campus	1-R01-EB025256-01A1	Programmable Multi-Step Genetic Difference	93.RD	8,378	-
MIT Campus	5-U01-MH117072-03	Integrated Cell Type Brain Mapping (Yr 4)	93.RD	(126)	-
MIT Campus	5-U01-MH117072-05	Integrated Cell Type Brain Mapping (Yr 5)	93.RD	216,084	-
State of Maine	OSA-22-3000	Mobile Crisis Data System for Maine	93.RD	147,150	-
FEDERAL AVIATION AUTHORITY					
MIT Campus	13-C-AJFE-MIT-047	Ascent Project 46	20.RD	109,418	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION					
Jet Propulsion Laboratory	NNN12AA01C	Psyche Deep-Space Optical Communications	43.RD	57,761	-
Jet Propulsion Laboratory	NNN12AA01C	Europa Lander Ladar Design Study	43.RD	1,482,317	-
Jet Propulsion Laboratory	NNN12AA01C	Uplink Laser Transmitter Study	43.RD	150,928	-
AdvR Inc.	80NSSC20C0643	High-purity, High-rate, Photon Pair Sour	43.RD	92,161	-
George Washington University	80NSSC21M0087	Autonomous Air Traffic Mgt Adv Air Mobil	43.RD	245,949	-
Vescent Photonics, LLC	80NSSC21C0091	SBS Lasers for Quantum Timing	43.RD	65,265	-
MIT Campus	80NSSC18K1677	Auroral Emissions Radio Explorer	43.RD	13,626	-
MIT Campus	80NSSC19K0617	LL Vista	43.RD	162,196	-
MIT Campus	SV0-09008	Readying X-Ray Grating	43.RD	18,014	-
MIT Campus	80NSSC20K0401	Toward Fast, Low-Noise, Radiation-Tolerant	43.RD	38,312	-
MIT Campus	62467927-176172	Safe Aviation Autonomy	43.RD	234,967	-
MIT Campus	NNG14FC03C	Faint Object Detection in TESS Data	43.RD	62,545	-
MIT Campus	80NSSC23K0211	Extremely Low-Noise, High Frame-Rate X-R	43.RD	25,178	-
MIT Campus	80NSSC22K0788	Curved Detectors for Future X-Ray Astrop	43.RD	463,714	-
MIT Campus	80GSFC23CA045	Survey and Time Domain	43.RD	230,525	-
MIT Campus	63043778-249824	Digital CCD Characterization	43.RD	212	-
TruWeather Solutions	80NSSC22PB235	Multipurpose Doppler Lidar Measurements	43.RD	33,684	-
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION					
NOAA Collaboration Agreement	NA21OAR4590385	Development and Deployment of a Sea Clutter Class within the Operational WSR-88D	11.RD	212,474	-
NOAA Collaboration Agreement	NA21OAR4590395	Development and Demonstration of a Low-Cost, Standalone Mode S EHS Aircraft	11.RD	279,809	-

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Massachusetts Institue of Technology
Schedule of Expenditures of Federal Awards - Lincoln Laboratory
By Sponsor & Contract - FY 2023 Continued

Prime Sponsor and Sponsor	Passthrough Contract Number	Program Name	AL #	Total	$ Amount Passed to Subrecipients
NATIONAL SCIENCE FOUNDATION					
University of Illinois Urbana-Champagne	FAIN 2016244	Quantum Leap Challenge Institute	47.070	288,814	-
MIT Campus	AST-1836002	LLAMAS Optical System Integration	47.070	37,675	-
Regents of the University of Michigan	1952279	Improving Human-Exoskeleton through Dyna	47.070	126,248	-
The Regents of the University of Colorado	OMA 2016244	Quantum Leap Challenge Institute	47.070	53,595	-
MIT Campus	AGS-1952737	Millstone Hill Geospace Facility: Vector Sensor Meteor	47.070	89,282	-
Texas A&M University	M2203440	Programmable Zero-Trust Security for Ope	47.070	39,295	-
MIT Campus	S458042	LIGO	47.049	9,355	-
		Total Non Department of Defense		**$ 7,423,860**	**$ -**
Total Passthrough Awards				**$ 12,163,871**	**$ -**
Total Federal Awards				**$ 1,204,381,718**	**$ 66,808,482**

Appendix A3
Massachusetts Institute of Technology
Federal Research Support - Passthrough - On Campus
FY 2023 Expenditures by Prime Sponsor and Sponsor

Prime Sponsor Name	Project WBS id	Passthrough Number	WBS Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
DEPARTMENT OF DEFENSE						
Boise State University						
DEPARTMENT OF DEFENSE	6948783	10287-PO140635	Extending Electron Emission Physics in Crossed Field Devices	12.800	66,246	-
DEPARTMENT OF DEFENSE	6945142	8583-PO132256	Plasma and Electro-Energetic Physics	12.800	27,053	-
			Total for Boise State University		**93,299**	**-**
Raytheon Technologies Corporation						
DEPARTMENT OF DEFENSE	6944946	1257946; PO#2607440	Extreme Value Statistical Framework for Cold Dwell Fatigue Life Prediction in Ti Alloy Components	12.RD	-770	-
			Total for Raytheon Technologies Corporation		**-770**	**-**
Purdue University						
DEPARTMENT OF DEFENSE	6946173	13001075-011	Topological plasma structures for control of electromagnetic interactions	12.800	271,052	-
DEPARTMENT OF DEFENSE	6949600	13001259-054	EMBR: A Collaborative Center for Energetic Materials Basic Research	12.431	223,547	-
			Total for Purdue University		**494,599**	**-**
Columbia University						
DEPARTMENT OF DEFENSE	6944919	2(GG016303)/PO SAPOG15323	COVID-19: Ensembles of Molecules in Controlled Quantum States for Quantum Simulations, Ultracold Reactions, and Precision Metrology	12.800	220,173	-
DEPARTMENT OF DEFENSE	6944919	2(GG016303)/PO SAPOG15323	Ensembles of Molecules in Controlled Quantum States for Quantum Simulations, Ultracold Reactions, and Precision Metrology	12.800	378	-
DEPARTMENT OF DEFENSE	6949400	1(GG018601-04)	IMPEDE: Inhibiting Molds with Probiotic Ensembles from Diverse Environments	12.910	220,151	-
DEPARTMENT OF DEFENSE	6943120	G14463	TRAUMAS: Treatment and recovery augmented with electrical and ultrasound- mediated actuation and sensing	12.910	-10,006	-
DEPARTMENT OF DEFENSE	6943003	SUB# 5(GG015670) / PO# SAPOG16919	TRAUMAS: Treatment and recovery augmented with electrical and ultrasound- mediated actuation and sensing	12.910	142,235	-
			Total for Columbia University		**572,931**	**-**
University of Texas at Arlington						

Appendix A3
Massachusetts Institute of Technology
Federal Research Support - Passthrough - On Campus
FY 2023 Expenditures by Prime Sponsor and Sponsor

Prime Sponsor Name	Project WBS id	Passthrough Number	WBS Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
DEPARTMENT OF DEFENSE	6945415	2016GC5246	(MURI) Next Generation Advances in Ionosphere Thermosphere Coupling at Multiple Scales for Environmental Specification and Prediction	12.800	6,180	-
DEPARTMENT OF DEFENSE	6944421	2016GC5246	COVID-19: (MURI) Next Generation Advances in Ionosphere Thermosphere Coupling at Multiple Scales for Environmental Specification and Prediction	12.800	121,312	-
			Total for University of Texas at Arlington		**127,492**	**-**
Azimuth Corporation						
DEPARTMENT OF DEFENSE	6945195	238-013	Active Metasurface	12.RD	-4,259	-
			Total for Azimuth Corporation		**-4,259**	**-**
University of Maryland						
DEPARTMENT OF DEFENSE	6935254	43830-Z8183003	MURI: Photonic Quantum Matter	12.800	25,077	-
			Total for University of Maryland		**25,077**	**-**
Stanford University						
DEPARTMENT OF DEFENSE	6944571	62455258-159327	ANSRE: Analysis and Synthesis of Rare Events	12.800	266,001	-
DEPARTMENT OF DEFENSE	6946967	62780871-155611	Engineering native human skin commensals to eliminate attractants and introduce repellents and mosquito tracking using millisecond device apparati	12.910	70,305	-
DEPARTMENT OF DEFENSE	6946965	62781405-155611	Engineering native human skin commensals to eliminate attractants and introduce repellents and mosquito tracking using millisecond device apparati	12.910	67,527	-
DEPARTMENT OF DEFENSE	6946971	62781406-155611	Engineering native human skin commensals to eliminate attractants and introduce repellents and mosquito tracking using millisecond device apparati	12.910	1,997	-
DEPARTMENT OF DEFENSE	6946966	62781407-155611	Engineering native human skin commensals to eliminate attractants and introduce repellents and mosquito tracking using millisecond device apparati	12.910	44,993	-
DEPARTMENT OF DEFENSE	6946970	62781408-155611	Engineering native human skin commensals to eliminate attractants and introduce repellents and mosquito tracking using millisecond device apparati	12.910	76,429	-
DEPARTMENT OF DEFENSE	6946969	62781409-155611	Engineering native human skin commensals to eliminate attractants and introduce repellents and mosquito tracking using millisecond device apparati	12.910	50,031	-
DEPARTMENT OF DEFENSE	6949098	MULTIPLE	Engineering native human skin commensals to eliminate attractants and introduce repellents and mosquito tracking using millisecond device apparati	12.910	110,215	-

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Prime Sponsor Name	Project WBS id	Passthrough Number	WBS Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
DEPARTMENT OF DEFENSE	6946968	SUBAWARD NO. 62780872-155611	Engineering native human skin commensals to eliminate attractants and introduce repellents and mosquito tracking using millisecond device apparati	12.910	73,668	-
DEPARTMENT OF DEFENSE	6931094	60744752-114407	Role of Bidirectional Computation in Visual Scene Analysis	12.300	4,990	-
DEPARTMENT OF DEFENSE	6939969	61957754-136921	AI Nets: Predicting Action and Inferring Intentions of Groups of Targets with a Network of Surveillance Robots	12.300	155,650	-
			Total for Stanford University		**921,806**	**-**
Lincoln Laboratory						
DEPARTMENT OF DEFENSE	6941920	7000469159	A Safe and High-Energy-Density Electrochemical Power System Using Liquid Fluorinated Reactants	12.RD	13,519	-
DEPARTMENT OF DEFENSE	6945165	7000511601	Aluminum-Water Buoyancy Engine for Fast Vertical Underwater Glider	12.RD	22,496	-
DEPARTMENT OF DEFENSE	6945494	7000515469	Cold-Source Steep-Slope Field Effect Transistor	12.RD	-12,834	-
DEPARTMENT OF DEFENSE	6945787	7000519719	Autonomous Surface Vehicle Deployment with Inter- and Intra-Team Coordination from High-level Specifications (IITCHS)	12.RD	-371	-
DEPARTMENT OF DEFENSE	6949431	7000569882	Safety in Aerobatic Flight Regimes (SAFR)	12.RD	64,775	-
DEPARTMENT OF DEFENSE	6947181	7100541584	Audio-Visual Learning from Unannotated Video	12.RD	51,235	-
DEPARTMENT OF DEFENSE	6943900	PO # 7000493110	3D Hetero-integrated Image Sensor via Remote Epitaxy and 2D Layer Transfer	12.RD	-13,156	-
DEPARTMENT OF DEFENSE	6950027	PO #7000582877	Traction Drive Design Considerations for Large Ships	12.RD	6,026	-
DEPARTMENT OF DEFENSE	6947852	PO 7000540807	Project Tandem - Advance Open Autonomy for AUVs	12.RD	5,033	-
DEPARTMENT OF DEFENSE	6947693	PO 7000548323	Automated learning of action sequences from many hours of video description	12.RD	110,165	-
DEPARTMENT OF DEFENSE	6947858	PO 7000550459	Autonomous Systems Line Robot Training from Demonstration	12.RD	131,448	-
DEPARTMENT OF DEFENSE	6948799	PO 7000558287	MIT Haystack Observatory Engineering Support for The Lincoln Space Surveillance Complex (LSSC)	12.RD	2,242,530	-
DEPARTMENT OF DEFENSE	6948696	PO 7000558703	Compact Second Harmonic Generation for Atomic Clocks and Sensors	12.RD	137,642	-
DEPARTMENT OF DEFENSE	6949612	PO 7000570786	Exergy Control for Supplying Mission-critical Loads	12.RD	49,097	-
DEPARTMENT OF DEFENSE	6936468	PO 7100386377 / 7000386377	Time-Resolved Observations of Precipitation structure and storm Intensity with a Constellation of Smallsats (TROPICS)	12.RD	92,139	-
DEPARTMENT OF DEFENSE	6946653	PO 7100533287	Heteroepitaxial Integrated Photonics (HIP)	12.800	53,089	-
DEPARTMENT OF DEFENSE	6947091	PO 7100540807	Project Tandem - Advance Open Autonomy for AUVs	12.RD	85,000	-
DEPARTMENT OF DEFENSE	6947440	PO 7100545061	Line-funded SNSPD-array Program	12.RD	39,345	-

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Prime Sponsor Name	Project WBS id	Passthrough Number	WBS Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
DEPARTMENT OF DEFENSE	6946911	PO OLD 7000535491 / NEW 7100535491	Midwave Infrared Integrated Photonics Platform	12.RD	99,524	-
DEPARTMENT OF DEFENSE	6930859	PO# 7000290592	Coherent Spin Qubits for Quantum-Enhanced Optimization	12.RD	-254	-
DEPARTMENT OF DEFENSE	6935235	PO# 7000370657	Phase Change Metamaterials	12.RD	-103	-
DEPARTMENT OF DEFENSE	6935784	PO# 7000379430	Lane-keeping with Localizing GPR in Poor Conditions	12.RD	2,746	-
DEPARTMENT OF DEFENSE	6935965	PO# 7000381569	Demonstration of Logical Qubits using 3D Integration	12.RD	-385	-
DEPARTMENT OF DEFENSE	6936301	PO# 7000385936	Design and Characterization of JTWPAs	12.RD	212,892	-
DEPARTMENT OF DEFENSE	6937231	PO# 7000398589 / LETTER NO. 16-C-17-0691	Alternatives for FEMA Disaster-Related Housing Assistance	12.RD	59,173	-
DEPARTMENT OF DEFENSE	6937317	PO# 7000399771	MIT Haystack Observatory Engineering Support for The Lincoln Space Surveillance Complex (LSSC)	12.RD	689,194	-
DEPARTMENT OF DEFENSE	6937963	PO# 7000409620	Unhackable Mission Computer	12.RD	-12,358	-
DEPARTMENT OF DEFENSE	6939172	PO# 7000424794	Support of the Westford 9M Remote Antenna - Group 64	12.RD	-838	-
DEPARTMENT OF DEFENSE	6940197	PO# 7000441730	Miniature Cryocooler as a Platform for Quantum Sensors	12.RD	-4	-
DEPARTMENT OF DEFENSE	6940414	PO# 7000442717	Quantum Memory Technology Development for Quantum Network Testbed Demonstration	12.RD	28,668	-
DEPARTMENT OF DEFENSE	6940223	PO# 7000443135	Task Execution with Semantic Segmentation	12.RD	-46	-
DEPARTMENT OF DEFENSE	6940307	PO# 7000444597	Wide Area Ocean Floor Mapping	12.RD	94,850	-
DEPARTMENT OF DEFENSE	6940363	PO# 7000445983	Ionobot: Autonomous Ocean Platform	12.RD	-834	-
DEPARTMENT OF DEFENSE	6940956	PO# 7000455589	Wallace Observatory Support in Mustang Program	12.RD	13,756	-
DEPARTMENT OF DEFENSE	6942091	PO# 7000470769	Technologies for Reliable Assured Autonomy in Challenging Environments (TRAACE)	12.RD	6,765	-
DEPARTMENT OF DEFENSE	6942563	PO# 7000471328	Superconducting Sensors for Neutrino Detection	12.RD	23,252	-
DEPARTMENT OF DEFENSE	6942724	PO# 7000478792	USAID Humanitarian Supply Chains	12.RD	53,661	-
DEPARTMENT OF DEFENSE	6943126	PO# 7000483598	System Analysis and Prototype Development for Undersea Exploration Platforms	12.RD	1,164	-
DEPARTMENT OF DEFENSE	6944072	PO# 7000494927	Embedded ICS Security Module	12.RD	23,061	-
DEPARTMENT OF DEFENSE	6944075	PO# 7000495145	Cross-Modal Learning with Vision, Natural Sounds, and Speech	12.RD	48	-
DEPARTMENT OF DEFENSE	6944314	PO# 7000497500	Micro-Textured Surfaces for Enhanced Two-Phase Thermal Management	12.RD	738	-
DEPARTMENT OF DEFENSE	6944366	PO# 7000497681	Multimodal Learning for Medical Diagnostics and Decision-Making (ML4MD)	12.RD	89,631	-
DEPARTMENT OF DEFENSE	6944343	PO# 7000497994	Structurally Embedded 3D Printing of Carbon Nanotube-Copper Composite Antennas and Electronics	12.RD	5,889	-

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DEPARTMENT OF DEFENSE	6944493	PO# 7000499932	Harnessing flexoelectricity for broadband photodetection and energy generation	12.RD	-7,655	-
DEPARTMENT OF DEFENSE	6946025	PO# 7000523043	In-Space Manufacturing of Large, Stiff, and Thermally Stable Structures	12.RD	7,852	-
DEPARTMENT OF DEFENSE	6946003	PO# 7000523549	Dynamic structural colors at scale: optical manufacture of mechano-responsive photonic sheets at the m2-scale	12.RD	-30,887	-
DEPARTMENT OF DEFENSE	6946100	PO# 7000526012	Quantum Bus	12.RD	33,077	-
DEPARTMENT OF DEFENSE	6946246	PO# 7000527979	SBS Lasers for Quantum Timing	12.RD	-853	-
DEPARTMENT OF DEFENSE	6946435	PO# 7000530004	Demonstrating Performance of 3D-Integrated Qubit Arrays and Protected Qubits	12.RD	136,939	-
DEPARTMENT OF DEFENSE	6946545	PO# 7000531792	Dual-Purpose Gasphilic Surfaces for Enhanced Microchannel Flow Boiling and Drag Reduction	12.RD	54,375	-
DEPARTMENT OF DEFENSE	6946596	PO# 7000532429	Electrostatic Acoustic NEMS Enable Noise Cancellation for Hearing Protection and Auditory Augmentation	12.RD	30,655	-
DEPARTMENT OF DEFENSE	6946736	PO# 7000534536	Support for the application of AI to accelerate drug development	12.RD	-259	-
DEPARTMENT OF DEFENSE	6946760	PO# 7000534582	Optical Antenna Design for Advanced Cooling and State Preparation of Trapped Ions	12.RD	17,287	-
DEPARTMENT OF DEFENSE	6946993	PO# 7000538504	Miniaturized Coherent Raman Spectrometer	12.RD	35,384	-
DEPARTMENT OF DEFENSE	6947340	PO# 7000544674	Secure Blended Service for 5G and Beyond	12.RD	93,699	-
DEPARTMENT OF DEFENSE	6947800	PO# 7000550086	Automating High-Fidelity CFD with Machine Learning Feature Recognition & Predictive Meshing	12.RD	47,536	-
DEPARTMENT OF DEFENSE	6947977	PO# 7000552061	Development of Coupled Thermomechanics Models of Material Ablation and Spallation in Hypersonic Environments	12.RD	55,653	-
DEPARTMENT OF DEFENSE	6948047	PO# 7000552794	Lincoln Laboratory Green Instrumentation and Experimentation	12.RD	39,949	-
DEPARTMENT OF DEFENSE	6948966	PO# 7000562772	Wearable Stem Cell Scaffolds for Expedited Tissue Regeneration	12.RD	171,923	-
DEPARTMENT OF DEFENSE	6949037	PO# 7000563119	MANATEE -Multi-Agent Naval Autonomy Tactical Evaluation Environment	12.RD	44,502	-
DEPARTMENT OF DEFENSE	6949071	PO# 7000564234	Fabrication of Quadrant TIRGAS	12.RD	130,985	-
DEPARTMENT OF DEFENSE	6949077	PO# 7000564486	Air-Launched Balloon	12.RD	76,563	-
DEPARTMENT OF DEFENSE	6949083	PO# 7000564817	Aircraft Routing for Reduced Climate Impact (ARRCI)	12.RD	41,491	-
DEPARTMENT OF DEFENSE	6949153	PO# 7000564981	Optimal Diver AUV Teaming for Sticky Missions	12.RD	104,828	-
DEPARTMENT OF DEFENSE	6949173	PO# 7000566745	Extending the Cyber Threat, Vulnerability and Mitigation Knowledge in BRON with Exploit Information	12.RD	84,440	-
DEPARTMENT OF DEFENSE	6949312	PO# 7000567147	Autonomy Al fresco	12.RD	102,116	-

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Prime Sponsor Name	Project WBS id	Passthrough Number	WBS Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
DEPARTMENT OF DEFENSE	6949365	PO# 7000568006	Spherical Control Moment Gyroscope	12.RD	45,652	-
DEPARTMENT OF DEFENSE	6949368	PO# 7000569054	High-throughput electron microscopy for materials reactions	12.RD	52,041	-
DEPARTMENT OF DEFENSE	6949486	PO# 7000570582	MAESTRO / COBALT	12.RD	89,357	-
DEPARTMENT OF DEFENSE	6949734	PO# 7000575655	Network Coding for Secure Low Latency Communications	12.RD	39,718	-
DEPARTMENT OF DEFENSE	6949815	PO# 7000578192	Widely-Tunable and Low-Loss Surface Acoustic Wave Radiofrequency Filters	12.RD	55,381	-
DEPARTMENT OF DEFENSE	6936545	PO# 7100389700	WaferSat	12.RD	96,325	-
DEPARTMENT OF DEFENSE	6940387	PO# 7100443447	Resilient Perception in Degraded Environments	12.RD	47,497	-
DEPARTMENT OF DEFENSE	6942147	PO# 7100471328	Superconducting Sensors for Neutrino Detection	12.RD	41,286	-
DEPARTMENT OF DEFENSE	6944702	PO# 7100501363	Reconfigurable Computer Generated Holograms for Freeform Optics	12.RD	70,728	-
DEPARTMENT OF DEFENSE	6945614	PO# 7100514642	Development of Coupled Thermomechanics Models of Material Ablation and Spallation in Hypersonic Environments	12.RD	8,194	-
DEPARTMENT OF DEFENSE	6946552	PO# 7100531720	Influence Quantification (IQ)	12.RD	46,357	-
DEPARTMENT OF DEFENSE	6946633	PO# 7100532906	Sampling the thermodynamic of materials interfaces with machine learning	12.RD	54,377	-
DEPARTMENT OF DEFENSE	6947064	PO# 7100537912	High-Performance Micropropulsion System	12.RD	224,562	-
DEPARTMENT OF DEFENSE	6947307	PO# 7100544348	Germanium Charge-Coupled Devices for Large-Format, Low-Noise Hard X-Ray Sensors	12.RD	156,421	-
DEPARTMENT OF DEFENSE	6940225	PO#7000442809	Embedded ICS Security Module	12.RD	17,821	-
DEPARTMENT OF DEFENSE	6943889	PO#7000492973	Private Automated Contact Tracing (PACT)	12.RD	188	-
DEPARTMENT OF DEFENSE	6946270	PO#7000528180	On-Chip Coherent EUV Light Sources	12.RD	9,511	-
DEPARTMENT OF DEFENSE	6947182	PO#7000541847	Cloud-based Deployment of MIT Regional Climate Models	12.RD	12,582	-
DEPARTMENT OF DEFENSE	6948451	PO#7000555953	An Integrated Visible Light Platform for Compact Ultranarrow Linewidth Lasers	12.RD	121,858	-
DEPARTMENT OF DEFENSE	6948738	PO#7000556379	Electrowetting Flow Controller	12.RD	49,997	-
DEPARTMENT OF DEFENSE	6948926	PO#7000559666	Synthetic electricity and gas load profiles for buildings	12.RD	97,128	-
DEPARTMENT OF DEFENSE	6948843	PO#7000561077	Electrostatic Actuation of Deployable Space Structures	12.RD	68,184	-
			Total for Lincoln Laboratory		**7,142,133**	**-**
University of California/Davis						
DEPARTMENT OF DEFENSE	6949480	A22-2094-S003	ExPlor -Center of Excellence on Brain-Derived Neuromorphic Computing with Intelligent Photonic and Electronic Materials	12.800	3,125	-

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Prime Sponsor Name	Project WBS id	Passthrough Number	WBS Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
			Total for University of California/Davis		**3,125**	**-**
Emory University						
DEPARTMENT OF DEFENSE	6941330	A755302 (FORMERLY A007735)	MURI: Molecular Level Studies of Solid-Liquid Interfaces in Electrochemical Processes	12.800	134,540	-
			Total for Emory University		**134,540**	**-**
AI Asset Management LLC						
DEPARTMENT OF DEFENSE	6949971	AGMNT DTD 6/1/23	Robotic Process Automation using NLP	12.RD	11,263	-
			Total for AI Asset Management LLC		**11,263**	**-**
Electra.aero						
DEPARTMENT OF DEFENSE	6947628	AGMT DATED 5/6/2022	Innovative Control and Configurations for Aircraft with Distributed Electric Propulsion	12.RD	78,399	-
			Total for Electra.aero		**78,399**	**-**
Istari, Inc.						
DEPARTMENT OF DEFENSE	6949554	AGMT DTD 2/3/23	Feasibility of Neural Control Certificates for Rare Events: Towards a Fully Digital Airworthiness Certification	12.RD	25,057	-
DEPARTMENT OF DEFENSE	6949567	AGMT DTD 2/3/23	Unsupervised Machine Learning Certifiable Object Detection for Aircraft Detect and Avoid	12.RD	25,000	-
DEPARTMENT OF DEFENSE	6949121	AGMT DTD. 11/10/2022	Ph1 STTR - Towards Fully Virtual Certification of Aircraft through Integration of Multi-domain Digital Modeling	12.RD	15,830	-
			Total for Istari, Inc.		**65,887**	**-**
Mesodyne						
DEPARTMENT OF DEFENSE	6947489	AGMT DTD 3/31/2022	Design and Optimization of a JP-8 injector for meso-combustors	12.RD	131,499	-
			Total for Mesodyne		**131,499**	**-**
Launcher Inc.						
DEPARTMENT OF DEFENSE	6948653	AGMT DTD 9/16/2022	STTR: Active Debris Removal CONOPS for Launcher's Orbiter	12.RD	74,925	-
			Total for Launcher Inc.		**74,925**	**-**
Blue Cloak, LLC						
DEPARTMENT OF DEFENSE	6949085	AGMT. DTD. 02/08/2021	Collecting and Processing Wireless Spectrum Data	12.RD	14,927	-
			Total for Blue Cloak, LLC		**14,927**	**-**

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Target Arm, Inc.						
DEPARTMENT OF DEFENSE	6945996	AGMT. DTD. 02/26/2021	Air Force Arsenal Aircraft: Persistent Air Dominance with UCAVs	12.RD	-4,161	-
			Total for Target Arm, Inc.		**-4,161**	**-**
Candelytics, Inc						
DEPARTMENT OF DEFENSE	6948075	AGMT. DTD. 08/01/2022	3D Data Analysis and Digital Documentation for Rapid Object Recognition	12.RD	153,400	-
DEPARTMENT OF DEFENSE	6947029	AGRMT. DTD. 4/1/2021	3D Data Management and Digital Documentation for Rapid Object Recognition	12.RD	14,495	-
			Total for Candelytics, Inc		**167,895**	**-**
Alexandria Health LLC						
DEPARTMENT OF DEFENSE	6949117	AGMT. DTD. 11/15/2022	Benchmarking Low Volume / High Risk Trauma Procedures to Improve Surgical Outcomes and Improve Readiness using Machine-Learning Algorithms	12.RD	134,789	-
			Total for Alexandria Health LLC		**134,789**	**-**
Federal Foundry						
DEPARTMENT OF DEFENSE	6948416	AGRMT DTD 08/05/2022	Profit Analysis Aligned to Performer Go/No-Go Decision Criteria	12.RD	170,014	-
DEPARTMENT OF DEFENSE	6947842	AGRMT DTD. 2/14/2022	IP Value Centric Models for R&D Automated Profit Incentive Determination (RAPID) STTR Phase 1	12.RD	72,982	-
			Total for Federal Foundry		**242,996**	**-**
Kall Morris Inc.						
DEPARTMENT OF DEFENSE	6949381	AGRMT DTD. 2/11/2022	STTR: Comprehensive RSO Salvage with Megaconstellation Repurposing	12.RD	76,186	-
			Total for Kall Morris Inc.		**76,186**	**-**
Distributed Spectrum						
DEPARTMENT OF DEFENSE	6949695	AGRMT DTD. 3/6/2023	RF Signature Detection and Classification System	12.RD	22,499	-
			Total for Distributed Spectrum		**22,499**	**-**
XAnalytix Systems, LLC						
DEPARTMENT OF DEFENSE	6949657	AGRMT. DTD 3-1-2023	Co-Orbital Threat Prediction and Assessment	12.RD	12,790	-
			Total for XAnalytix Systems, LLC		**12,790**	**-**

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University of Chicago						
DEPARTMENT OF DEFENSE	6941412	AWD100348 (SUB00000079)	Design and optimization of synthesizable materials with targeted quantum characteristics	12.800	33,488	-
DEPARTMENT OF DEFENSE	6948061	AWD103286 (SUB00000755)	Design and Optimization of Synthesizable Materials with Targeted Quantum Characteristics	12.800	106,859	-
			Total for University of Chicago		**140,347**	**-**
University of California-Santa Barbara						
DEPARTMENT OF DEFENSE	6940947	KK2014	Quantum Codes, Tensor Networks, and Quantum Spacetime	12.800	337,081	-
DEPARTMENT OF DEFENSE	6935172	KK1713	Neural foundations of expertise based on optimal decision-making, physical control and responses to stress	12.431	233,199	-
DEPARTMENT OF DEFENSE	6937076	KK1808	From Data-Driven Operator Theoretic Schemes to Predication, Inference, and Control of Systems	12.431	237,318	-
DEPARTMENT OF DEFENSE	6948791	SUBAWARD KK1957-29	Fundamental Biological Factors Underlying Human Performance	12.RD	123,658	-
DEPARTMENT OF DEFENSE	6940558	SUBAWARD NO. KK1955	ICB UARC projects - Research Projects	12.431	661,770	-
DEPARTMENT OF DEFENSE	6940755	SUBAWARD NO. KK1957-03	Fundamental Biological Factors Underlying Human Performance	12.RD	8,155	-
DEPARTMENT OF DEFENSE	6946573	SUBAWARD NO. KK1957-18	Fundamental Biological Factors Underlying Human Performance	12.RD	255,958	-
			Total for University of California-Santa Barbara		**1,857,139**	**-**
University of New Hampshire						
DEPARTMENT OF DEFENSE	6946454	L0149	Radio Interferometer for Thunderstorm Studies	12.800	5,305	-
			Total for University of New Hampshire		**5,305**	**-**
GE Medical Systems Information Technology, Inc.						
DEPARTMENT OF DEFENSE	6942343	PO 401134429	Measuring Biological aptitude	12.RD	67,634	-
			Total for GE Medical Systems Information Technology, Inc.		**67,634**	**-**
GE Global Research						
DEPARTMENT OF DEFENSE	6948406	PO 401134429	Measuring Biological aptitude	12.RD	358,526	-
DEPARTMENT OF DEFENSE	6948895	PROJECT 261673 / PO 401180662	Inter-Metallic MORphogen Tailored Activity Lithium (IMMORTAL) Battery	12.RD	196,036	-
DEPARTMENT OF DEFENSE	6947359	PO 401170010	Human-inspired IDentity Extraction (HIDE) [IARPA BRIAR]	12.RD	771,355	-

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			Total for GE Global Research		**1,325,917**	**-**
State University of New York						
DEPARTMENT OF DEFENSE	6947491	R1302889	Space Object Understanding and Reconnaissance of Complex Events (SOURCE)	12.800	74,471	-
			Total for State University of New York		**74,471**	**-**
UES, Inc.						
DEPARTMENT OF DEFENSE	6949257	S-210-11E-002	Functional Responsive Experimentation for Systems and Humans (FRESH, TO 01)	12.RD	68,635	-
DEPARTMENT OF DEFENSE	6948979	S-210-21P-001	Polymers and Responsive Materials Research, Development, and Exploration	12.RD	15,667	-
DEPARTMENT OF DEFENSE	6942017	SUB NO. S-111-051-006	Synthetic Biology to Access Unnatural Porphyrins as Intermediates for Photonic Applications	12.RD	6,086	-
			Total for UES, Inc.		**90,388**	**-**
Applied Research Associates, Inc.						
DEPARTMENT OF DEFENSE	6946947	S-D00243-05-IDIQ-MIT	Machine Intelligence Solutions for Nuclear Explosion Monitoring (MINEM)	12.RD	62,949	-
			Total for Applied Research Associates, Inc.		**62,949**	**-**
Johns Hopkins University						
DEPARTMENT OF DEFENSE	6945997	SUB #2005171653, AGMT DTD 9/1/21	The Science of Learning from Observations: Leveraging Scientific Computation with Intrinsic Machine Learning Models and Lifelong Learning	12.800	19,363	-
			Total for Johns Hopkins University		**19,363**	**-**
Siemens Corporation, Corporate Technology						
DEPARTMENT OF DEFENSE	6944760	SUB AGREEMENT NO. 198-02	Systemic Generative Engineering	12.RD	165,125	-
			Total for Siemens Corporation, Corporate Technology		**165,125**	**-**
University of Washington						
DEPARTMENT OF DEFENSE	6941764	UWSC11381 BPO42935	Neural-inspired sparse sensing and control for agile flight	12.800	255,174	-
DEPARTMENT OF DEFENSE	6941979	UWSC11420	2D MAGIC: New Science from Two-Dimensional MAGnetIC Heterostructures	12.800	298,695	-
DEPARTMENT OF DEFENSE	6946930	UWSC13445	Scalable Hybrid-optics Integrated Night-vision Eyeglass (SHINE)	12.RD	188,610	-

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Prime Sponsor Name	Project WBS id	Passthrough Number	WBS Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
			Total for University of Washington		**742,479**	**-**
Wright Brothers Institute						
DEPARTMENT OF DEFENSE	6944516	WBPO-21-018-MIT	Probiotic interventions to reduce fatigue by maintaining brain ATP levels	12.RD	50,497	-
DEPARTMENT OF DEFENSE	6947011	WBSRA-22-008-MIT	Y2: Reducing urea/calcium needs using engineered bacteria for on-site co-production and release	12.800	85,010	-
			Total for Wright Brothers Institute		**135,507**	**-**
University of Wisconsin-Madison						
DEPARTMENT OF DEFENSE	6941698	0000000208	From Particles to Landforms: Integrating Theory, Computation, Experiments and Field Data to Overcome Empiricisms	12.431	140,027	-
			Total for University of Wisconsin-Madison		**140,027**	**-**
Tufts University						
DEPARTMENT OF DEFENSE	6948756	104564-00001/PO EP0221331	Functional Protein□Metal Composites via Modeling and Selection	12.431	17,502	-
			Total for Tufts University		**17,502**	**-**
Carnegie-Mellon University						
DEPARTMENT OF DEFENSE	6943335	1130252-431282	Individualized Adaptation in Human Agent Teams	12.630	138,112	-
DEPARTMENT OF DEFENSE	6945392	SUBCONTRACT NO. 1130233-442111	Contrastive dissection to visualize the differences between synthetic and real trained representations	12.431	192,123	-
DEPARTMENT OF DEFENSE	6947554	1190068-455963	RECTIFY: Rechargeability Enabled by Coated inTerfaces and dIFferentable phYsical modeling	12.910	308,726	-
DEPARTMENT OF DEFENSE	6949789	1130233-469602	Multimodal World Models	12.431	99,365	-
DEPARTMENT OF DEFENSE	6945204	SUBCONTRACT NO. 1990695-439018	Accelerating Human Augmentation Through Artificial Intelligence & Autonomous Systems	12.RD	4,336	-
			Total for Carnegie-Mellon University		**742,662**	**-**
Brigham & Women's Hospital						
DEPARTMENT OF DEFENSE	6942602	122094	Developing targeted chemotherapeutics for malignant brain tumors using an innovative	12.420	5,036	-
DEPARTMENT OF DEFENSE	6943084	122096	A Novel Approach to Lower Extremity Residual Limb Revision to Augment Volitional Motor Control, Restore Proprioception and Reverse Limb Atrophy	12.420	346,053	-

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DEPARTMENT OF DEFENSE	6940336	SUBAWARD 117951	A Novel Approach to Lower Extremity Amputation to Augment Volitional Motor Control and Restore Proprioception	12.420	63,321	-
DEPARTMENT OF DEFENSE	6940338	SUBAWARD 119948	A Novel Approach to Upper Extremity Amputation to Augment Volitional Motor Control and Restore Proprioception	12.420	308,426	-
			Total for Brigham & Women's Hospital		**722,836**	**-**
Harvard University						
DEPARTMENT OF DEFENSE	6936171	134062-5093041	Imaging and Control of Biological Transduction using NV-Diamond	12.431	145,171	-
DEPARTMENT OF DEFENSE	6944781	134119-5110647	Topological Superconductivity using Layered Materials	12.431	12,593	-
DEPARTMENT OF DEFENSE	6943704	134371-5113608	Quantum optimization with programmable simulators based on atom arrays	12.431	684,308	-
DEPARTMENT OF DEFENSE	6946146	134396-5117987	Multi-Functional Devices in Precisely Engineering van der Waals Homojunctions	12.431	227,257	-
DEPARTMENT OF DEFENSE	6946638	124354	George Varnavides AY 21-22 - Billing Agreement	12.910	-910	-
DEPARTMENT OF DEFENSE	6943286	130417-5114573	Next-Generation Materials for Oxygen Generation, Transport, and Storage in the Undersea Environment	12.300	68,819	-
			Total for Harvard University		**1,137,238**	**-**
Duke University						
DEPARTMENT OF DEFENSE	6939801	313-0837	Quantum control based on real-time environment analysis by spectator qubits	12.431	132,257	-
			Total for Duke University		**132,257**	**-**
Northeastern University						
DEPARTMENT OF DEFENSE	6943253	504141-78050	COVID-19: Engineered Materials And Materials Design for Engineered Materials (EMMDEM) Year 3	12.431	34,676	-
DEPARTMENT OF DEFENSE	6948542	504162-78050	Programming Indigenous Gut Bacteria to Prevent Colorectal Cancer Induced by Microbial Carcinogen	12.RD	12,354	-
			Total for Northeastern University		**47,030**	**-**
University of Pennsylvania						
DEPARTMENT OF DEFENSE	6939085	572622	ARCHES: Autonomous Resilient Cognitive Heterogeneous Swarms	12.630	390,519	-
DEPARTMENT OF DEFENSE	6949914	586938	ARCHES: Autonomous Resilient Cognitive Heterogeneous Swarms Y6	12.630	280,338	-
DEPARTMENT OF DEFENSE	6944135	SUB# 580416 / PO# 4531469	High-speed Off-Road Dataset Collection	12.630	322,236	-

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Prime Sponsor Name	Project WBS id	Passthrough Number	WBS Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
DEPARTMENT OF DEFENSE	6937175	572339	New phase change materials for photonics: from in-silico design to novel device concepts	12.300	131,722	-
DEPARTMENT OF DEFENSE	6947348	584551	Low Cost Autonomous Navigation & Semantic Mapping in the Littorals	12.630	241,032	-
DEPARTMENT OF DEFENSE	6939157	PO 4928948, 4673492, 574340	Blueprint for design and assembly of multifunctional, adaptive materials using the nanocrystal periodic table	12.300	328,187	-
DEPARTMENT OF DEFENSE	6949070	SUBAWARD NO. 585666	Uncertainty-based Active Self-Learning for Perception	12.300	53,469	-
			Total for University of Pennsylvania		**1,747,503**	**-**
Somagenics, Inc.						
DEPARTMENT OF DEFENSE	6948764	AGRMNT DTD 9/1/22	Acceleration of burn healing through a novel sustained-release smart dressing	12.420	94,341	-
			Total for Somagenics, Inc.		**94,341**	**-**
Georgia Institute of Technology						
DEPARTMENT OF DEFENSE	6941447	AWD-000084-G3	Formal Foundations of Algorithmic Matter and Emergent Computation	12.431	270,018	-
DEPARTMENT OF DEFENSE	6938924	RK015-G3/AWD-102036-G3/PO-5011372	Leveraging a New Theoretical Paradigm to Enhance Interfacial Thermal Transport in Wide Bandgap Power Electronics	12.300	122,860	-
DEPARTMENT OF DEFENSE	6949925	SUBCONTRACT NO. D9104-S22	NSA/R23; Modeling the Adversarial Dynamics of APTs and Defenders; Coevolution, Learning, and Decision Calculus.	12.RD	115,747	-
			Total for Georgia Institute of Technology		**508,625**	**-**
Texas A & M						
DEPARTMENT OF DEFENSE	6945534	M2101903	Extreme Mechanics of Bio-inspired Mixed-Dimensional Carbon Nanostructures with Thermally Robust Interfacial Bonds	12.431	41,455	-
			Total for Texas A & M		**41,455**	**-**
University of California - Berkeley						
DEPARTMENT OF DEFENSE	6945606	PO BB01479131/ SUBAWARD 00010373	Quantum Adiabatic Interferometry	12.431	8,965	-
DEPARTMENT OF DEFENSE	6946436	SUB#00010865/PO#BB0166 2896	Collaborative Hierarchical and Agile Responsive Materials (CHARM)	12.431	105,138	-
DEPARTMENT OF DEFENSE	6943071	10333	:MESS: Model Building, Exploratory, Social System	12.910	247,645	-
DEPARTMENT OF DEFENSE	6943414	SUB 00010360 PO #BB01624014	Verifying Computations Securely and Robustly in Post-Quantum Era	12.910	307,178	-

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DEPARTMENT OF DEFENSE	6946583	00010803, PO BB01666803	Compositional Scene Understanding with Self-Supervised Object-Centric Dorso-Ventral Neural Networks	12.300	626,804	-
DEPARTMENT OF DEFENSE	6947076	00010918	Frugal, Lifelong-Learning Control Systems with Execution Guarantees	12.300	168,905	-
DEPARTMENT OF DEFENSE	6947056	00010933	Design rules of monolayer composite thin films as catalytic protective barriers	12.RD	60,310	-
DEPARTMENT OF DEFENSE	6940831	SUBAGREEMENT NO. 00010066/ PO BB01645201	Rational Design of Statistical Heteropolymers as Biomimetic Enzymes and Binders	12.351	241,589	-
			Total for University of California - Berkeley		**1,766,534**	**-**
University of Massachusetts - Amherst						
DEPARTMENT OF DEFENSE	6949073	PO# WA01334478/SUB00000116	Determining Mechanistic Links Between Traumatic Brain Injury, Stress Response, and Neurodegeneration	12.420	32,254	-
			Total for University of Massachusetts - Amherst		**32,254**	**-**
University of Michigan						
DEPARTMENT OF DEFENSE	6940978	PO3005498246/SUBK00010160	Near-Field Radiative Heat Transfer and Energy Conversion in Nanogaps of Nano- and Meta-Structured Materials	12.431	57,716	-
DEPARTMENT OF DEFENSE	6938346	3004811123	Applications Driving Architectures (ADA) Center	12.RD	212,632	-
DEPARTMENT OF DEFENSE	6940785	SUBK00009163 / PO3005498095	Rapid Autopilot Prototyping for Minimally Modeled Aircraft	12.300	50,594	-
			Total for University of Michigan		**320,942**	**-**
University of Arizona						
DEPARTMENT OF DEFENSE	6947539	PURCHASE ORDER NO. 641689	Generation, manipulation, control, and applications of entanglement in a large network	12.431	325,366	-
			Total for University of Arizona		**325,366**	**-**
Research Foundation of SUNY-Buffalo						
DEPARTMENT OF DEFENSE	6941275	R1173649	Molecular design and assembly towards conducting ferroic crystals	12.431	14,923	-
			Total for Research Foundation of SUNY-Buffalo		**14,923**	**-**
California Institute of Technology						
DEPARTMENT OF DEFENSE	6939667	S396000	Dynamics in Photo-Doped Metastable States	12.431	1,865	-
DEPARTMENT OF DEFENSE	6949119	S581840	Disorder engineering: a Geometry-Enhanced Network Theory for irregular METamaterials (GENT-MET)	12.431	71,390	-

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			Total for California Institute of Technology		**73,255**	**-**
University of Southern California						
DEPARTMENT OF DEFENSE	6946124	SCON-00002258	Anomalous Polar Textures in Quasi-1D Chalcogenides and Heterostructures	12.431	187,738	-
DEPARTMENT OF DEFENSE	6939922	107215392	Livtronics: Living Electronics for Biologically-Enhanced Sensing, Computing, and Signal Transmission	12.300	488,517	-
DEPARTMENT OF DEFENSE	6942367	125046653	Multi-modal Open World Grounded Learning and Inference (MOWGLI)	12.910	96,541	-
			Total for University of Southern California		**772,796**	**-**
Ohio State University						
DEPARTMENT OF DEFENSE	6948984	SPC-1000007046 | GR129057	Science and Technology of Next Generation mm-Wave and THz AlGan Transistors	12.431	137,226	-
			Total for Ohio State University		**137,226**	**-**
LongWave Photonics LLC						
DEPARTMENT OF DEFENSE	6940267	STTR AGMT UNDER W911NF18C0097	STTR Phase II: Tunable Active HEterodyne THz Imager (TAHETI)	12.RD	-6,866	-
DEPARTMENT OF DEFENSE	6947159	STTR AGMT UNDER W911NF21C0054	Tunable Active HEterodyne THz Imager (TAHETI)	12.RD	185,277	-
			Total for LongWave Photonics LLC		**178,411**	**-**
LaunchBay LLC						
DEPARTMENT OF DEFENSE	6947081	SUB# LB-113-1/PO# 113001	Novel High Performance Oriented Films for Ballistic Protection	12.RD	25,814	-
			Total for LaunchBay LLC		**25,814**	**-**
UI LABS d/b/a MXD USA (MxD)						
DEPARTMENT OF DEFENSE	6946581	SUBAWARD NO.20-18-01-04	MDX Master Agreement	12.RD	25,327	-
			Total for UI LABS d/b/a MXD USA (MxD)		**25,327**	**-**
BAE Systems						
DEPARTMENT OF DEFENSE	6942890	1056208	CAML: MINDFUL	12.910	187,301	-
			Total for BAE Systems		**187,301**	**-**
QLEDCures, LLC						
DEPARTMENT OF DEFENSE	6948943	140D0422C0020	DNA Origami Guided Assembly of Monolayer Quantum Dot Pixels for Flexible Electroluminescent Displays	12.RD	83,146	-

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			Total for QLEDCures, LLC		**83,146**	**-**
Harvard Medical School						
DEPARTMENT OF DEFENSE	6946184	152318.5112612.0014	STOP PAIN: Safe Therapeutic Options for Pain and Inflammation	12.910	88,967	-
			Total for Harvard Medical School		**88,967**	**-**
SYSTEMS & TECHNOLOGY RESEARCH LLC						
DEPARTMENT OF DEFENSE	6941663	2019-0013	Learning with Optimal Labels (LOL)	12.RD	101,781	-
DEPARTMENT OF DEFENSE	6948058	2020-0071/10372.11.1101	Space-Based Machine Automated Recognition Technique (SMART) Program	12.RD	149,260	-
DEPARTMENT OF DEFENSE	6945052	SUBCONTRACT 2020-0071/2021-2010000004/10372.10.2001	Space-Based Machine Automated Recognition Technique (SMART) Program	12.RD	-16,662	-
DEPARTMENT OF DEFENSE	6950022	SUBCONTRACT 2023-0023	Hidden ActivitY Signal and Trajectory Anomaly Characterization (HAYSTAC)	12.RD	14,598	-
			Total for SYSTEMS & TECHNOLOGY RESEARCH LLC		**248,977**	**-**
Aarno Labs LLC						
DEPARTMENT OF DEFENSE	6943914	2020-MIT-AMP-01	TA2 - Multifocal Relational Analysis for Assured Micropatching (MRAM)	12.RD	268,030	-
			Total for Aarno Labs LLC		**268,030**	**-**
The Broad Institute, Inc.						
DEPARTMENT OF DEFENSE	6946937	5001153-5500001656	Microbial immunotherapy using chimeric small molecules	12.910	139,328	-
DEPARTMENT OF DEFENSE	6946915	5001155-5500001656	Microbial immunotherapy using chimeric small molecules	12.910	615,541	-
			Total for The Broad Institute, Inc.		**754,869**	**-**
University of Tennessee						
DEPARTMENT OF DEFENSE	6944283	9500074403	Phytosensors 2.0	12.910	34,364	-
			Total for University of Tennessee		**34,364**	**-**
Ecovative Design LLC						
DEPARTMENT OF DEFENSE	6939026	AGT DATED 6/30/18	Sustainable Biologically Active Modular Building Materials	12.RD	212,505	-
			Total for Ecovative Design LLC		**212,505**	**-**

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Aurora Flight Sciences Corporation						
DEPARTMENT OF DEFENSE	6947719	AMA-21-0003	Resource-Aware Learning to Share for Distributed Lifelong Multi-Agent Learning	12.RD	105,258	-
DEPARTMENT OF DEFENSE	6949864	AMA-23-0004	Fast Adaptation & Learning for Control ONline (FALCON)	12.RD	32,079	-
DEPARTMENT OF DEFENSE	6946644	SUBCONTRACT NO. AMA-21-0001	End-to-End Learning of Differentiable Surrogates for Mixed-Signal PCB Simulations	12.RD	15,071	-
			Total for Aurora Flight Sciences Corporation		**152,408**	**-**
Aurora Flight Sciences RDC						
DEPARTMENT OF DEFENSE	6948781	AMA-22-0002	Enabling Confidence (EC)	12.RD	63,143	-
			Total for Aurora Flight Sciences RDC		**63,143**	**-**
IBM Thomas J. Watson Research Center						
DEPARTMENT OF DEFENSE	6942927	CW3013540\PO4700205308	Building Machine Common Sense the Human Way	12.RD	1,416,706	-
DEPARTMENT OF DEFENSE	6943356	CW3031624 / PO# 4700229565	Transfer, Augmentation and Automatic Learning with Less Labels	12.RD	-2,695	-
DEPARTMENT OF DEFENSE	6945836	CW3031624 / PO# 4700346953	Transfer, Augmentation and Automatic Learning with Less Labels	12.RD	78,475	-
			Total for IBM Thomas J. Watson Research Center		**1,492,486**	**-**
University of Virginia						
DEPARTMENT OF DEFENSE	6938713	GG12078.PO #2182122	Ultrasmall skyrmion synthesis guided by high throughput computational materials discovery to advance texitronics	12.910	-1,545	-
			Total for University of Virginia		**-1,545**	**-**
NVIDIA Corporation						
DEPARTMENT OF DEFENSE	6938939	PO 56090640	Symphony: Orchestrating Sparse and Dense Data for Efficient Computation	12.RD	15,308	-
			Total for NVIDIA Corporation		**15,308**	**-**
Teledyne FLIR, LLC						
DEPARTMENT OF DEFENSE	6945506	PO# 1310121015/AGRMT EFFECTIVE 5/17/2021	Integrated Soldier Protective System for Unburdened Chem-Bio Protection	12.RD	8,183	-
			Total for Teledyne FLIR, LLC		**8,183**	**-**
RTX BBN Technologies, Inc.						

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DEPARTMENT OF DEFENSE	6945522	PO# 4202187793 BBN REF#90113	SYMBIANT	12.RD	26,777	-
			Total for RTX BBN Technologies, Inc.		**26,777**	**-**
BBN Technologies Corporation						
DEPARTMENT OF DEFENSE	6943761	PO# 4202290027 BBN REF# 90144	Bullet Train	12.RD	935,754	-
			Total for BBN Technologies Corporation		**935,754**	**-**
Perspecta Labs Inc.						
DEPARTMENT OF DEFENSE	6939771	PO-0016764 PRIME HR001117S0035	WILEE: Agent-Based Threat Detection and Adaptive Collection for Cyber Hunting at Scale	12.RD	-1,155	-
DEPARTMENT OF DEFENSE	6944048	PO-0022190	CICADA: Coevolutionary Intelligent COAs for Adversarial Decisions against Allies	12.RD	-1,309	-
			Total for Perspecta Labs Inc.		**-2,464**	**-**
Rice University						
DEPARTMENT OF DEFENSE	6944794	R1A26H	Magnetic optical and acoustic neural access	12.RD	-140	-
			Total for Rice University		**-140**	**-**
Charles River Analytics						
DEPARTMENT OF DEFENSE	6942396	SC1911601	Compositionally Organized Learning To Reason About Novel Experience (COLTRANE)	12.910	20,542	-
DEPARTMENT OF DEFENSE	6949090	SC2214301	Compositionally Organized Learning To Reason About Novel Experience (COLTRANE) for the DARPA SAIL-ON program	12.RD	276,108	-
			Total for Charles River Analytics		**296,650**	**-**
Dynamic Object Language Labs, Inc.						
DEPARTMENT OF DEFENSE	6944821	SUB UNDER HR0011-20-C-0035	Robust Ideal Team Assistant (RITA)	12.RD	425,400	-
DEPARTMENT OF DEFENSE	6948881	W911NF-22-C-0060	Multi-Modal Knowledge Tracking and Storytelling (MM-KTS)	12.RD	586,764	-
			Total for Dynamic Object Language Labs, Inc.		**1,012,164**	**-**
Princeton University						
DEPARTMENT OF DEFENSE	6940192	SUB0000294	Re-configurable IR frequency comb spectronscopic sending platform for chemical threat detection	12.910	62,395	-
			Total for Princeton University		**62,395**	**-**

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Woods Hole Oceanographic Institution						
DEPARTMENT OF DEFENSE	6948853	SUBAWARD A101593/49011500	Enabling a Batteryless & Perpetual Subsea IoT via Underwater Backscatter	12.RD	185,679	-
			Total for Woods Hole Oceanographic Institution		**185,679**	**-**
The University of Central Florida						
DEPARTMENT OF DEFENSE	6948863	SUBAWARD GR105570	Coherent Upconversion by Broadband Extreme-Confinement Metamaterials (CUBECoM)	12.910	3,893	-
			Total for The University of Central Florida		**3,893**	**-**
Sri International						
DEPARTMENT OF DEFENSE	6945179	SUBCONTRACT PO55019	Formally-verified Accelerator for Ring-based Secure Iterative-evaluation of Data under Encryption (FARSIDE)	12.RD	98,442	-
			Total for Sri International		**98,442**	**-**
Haverford College						
DEPARTMENT OF DEFENSE	6942287	SUBK DTD. 12/15/2019	Discovering Reactions and Uncovering Mechanisms of Hybrid Organohalide Perovskite Formation	12.RD	154,105	-
			Total for Haverford College		**154,105**	**-**
Scientific Systems Company, Incorporated						
DEPARTMENT OF DEFENSE	6943307	# SC-1699-01	Explanaton Systems	12.RD	87,838	-
DEPARTMENT OF DEFENSE	6947088	SC-1741-01	Artificial Intelligence and Machine Learning-Based Autonomous Mission Planning for Intelligence, Surveillance, and Reconnaissance (ISR) Missions	12.RD	11,461	-
DEPARTMENT OF DEFENSE	6947146	SC-1745-01	STTR Phase 1: Topology-Agnostic Resource Management and Control (TARMAC)	12.RD	36,299	-
			Total for Scientific Systems Company, Incorporated		**135,598**	**-**
University of California-San Diego						
DEPARTMENT OF DEFENSE	6939646	108548654	RAIDER: Resilient Actionable Intelligence for Distributed Environment understanding and Reasoning	12.300	16,622	-
			Total for University of California-San Diego		**16,622**	**-**
Boston University						
DEPARTMENT OF DEFENSE	6935193	4500002204	NEURAL CIRCUITS UNDERLYING SYMBOLIC PROCESSING IN PRIMATE CORTEX AND BASAL GANGLIA	12.300	43,618	-

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DEPARTMENT OF DEFENSE	6942565	4500003329	Neuro_autonomy: Neuroscience-Inspired Perception, Navigation, and Spatial Awareness for Autonomous Robots	12.300	643,637	-
			Total for Boston University		**687,255**	**-**
Virginia Polytechnic Institute & State University						
DEPARTMENT OF DEFENSE	6941716	450677-19825	Science of Tracking, Control, and Optimization of Information Latency for Dynamic Military IoT Systems	12.300	253,445	-
			Total for Virginia Polytechnic Institute & State University		**253,445**	**-**
Cornell University						
DEPARTMENT OF DEFENSE	6937216	81825-10911	PERISCOPE: Perceptual Representations for Actions, Composition, and Verification	12.300	161,343	-
DEPARTMENT OF DEFENSE	6941679	87748-11235	Modeling and Planning with Human Impressions of Robots	12.300	124,533	-
			Total for Cornell University		**285,876**	**-**
University of Minnesota						
DEPARTMENT OF DEFENSE	6937286	A006141803	Predicting Turbulent Multi-Phase Flows with High Fidelity: A Physics-Based Approach	12.300	3,230	-
			Total for University of Minnesota		**3,230**	**-**
Cascade Technologies, Inc.						
DEPARTMENT OF DEFENSE	6945418	AGMT DATED 3/25/2021	Software developments for large-eddy simulations on GPU-accelerated systems	12.RD	220,003	-
			Total for Cascade Technologies, Inc.		**220,003**	**-**
Metis Design Corporation						
DEPARTMENT OF DEFENSE	6942204	AGMT DTD 1/23/2020	Scalable Manufacturing of Composite Components using Nanostructured Heaters - STTR Phase 2	12.RD	109,181	-
DEPARTMENT OF DEFENSE	6943603	STTR AGRMNT DTD. 5/29/2020	N19A-T003: Phase 2 - Interlaminar Reinforcement of Composite Rotorcraft Components via Tailored Nanomorphologies of Aligned Carbon Nanotubes	12.RD	89,637	-
			Total for Metis Design Corporation		**198,818**	**-**
Pliant Energy Systems LLC						
DEPARTMENT OF DEFENSE	6946059	AGMT DTD 9/07/2021	Payload Autonomy and Navigation for the Pliant C-Ray Platform	12.RD	118,053	-
			Total for Pliant Energy Systems LLC		**118,053**	**-**

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Pendar Technologies LLC						
DEPARTMENT OF DEFENSE	6945707	AGREEMENT DATED 5/25/2021	Quantum cascade laser array with integrated wavelength beam combining (STTR Phase II)	12.RD	164,350	-
			Total for Pendar Technologies LLC		**164,350**	**-**
Institute for the Study of Learning & Expertise						
DEPARTMENT OF DEFENSE	6943551	N00014-20-1-2643	Rapid Acquisition of Hierarchical Procedures from Instructional Documents	12.300	159,554	-
			Total for Institute for the Study of Learning & Expertise		**159,554**	**-**
Boston Engineering Corporation						
DEPARTMENT OF DEFENSE	6947663	PO #30061	Automated Simulation and Analysis of Multi-Vehicle Autonomous Missions	12.RD	11,436	-
			Total for Boston Engineering Corporation		**11,436**	**-**
Florida State University						
DEPARTMENT OF DEFENSE	6945645	R000002829	ESRDC: Electric Ship Research and Development Consortium 2021 - 2025	12.300	301,157	-
DEPARTMENT OF DEFENSE	6935158	R01849	ESRDC - FSU and MIT Sea Grant Collaboration	12.300	212,425	-
			Total for Florida State University		**513,582**	**-**
Dartmouth College						
DEPARTMENT OF DEFENSE	6943533	R1387	Integrated Foundations of Sensing, Modeling, and Data Assimilation for Sea Ice Prediction	12.300	428,403	-
			Total for Dartmouth College		**428,403**	**-**
SeeByte						
DEPARTMENT OF DEFENSE	6946919	SC0002-21	Feasibility Study for a Multi-Architecture Autonomy Framework	12.RD	59,470	-
			Total for SeeByte		**59,470**	**-**
Draper Laboratory Incorporated						
DEPARTMENT OF DEFENSE	6948936	SC001-1442	Nanoparticle-based Optical Components and Coatings (NOCC)	12.300	157,825	-
			Total for Draper Laboratory Incorporated		**157,825**	**-**
University of Illinois						

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DEPARTMENT OF DEFENSE	6943393	SUB# 099963-17888	Robust Photonic Materials with High-Order Topological Protection	12.300	273,697	-
			Total for University of Illinois		**273,697**	**-**
Vanderbilt University						
DEPARTMENT OF DEFENSE	6944976	P22011798; UNIV62036	Cognitive Attack Planning Spanning from Threats to Vulnerabilities CLIN 1	12.RD	273,876	-
DEPARTMENT OF DEFENSE	6940344	SUBCONTRACT UNIV60073	Strategic Sensing and Resource Allocation for Infrastructure Resilience	12.RD	61,173	-
			Total for Vanderbilt University		**335,049**	**-**
Massachusetts Technology Collaborative						
DEPARTMENT OF DEFENSE	6950066	07120-OLDCC-MASSTECH-01	New England Regional Defense Sector Modernization	12.617	46,352	-
			Total for Massachusetts Technology Collaborative		**46,352**	**-**
BAE Systems Info & Electronic Systems Integration, Inc						
DEPARTMENT OF DEFENSE	6946043	1111254	Investigation of Small Solid Rocket Performance to Support to the Kenai Program	12.RD	146,265	-
			Total for BAE Systems Info & Electronic Systems Integration, Inc		**146,265**	**-**
HRL Laboratories, LLC						
DEPARTMENT OF DEFENSE	6942812	15026-503667-DS	Microwave Quantum Engineering for Semiconductor Quantum Dot Qubits	12.RD	1	-
DEPARTMENT OF DEFENSE	6946444	21004-213647-QS	MIRO	12.RD	97,316	-
			Total for HRL Laboratories, LLC		**97,317**	**-**
ATCC Global						
DEPARTMENT OF DEFENSE	6947162	2021-HOSTBASED-10003-02	Host-based anti-microbial peptides as therapeutic strategies for alphavirus infection - Option Period 2	12.351	-13,179	-
			Total for ATCC Global		**-13,179**	**-**
Orbit Logic Incorporated						
DEPARTMENT OF DEFENSE	6949332	AGMT DATED 9/23/22	SOFAR – Satellite Onboard Fault Attribution and Response	12.RD	6,168	-
			Total for Orbit Logic Incorporated		**6,168**	**-**
ESPACE						
DEPARTMENT OF DEFENSE	6928454	AGMT. DTD. 8/14/13	IMPACT: Validation of iEPS in Space	12.RD	62,335	-

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			Total for ESPACE		**62,335**	**-**
Arizona State University						
DEPARTMENT OF DEFENSE	6946570	ASUB00000951	Ferroelectric Capacitive Materials and Devices for Next Generation AI Hardware	12.RD	202,051	-
			Total for Arizona State University		**202,051**	**-**
Radiation Monitoring Devices						
DEPARTMENT OF DEFENSE	6949492	C23-08	Chalcogenide-based Mid-Infrared High-Efficiency Broadband Diffraction Gratings	12.RD	45,000	-
			Total for Radiation Monitoring Devices		**45,000**	**-**
George Mason University						
DEPARTMENT OF DEFENSE	6948978	E2060311	Host-based anti-microbial peptides as therapeutic strategies for alphavirus infection - Option Period 3	12.351	49,995	-
			Total for George Mason University		**49,995**	**-**
Advanced Functional Fabrics of America (AFFOA)						
DEPARTMENT OF DEFENSE	6944418	EXHIBIT 1-A	Shape-Shifting Climate-Adaptive Garments	12.800	-1,727	-
			Total for Advanced Functional Fabrics of America (AFFOA)		**-1,727**	**-**
Ministry of Defense of Israel						
DEPARTMENT OF DEFENSE	6950116	PO 4441267690	Effects of Oxidizing Environments on Carbon-Based Materials	12.RD	90	-
DEPARTMENT OF DEFENSE	6941452	PO 4440883829	Heterogeneous Multi-Agent Systems for Maritime Applications	12.RD	19,120	-
DEPARTMENT OF DEFENSE	6938047	PO 4440884397	Multifunctional Fiber System for Magnetic Wave Sensing	12.RD	-5,448	-
DEPARTMENT OF DEFENSE	6942162	PO 4441024394	Effects of Oxidizing Environments on Carbon-Based Materials	12.RD	893	-
DEPARTMENT OF DEFENSE	6947211	PO 4441192115	HIgh-Fidelity Qubits and Readout: A proposed Collaboration between MIT and HUJI	12.RD	111,040	-
DEPARTMENT OF DEFENSE	6946283	PO# 4441158191	Novel Multimaterial Fiber System for Magnetic Wave Detection	12.RD	5,309	-
DEPARTMENT OF DEFENSE	6946677	PO#: 4441173554	Autonomous Robotic Swarms: Distributed Coordination and Perception	12.RD	33,698	-
DEPARTMENT OF DEFENSE	6943699	PO4441091005	Coreset Compression Algorithms	12.RD	52,958	-
			Total for Ministry of Defense of Israel		**217,660**	**-**
North American Philips Corporation - Philips L						

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DEPARTMENT OF DEFENSE	6940908	PO # 4520230567/W81XWH18103 32	Intelligent Mobile Ultrasound for Semi-autonomous, Noninvasive Intracranial Pressure Estimation in Pre-Hospital and PFC settings	12.420	180,709	-
			Total for North American Philips Corporation - Philips L		**180,709**	**-**
West Virginia University						
DEPARTMENT OF DEFENSE	6945386	PO#: MM000351862	Discovery and development of small molecule and antibody therapeutics using artificial intelligence and machine learning	12.351	19,374	-
			Total for West Virginia University		**19,374**	**-**
Accenture Federal Services LLC						
DEPARTMENT OF DEFENSE	6949165	S000632	MUTATED – MODELING and UNDERSTANDING using TEMPORAL ANALYSIS of TRANSIENT EARTH DATA	12.RD	74,467	-
DEPARTMENT OF DEFENSE	6946842	S000632, PO# 7500033470	MUTATED – MODELING and UNDERSTANDING using TEMPORAL ANALYSIS of TRANSIENT EARTH DATA	12.RD	97	-
			Total for Accenture Federal Services LLC		**74,564**	**-**
Pennsylvania State University						
DEPARTMENT OF DEFENSE	6943905	SA21-03	Interaction of Ionizing Radiation in Materials University Research Alliance (IIRM-URA)	12.351	543,689	-
			Total for Pennsylvania State University		**543,689**	**-**
Applied Ocean Sciences, LLC						
DEPARTMENT OF DEFENSE	6944020	STTR AGREEMENT DTD 09/18/2020	Local Stochastic Prediction for UUV/USV Environmental Awareness	12.RD	117,134	-
			Total for Applied Ocean Sciences, LLC		**117,134**	**-**
Advanced Regenerative Manufacturing Institute						
DEPARTMENT OF DEFENSE	6941797	SUBAWARD NO. T0060	Differentiation and Monitoring of Mature Liver Organoids for Drug Testing	12.630	19,854	-
			Total for Advanced Regenerative Manufacturing Institute		**19,854**	**-**
			TOTAL for Department of Defense		**36,448,039**	**-**

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DEPARTMENT OF COMMERCE						
Northwestern University						
DEPARTMENT OF COMMERCE	6943285	60052977 MIT	CHiMaD Award-Sub from Northwestern Univeristy	11.609	137,587	-
			Total for Northwestern University		**137,587**	**-**
Advanced Functional Fabrics of America (AFFOA)						
DEPARTMENT OF COMMERCE	6947746	MASTER AGREEMENT NO. 22-B-0039	RAPID ASSISSTANCE FOR CORONAVIRUS ECONOMIC RESPONSE (RACER)	11.619	58,874	-
			Total for Advanced Functional Fabrics of America (AFFOA)		**58,874**	**-**
U Delaware: National Institute for Innovation in Manufacturing Biopharmaceuticals (NIIMBL)						
DEPARTMENT OF COMMERCE	6948632	PC5.2-105	NIIMBL Projects	11.619	76,925	-
DEPARTMENT OF COMMERCE	6946761	UDR0000063 ARP-28	COVID-19: Monoclonal antibody expression in fast alternative hosts: Demonstration & Reference Material	11.619	321,903	-
DEPARTMENT OF COMMERCE	6946724	UDR0000095 ARP-14	COVID-19: Accelerating the manufacture and scale up of virus-like particle vaccines, Non-Residual Decontamination of Clinical Spaces	11.619	692,821	-
DEPARTMENT OF COMMERCE	6946973	UDR0000114 NMBL 1006	Next-generation Modeling of Glycosylation in Fed-batch CHO Cell Culture and Application to Adaptive Process Control of CQAs	11.619	385,767	-
DEPARTMENT OF COMMERCE	6949845	UDR0000359	Next-generation Modeling of Glycosylation in Fed-batch CHO Cell Culture and Application to Adaptive Process Control of CQAs	11.619	94,742	-
			Total for U Delaware: National Institute for Innovation in Manufacturing Biopharmaceuticals (NIIMBL)		**1,572,158**	**-**
			TOTAL for Department of Commerce		**1,768,619**	**-**

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DEPARTMENT OF ENERGY						
Brown University						
DEPARTMENT OF ENERGY	6944472	00001292	Bridging the time scale in exascale computing of chemical systems	81.049	23,108	-
			Total for Brown University		**23,108**	**-**
University of Illinois Board of Trustees						
DEPARTMENT OF ENERGY	6941114	092266-17209	IDENTIFICATION OF FAULTS SUSCEPTIBLE TO INDUCED SEISMICITY: INTEGRATION OF FORWARD AND JOINT INVERSION MODELING, MACHINE LEARNING, AND FIELD-CALIBRATED GEOLOGIC MODELS	81.089	-47	-
			Total for University of Illinois Board of Trustees		**-47**	**-**
Electric Power Research Institute, Inc.						
DEPARTMENT OF ENERGY	6944533	10013019	Build-to-Replace: A New Paradigm for Reducing Advanced Reactor O&M Costs	81.135	164,490	-
			Total for Electric Power Research Institute, Inc.		**164,490**	**-**
Tufts University						
DEPARTMENT OF ENERGY	6949161	104616-00001/PO EP0224907/ENG010	Development of REBCO Cabling Technologies for SC Magnets	81.049	45,051	-
			Total for Tufts University		**45,051**	**-**
AltaRock Energy, LLC						
DEPARTMENT OF ENERGY	6942705	1051-2	Millimeter-Wave Technology Demonstration for Geothermal Direct Energy Drilling	81.135	207,801	-
			Total for AltaRock Energy, LLC		**207,801**	**-**
Worcester Polytechnic Institute						
DEPARTMENT OF ENERGY	6942797	10634-GR	A Catalytic Process to Convert Municipal Solid Waste Components to Energy	81.087	121,224	-
			Total for Worcester Polytechnic Institute		**121,224**	**-**
Carnegie-Mellon University						
DEPARTMENT OF ENERGY	6943896	1070259-433468	High-fidelity Accelerated Design of High-performance Electrochemical Systems	81.135	-4,125	-
			Total for Carnegie-Mellon University		**-4,125**	**-**

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University of Illinois-Urbana Champaign						
DEPARTMENT OF ENERGY	6949075	110904-19219	EFRC for Regenerative Energy-Efficient Manufacturing of Thermoset Polymeric Materials (RE-MAT)000	81.049	183,371	-
			Total for University of Illinois-Urbana Champaign		**183,371**	**-**
Harvard University						
DEPARTMENT OF ENERGY	6946687	124369-5120804	Machine Learning for Understanding and Driving Non-Equilibrium Dynamic Catalysis	81.049	153,175	-
DEPARTMENT OF ENERGY	6920743	133512-5028381	Transport and Imaging of Mesoscopic Phenomena in Single and Bilayer Graphene	81.049	35,437	-
DEPARTMENT OF ENERGY	6939918	AGREEMENT NO. 134126-5110101	QPress: Quantum Press for Next-Generation Quantum Information Platforms	81.049	1,001	-
			Total for Harvard University		**189,613**	**-**
Washington State University						
DEPARTMENT OF ENERGY	6938562	130616 SPC001315	UI-ASSIST: US-India collAborative for smart diStribution System wIth STorage	81.122	51,717	-
			Total for Washington State University		**51,717**	**-**
Southern California Earthquake Center						
DEPARTMENT OF ENERGY	6943431	131471829	Estimation of Physical Scattering Parameters Related to Shallow Crustal Heterogeneity in Southern California	81.049	32,391	-
			Total for Southern California Earthquake Center		**32,391**	**-**
University of Wisconsin-Madison						
DEPARTMENT OF ENERGY	6946127	1336	Axisymmetric Mirror Development and RF Modeling and Conceptual Design for the Launching Antenna in WHAM	81.135	13,710	-
			Total for University of Wisconsin-Madison		**13,710**	**-**
Purdue University						
DEPARTMENT OF ENERGY	6944430	14000497-047	Oxidation-Resistant, Thermomechanically-Robust Ceramic Composite Heat Exchangers	81.087	201,220	-
			Total for Purdue University		**201,220**	**-**
University of Connecticut						
DEPARTMENT OF ENERGY	6946516	150512807, PO# 459734	AI Tools for the Characterization and Design of Achievable Hypothetical Materials	81.049	242,727	-
			Total for University of Connecticut		**242,727**	**-**

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Sandia National Laboratories						
DEPARTMENT OF ENERGY	6946374	2193618 / PO 2304502	Utilization of CR39 on Z for DD Yield, Yield Anisotropies and Neuron Spectroscopy	81.RD	59,301	-
DEPARTMENT OF ENERGY	6948074	2193618 / PO 2385340	Laser Imaging Diagnostics for Investigating Low Density Plasma on the Z Machine	81.112	15,064	-
DEPARTMENT OF ENERGY	6946845	AGR# 2193618/PO# 2330765	Heterogeneous Integration of Vertical GaN Power Devices via Direct Diamond Bonding	81.RD	96,455	-
DEPARTMENT OF ENERGY	6943065	AGREEMENT# 1340868/PO# 2147998/2274475	Improving the efficiency of direct Monte Carlo simulations of hypersonic flows in the presence of large density gradients	81.RD	-6	-
DEPARTMENT OF ENERGY	6947214	CONT# 2193618 / PO# 2355185	Improving the efficiency of direct Monte Carlo simulations of hypersonic flows in the presence of large density gradients	81.RD	3,858	-
DEPARTMENT OF ENERGY	6948911	PO 2417139	Engineering Sketch Pad (ESP) Enhancements for Sandia Applications	81.RD	54,744	18,170
DEPARTMENT OF ENERGY	6946201	PURCHASE ORDER: 2304354	Correct By Construction Hardware Designs for Sandia Mission Systems	81.RD	7,275	-
DEPARTMENT OF ENERGY	6946962	PURCHASE ORDER: 2320355	Model Form Epistemic Uncertainty Quantification for Modeling with Differential Equations	81.RD	25,904	-
DEPARTMENT OF ENERGY	6948050	SPO 2206572 / CPA 2193618	Quantum Systems Accelerator	81.RD	184,804	-
			Total for Sandia National Laboratories		**447,399**	**18,170**
North Carolina Agriculture & Technology State University						
DEPARTMENT OF ENERGY	6949115	270197C	Center for Electrochemical Dynamics And Reactions on Surfaces	81.049	84,815	-
			Total for North Carolina Agriculture & Technology State University		**84,815**	**-**
UChicago Argonne, LLC						
DEPARTMENT OF ENERGY	6946703	2F-60027	Q-NEXT	81.049	206,035	-
DEPARTMENT OF ENERGY	6948014	2F-60215	Advanced Characterization of Lithium/Electrolyte Interface	81.RD	191,321	-
DEPARTMENT OF ENERGY	6949506	3F-60023	SciDAC-5 NUCLEI	81.RD	11,977	-
DEPARTMENT OF ENERGY	6949646	3F-60041	JuliaLab	81.RD	23,449	-
DEPARTMENT OF ENERGY	6939746	8F-30212	Joint Center for Energy Storage Research (JCESR) Renewal Year 1	81.RD	1,013,559	-
DEPARTMENT OF ENERGY	6946052	AWARD 1F-60487	Julia software GPU	81.RD	-534	-
DEPARTMENT OF ENERGY	6947542	DE-AR0001578	Non-neutron Transmutation of Used Nuclear Fuel	81.135	397,983	262,537

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DEPARTMENT OF ENERGY	6941867	NO. 9F-60231	Advanced characterization of lithium/electrolyte interface	81.RD	57,398	-
DEPARTMENT OF ENERGY	6937302	SUBCONTRACT NO. 7F-30180	Reaction Mechanism Generator (RMG) Software	81.RD	44,054	-
DEPARTMENT OF ENERGY	6943402	WO 2J-30101-0010A	Task 10: Preliminary SAR Review and Alternative HEU-LEU Mixed Core Transition for the MITR-II Research Reactor	81.RD	892,950	-
DEPARTMENT OF ENERGY	6945129	WO 2J-30101-0011A	LEU Fuel Specification Impact Assessment for the MITR Research Reactor – Phase II	81.RD	104,005	-
			Total for UChicago Argonne, LLC		**2,942,197**	**262,537**
Brookhaven National Laboratory						
DEPARTMENT OF ENERGY	6941332	368338	R&D on the sPHENIX MAPS Vertex Detector upgrade	81.RD	173,459	-
DEPARTMENT OF ENERGY	6944787	SUBCONTRACT# 390988	Homogeneous Calorimeter Development - crystal and glass (eRD1)	81.RD	-186	-
DEPARTMENT OF ENERGY	6944490	SUBK# 390034	Co-design Center for Quantum Advantage (C2QA)	81.RD	1,818,863	-
DEPARTMENT OF ENERGY	6949763	SUBK# 425236	Multiscale acceleration: Powering future discoveries in High Energy Physics	81.RD	18,249	-
			Total for Brookhaven National Laboratory		**2,010,385**	**-**
UT- Battelle LLC						
DEPARTMENT OF ENERGY	6936739	4000155797 / PO 4000193546	Coupled Monte Carlo Neutronics and Fluid Flow Simulation of Small Modular Reactors (ExaSMR)	81.RD	178,266	-
DEPARTMENT OF ENERGY	6945440	4000177261	Consortium on Coal-based Carbon Materials Manufacturing - Coal-based Separation Membranes	81.RD	302,946	-
DEPARTMENT OF ENERGY	6943240	4000179517	Turbulence Modeling - Systematic comparison between measured and modelled ion heat diffusivities using VITALS	81.RD	13,266	-
DEPARTMENT OF ENERGY	6945160	4000183826	Understanding and Controlling Entangled and Correlated Quantum States in Confined Solid-state Systems Created via Atomic Scale Manipulation	81.049	11,802	-
DEPARTMENT OF ENERGY	6946311	4000192102/4000206053	Development of advanced compressible flow solver technology	81.049	183,241	-
DEPARTMENT OF ENERGY	6944764	4000192798	Understanding and Controlling Entangled and Correlated Quantum States in Confined Solid-state Systems Created via Atomic Scale Manipulation	81.049	54,863	-
DEPARTMENT OF ENERGY	6937665	4000196573	Center for Bioenergy Innovation	81.049	48,835	-
DEPARTMENT OF ENERGY	6947255	CW31155, PO# 4000198874	Adaptive Meshing Model Development	81.RD	80,894	-
DEPARTMENT OF ENERGY	6949775	CW45368 / PO# 4000208714	Center for Bioenergy Innovation	81.RD	47,347	-

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DEPARTMENT OF ENERGY	6940671	CW8043; PO 4000193677	The Effects of Temperature on the Propagation of Nuclear Data Uncertainty in Nuclear Criticality Safety Calculations	81.RD	-132	-
			Total for UT- Battelle LLC		**921,328**	**-**
University of Rochester						
DEPARTMENT OF ENERGY	6940700	417532G/ UR FAO GR510907	Nuclear-particle Spectroscopy and Analysis at Omega	81.112	448,797	-
			Total for University of Rochester		**448,797**	**-**
Boston University						
DEPARTMENT OF ENERGY	6944604	4500003689	Market Clearing of Risky Assets	81.135	442,993	-
			Total for Boston University		**442,993**	**-**
Northeastern University						
DEPARTMENT OF ENERGY	6939896	503036-78052	Design, Control and Application of Next-Generation Qubits	81.049	-2,157	-
			Total for Northeastern University		**-2,157**	**-**
Lehigh University						
DEPARTMENT OF ENERGY	6944133	544241-78001	Application of Banking Scoring and Rating for Coherent Risk Measures in Electricity Systems	81.135	243,226	-
			Total for Lehigh University		**243,226**	**-**
University of Pennsylvania						
DEPARTMENT OF ENERGY	6946384	578218	Complex Quantum Systems and the Quantum Universe	81.049	105,706	-
			Total for University of Pennsylvania		**105,706**	**-**
Pennsylvania State University						
DEPARTMENT OF ENERGY	6940065	5952-MIT-DOE-1090	Center for Lignocellulose Structure and Formation (CLSF III)	81.049	124,803	-
DEPARTMENT OF ENERGY	6944535	S001256-USDOE	Center for thermal-fluids application in nuclear energy: Establishing the knowledgebase for thermal-hydraulic multiscale simulation to accelerate the deployment of advanced reactors	81.121	162,362	-
			Total for Pennsylvania State University		**287,165**	**-**
Northwestern University						
DEPARTMENT OF ENERGY	6947217	60038340 MIT	Center for Bio-Inspired Energy Science (CBES)	81.049	7,628	-

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DEPARTMENT OF ENERGY	6947187	60051564 MIT	Creating and Interfacing Designer Chemical Qubits	81.049	326,532	-
DEPARTMENT OF ENERGY	6943770	60056489 MIT	Adaptive Discovery and Mixed-Variable Optimization of Next Generation Synthesizable Microelectronic Materials	81.135	15,395	-
DEPARTMENT OF ENERGY	6947231	60057508 MIT	Center for Molecular Quantum Transduction	81.049	214,792	-
DEPARTMENT OF ENERGY	6949175	60063420 MIT	Hydrogen in Energy and Information Sciences (HEISs)	81.049	179,861	-
			Total for Northwestern University		**744,208**	**-**
Stanford University						
DEPARTMENT OF ENERGY	6943245	62267053-151086	Controlled Synthesis of Solid-State Quantum Emitter Arrays for Quantum Computing and Simulation	81.049	39,128	-
DEPARTMENT OF ENERGY	6949784	63074009-212281	Understanding the Structure-Property Relationships and Unusual Aging Behavior of Microporous CANAL Polymer Membranes for Gas Separation	81.049	35,499	-
			Total for Stanford University		**74,627**	**-**
Battelle-Pacific Northwest Laboratories						
DEPARTMENT OF ENERGY	6947891	634147	New NDA Methods for Thorium Fuel Cycle Safeguards (NRTA-SG)	81.049	55,675	-
DEPARTMENT OF ENERGY	6949928	680381	Toward Dynamic Monitoring and Decision Systems (DyMonDS) framework for resilient electricity services: Puerto Rico BPS feasibility study	81.049	12,042	-
DEPARTMENT OF ENERGY	6944507	CONTRACT #: 543753	Making an inorganic analogue of a cell for direct air capture of CO2	81.RD	217,008	-
DEPARTMENT OF ENERGY	6944616	CONTRACT #: 547784	Uncertainty Characterization and Scenario Discovery in GCIMS	81.RD	74,766	-
DEPARTMENT OF ENERGY	6944935	CONTRACT #: 556706	Isotope Verification for Arms Control	81.RD	104,180	-
DEPARTMENT OF ENERGY	6939625	CONTRACT# 428422	Center for Molecular Electrocatalysis	81.RD	54,963	-
DEPARTMENT OF ENERGY	6946906	CONTRACT# 605957	Superconducting Quasiparticle-Sensitive Sensors and Qubits	81.049	102,218	-
DEPARTMENT OF ENERGY	6948894	CONTRACT# 649490	Correlating structure-activity relationships between molecular and interfacial electrocatalysis	81.RD	81,965	-
			Total for Battelle-Pacific Northwest Laboratories		**702,817**	**-**
Fermi Research Alliance, LLC						
DEPARTMENT OF ENERGY	6940653	656002	US CMS DAQ Subsystem	81.RD	267,336	-
DEPARTMENT OF ENERGY	6944558	SUBCONTRACT 672189	Quantum Metrology for Dark Matter Axion Detection	81.RD	139,821	-
DEPARTMENT OF ENERGY	6945172	SUBCONTRACT 675352	QuantISED Theory Consortium	81.RD	145,130	-

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DEPARTMENT OF ENERGY	6947843	SUBCONTRACT 688370	Hybrid Cryogenic Detector Architectures for Sensing and Edge Computing enabled by new Fabrication Processes	81.RD	348,029	-
DEPARTMENT OF ENERGY	6940661	SUBCONTRACT NO. 655714	US CMS Hadron Calorimeter (HCAL) Subsystem	81.RD	23,278	-
			Total for Fermi Research Alliance, LLC		**923,594**	**-**
Lawrence Berkeley National Laboratory						
DEPARTMENT OF ENERGY	6946672	7601691	Solvent-Driven Zero Liquid Discharge for Production of Synthetic Gypsum	81.RD	50,550	-
DEPARTMENT OF ENERGY	6946593	7614576	Large-scale algorithms and software for modeling chemical reactivity in complex systems	81.RD	157,515	-
DEPARTMENT OF ENERGY	6947801	7648833	Building subsurface elastic models at FORGE, Utah, using surface and borehole seismic data	81.RD	62,492	-
DEPARTMENT OF ENERGY	6947802	7648834	Salton Sea Geothermal Field (SSGF)	81.RD	52,430	-
DEPARTMENT OF ENERGY	6945630	RES SUBCONTRACT #7571809	Quantum Systems Accelerator	81.RD	-1,561	-
DEPARTMENT OF ENERGY	6945631	RESEARCH SUBCONTRACT NO. 7571809	Quantum Systems Accelerator	81.RD	1,312,333	-
DEPARTMENT OF ENERGY	6947136	SUBAWARD # 7588799	Scientific Machine Learning for Simulation and Control in Large Scale Power Systems	81.RD	168,478	-
DEPARTMENT OF ENERGY	6931128	SUBCONTRACT # 7204982	Molecular Determinants of Community Activity, Stability and Ecology (MDCASE)	81.RD	-18,494	-
DEPARTMENT OF ENERGY	6947633	SUBCONTRACT NO. 7645408	Advanced Long-Term MonItoring Systems (ALTEMIS)	81.RD	142,581	-
			Total for Lawrence Berkeley National Laboratory		**1,926,324**	**-**
The Research Foundation - Stony Brook University						
DEPARTMENT OF ENERGY	6945738	90589/2/1166708	ENHANCED Shield: A Critical Materials Technology Enabling Compact Superconducting Tokamaks	81.135	250,773	-
DEPARTMENT OF ENERGY	6949032	95821/1178553/2	A Comprehensive Approach to Reduce the Burden of C-14 in Next Generation Graphite Moderated Reactors	81.121	80,060	-
			Total for The Research Foundation - Stony Brook University		**330,833**	**-**
University of Maryland						
DEPARTMENT OF ENERGY	6944739	94434-Z7124201	Solution-verification, grid-adaptation and uncertainty quantification for chaotic turbulent flow problems	81.124	118,659	-
			Total for University of Maryland		**118,659**	**-**

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University of Minnesota						
DEPARTMENT OF ENERGY	6946505	A004527506	Inorganometallic Catalyst Design Center	81.049	14,174	-
DEPARTMENT OF ENERGY	6946975	A008795401	BOTTLE – Recyclable and Biodegradable Manufacturing and Processing of Plastics and Polymers based on Renewable Branched Caprolactones	81.086	81,147	-
DEPARTMENT OF ENERGY	6946457	A009091801	Interface Engineering using Vapor Transport Deposited Perovskite Films for Solar Cells	81.087	343,455	-
			Total for University of Minnesota		**438,776**	**-**
University of Minnesota-Morris						
DEPARTMENT OF ENERGY	6949125	A010469802	Center for Programmable Energy Catalysis	81.049	25,556	-
			Total for University of Minnesota-Morris		**25,556**	**-**
University of Tennessee						
DEPARTMENT OF ENERGY	6946880	A22-0526-S001	Safety Implications of High Burnup Fuel for a 2-Year PWR Fuel Cycle	81.121	162,101	-
			Total for University of Tennessee		**162,101**	**-**
Advanced Ceramics Manufacturing						
DEPARTMENT OF ENERGY	6950008	AGMT DTD 5/25/23	Structural Components with Corrosion Resistant Surface Layers for Nuclear Reactor Systems	81.049	60	-
			Total for Advanced Ceramics Manufacturing		**60**	**-**
Vuronyx Technologies LLC						
DEPARTMENT OF ENERGY	6947906	AGMT DTD 7/19/22	Developing a fast-synthesis method for NCM811 battery cathode materials with flame-assisted spray pyrolysis.	81.049	64,072	-
			Total for Vuronyx Technologies LLC		**64,072**	**-**
Free Form Fibers LLC						
DEPARTMENT OF ENERGY	6945047	AGMT DTD. 08/24/2020	Ultra-thin 3-D Ceramic Matrix Composite Cladding	81.RD	8,517	-
			Total for Free Form Fibers LLC		**8,517**	**-**
Atlantic Quantum						
DEPARTMENT OF ENERGY	6949870	AGMT DTD. 2/21/2023	Software for Automatic Control, Calibration and Validation of Quantum Processors	81.089	4,883	-
			Total for Atlantic Quantum		**4,883**	**-**
Arzeda Corporation						

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DEPARTMENT OF ENERGY	6947820	AGMT EFF 2/21/2023	Novel enzymes and synthetic metabolic pathways for complete degradation and upcycling of recalcitrant polyamides	81.049	163,657	-
			Total for Arzeda Corporation		**163,657**	**-**
FGC Plasma Solutions						
DEPARTMENT OF ENERGY	6941684	AGMT SIGNED 10/11/2019	Control of Static and Dynamic Stability in Lean Combustion via Plasma Actuation in a Novel Fuel Injector Design	81.049	112,878	-
DEPARTMENT OF ENERGY	6944471	SBIR AGRMNT DTD 12/2/2020	In-Cylinder Ammonia Production Using Internal Combustion Engine Enabled by a Low Temperature Plasma	81.049	-4	-
			Total for FGC Plasma Solutions		**112,874**	**-**
Eden GeoPower,Inc						
DEPARTMENT OF ENERGY	6947559	AGMT. DTD. 04/22/2022	Electro-Hydraulic Fracturing for Enhanced Geothermal Systems	81.135	389,735	-
			Total for Eden GeoPower,Inc		**389,735**	**-**
AMPeers LLC						
DEPARTMENT OF ENERGY	6948579	AGMT. DTD. 06/27/2022	Neutron Irradiation Tolerant REBCO Tapes for Compact Fusion Reactors	81.049	60,992	-
			Total for AMPeers LLC		**60,992**	**-**
Brookhaven Technology Group, Inc.						
DEPARTMENT OF ENERGY	6941954	AGMT. DTD. 09/18/2019	HTS Cable development for the central solenoid of the DEMO fusion reactor	81.049	54,834	-
			Total for Brookhaven Technology Group, Inc.		**54,834**	**-**
Via Separations, LLC						
DEPARTMENT OF ENERGY	6942309	AGMT. DTD. 8/1/19	Scalable Graphene Oxide Membranes for Energy-Efficient Chemical Separations	81.135	-26,356	-
			Total for Via Separations, LLC		**-26,356**	**-**
Technology Holding, LLC						
DEPARTMENT OF ENERGY	6946679	AGREEMENT DTD 12/17/2021	Next Generation Separation Method for Rare Earths	81.RD	81,669	-
DEPARTMENT OF ENERGY	6946681	DE-FOA-0002322	Next Generation Separation Method for Rare Earths	81.RD	25,535	-
			Total for Technology Holding, LLC		**107,204**	**-**

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Sublime Systems						
DEPARTMENT OF ENERGY	6949487	AGREEMENT EFFECTIVE 7/28/2022	ELECTROCHEMICAL UPCYCLING FOR LOW-CO2 MATERIALS PRODUCTION	81.135	28,038	-
			Total for Sublime Systems		**28,038**	**-**
Oxeon Energy, LLC						
DEPARTMENT OF ENERGY	6945382	AGRMT DATED 05/01/2021	Performance Validation of a Thermally Integrated 50 kW High Temperature Electrolyzer System	81.089	258	-
			Total for Oxeon Energy, LLC		**258**	**-**
Silver Fir Software, Inc						
DEPARTMENT OF ENERGY	6947019	AGRMT DTD 9/16/2021	A Design Focused Product to Streamline Fusion Neutronics Calculation Workflow	81.049	-10,253	-
			Total for Silver Fir Software, Inc		**-10,253**	**-**
Bridge 12 Technologies						
DEPARTMENT OF ENERGY	6945470	AGRMT. DTD. 3/22/2021	High Efficiency Megawatt Class Gyrotrons for Instability Control of Burning Plasma Machines	81.135	134,621	-
			Total for Bridge 12 Technologies		**134,621**	**-**
Georgia Institute of Technology						
DEPARTMENT OF ENERGY	6942401	AWD-000286-G2	Aerial Intelligence for Retrofit Building Energy Modeling (AirBEM)	81.086	9,358	-
DEPARTMENT OF ENERGY	6942141	AWD-000372-G2	CONSORTIUM FOR ENABLING TECHNOLOGIES & INNOVATION (ETI)	81.113	611,214	-
			Total for Georgia Institute of Technology		**620,572**	**-**
Lawrence Livermore National Security, LLC						
DEPARTMENT OF ENERGY	6938345	B627203	Microscale biophysical analyses of algal bacterial interactions	81.RD	91,362	-
DEPARTMENT OF ENERGY	6940158	B631377	Chemical Threat Responsive Carbon Nanotube Membranes	81.RD	-2,646	-
DEPARTMENT OF ENERGY	6945389	B645222	Advanced Experimental Capability to Study High-Velocity Collisions of Metallic Microparticles	81.RD	117,571	-
DEPARTMENT OF ENERGY	6947044	B650912	Actualizing an Energetic Bistable Logic-based Functional Prototype	81.RD	28,795	-
DEPARTMENT OF ENERGY	6947823	B652285	Design and implementation of the MRSt neutron spectrometer in support of NIF	81.RD	181,644	-

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DEPARTMENT OF ENERGY	6949630	B656484	High-Density Implosions on Omega and the National Ignition Facility (NIF)	81.RD	158,309	-
DEPARTMENT OF ENERGY	6943589	SUBCONTRACT B640112	High Density Implosions on Omega and the NIF	81.RD	325,344	-
DEPARTMENT OF ENERGY	6948076	SUBCONTRACT NO. B652251	HED NIF Catcher Development	81.RD	164,915	-
DEPARTMENT OF ENERGY	6949396	SUBCONTRACT NO. B655620	Differentiating Large-Scale Finite Element Applications	81.RD	60,382	-
			Total for Lawrence Livermore National Security, LLC		**1,125,676**	**-**
University of Missouri-Columbia						
DEPARTMENT OF ENERGY	6943064	C00069059-2	High quality GaN FETs through transmutation doping and low temperature processing	81.135	297	-
			Total for University of Missouri-Columbia		**297**	**-**
Triad National Security, LLC						
DEPARTMENT OF ENERGY	6947686	C2352 / CW23868	Readout and Fast triggers for the sPHENIX MVTX	81.RD	95,380	-
DEPARTMENT OF ENERGY	6946899	PO #EP115905; SUB NO. CW9131	Advancements in Monte Carlo methods for transient modelling and performance on GPUs	81.RD	38,434	-
DEPARTMENT OF ENERGY	6946899	PO #EP115905; SUB NO. CW9131	COVID-19: Advancements in Monte Carlo methods for transient modelling and performance on GPUs	81.RD	111,771	-
DEPARTMENT OF ENERGY	6947654	PO #EP122805; SUB NO. CW22206	Actinide-Molten Salt Pair Distribution Function (PDF) Studies	81.RD	136,517	-
DEPARTMENT OF ENERGY	6945220	SUBCONTRACT NO. 628886	Emergency Control and Monitoring of Power System Networks	81.RD	1,497	-
			Total for Triad National Security, LLC		**383,599**	**-**
Los Alamos National Security, L.L.C.						
DEPARTMENT OF ENERGY	6940672	C2543/531711 PO EP69970	Analysis and Optimization of Parallel Unstructured-Mesh Computations	81.RD	184,098	-
			Total for Los Alamos National Security, L.L.C.		**184,098**	**-**
Battelle Energy Alliance, LLC						
DEPARTMENT OF ENERGY	6946524	CONTR NO. 112583 RELEASE 31	The Deployment and In-Pile Test of an Instrument for Real-Time Monitoring Thermal Conductivity Evolution of Nuclear Fuels	81.049	123,561	-
DEPARTMENT OF ENERGY	6943615	RELEASE 24/BMC 112583	Collaboration on Techno-Economic Analysis of the Role of Nuclear Generation in the Energy Market Transition and New Market Opportunities	81.RD	130,949	-

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DEPARTMENT OF ENERGY	6946654	RELEASE 25/BMC 112583	An Innovative Approach for Accelerated Irradiation Studies of Materials	81.RD	69,162	-
DEPARTMENT OF ENERGY	6948605	RELEASE 26/BMC 112583	Passive Strain Measurements for Experiments in Radiation Environments	81.RD	28,718	-
DEPARTMENT OF ENERGY	6945053	RELEASE 27 /BMC 0112583	NASA Fuel and Material Irradiation	81.RD	587,020	35,882
DEPARTMENT OF ENERGY	6945278	RELEASE 29/BMC 112583	Informative Design of High-Temperature Metal Hydride Moderators in Microreactors	81.RD	77,059	-
DEPARTMENT OF ENERGY	6945489	RELEASE 30/BLANKET MASTER CO. 112583	Market Feasibility Assessment: Ultra-Modular and Embedded Energy Approach for Decarbonizing Heavy Industry and Transport	81.RD	32,804	-
			Total for Battelle Energy Alliance, LLC		**1,049,273**	**35,882**
Battelle Memorial Institute						
DEPARTMENT OF ENERGY	6946609	CONTRACT #592022	Combined Experimental and Computational Efforts to Establish Ion Mobility, Solubility and Stability of Functional Liquids for Electrochemical Energy Storage	81.RD	60,043	-
			Total for Battelle Memorial Institute		**60,043**	**-**
Sequoia Scientific, Inc.						
DEPARTMENT OF ENERGY	6943628	DE-AR0001232-MIT	REAL-TIME, IN-SITU SENSING OF SEDIMENT PROPERTIES FOR ENVIRONMENTAL MONITORING OF DEEP-SEA POLYMETALLIC NODULE MINING	81.135	7,565	-
			Total for Sequoia Scientific, Inc.		**7,565**	**-**
Type One Energy Group, Inc.						
DEPARTMENT OF ENERGY	6943686	DE-AR0001287	Proposal for a Demonstration HTS Stellarator Coil with an Additive-Manufactured Support Case	81.135	22,725	-
			Total for Type One Energy Group, Inc.		**22,725**	**-**
Plasma Processes, LLC						
DEPARTMENT OF ENERGY	6938695	DE-SC0015931 / PO# 1014-002-JK-050218	SBIR Phase II: Additive Manufacture of Tungsten Armored Plasma Facing Components	81.049	-9	-
DEPARTMENT OF ENERGY	6947815	PO 1017-002-JK-050222	Additive Manufacture of GRCop Waveguides for Fusion	81.049	19,576	-
DEPARTMENT OF ENERGY	6945493	SBIR AGMT DTD 5/26/2021	Additive Manufacturing of ODS Steel Claddings with an Integral Diffusion Barrier	81.RD	2,021	-
			Total for Plasma Processes, LLC		**21,588**	**-**
Tanner Research, Incorporated						

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DEPARTMENT OF ENERGY	6944940	DE-SC0019905	Quench Detection Method using MEMS Sensor Arrays for Superconducting Magnets	81.049	77,255	-
			Total for Tanner Research, Incorporated		**77,255**	**-**
Colorado State University						
DEPARTMENT OF ENERGY	6946705	G-64020-01	Redesigning Polymers to Leverage A Circular Economy (REPLACE)	81.049	134,123	-
			Total for Colorado State University		**134,123**	**-**
SURA / Jefferson Lab						
DEPARTMENT OF ENERGY	6945987	JSA-21-C0815	MOLLER Upstream Toroid System Design Statement of Work	81.RD	393,915	-
			Total for SURA / Jefferson Lab		**393,915**	**-**
University of California-Santa Barbara						
DEPARTMENT OF ENERGY	6940325	KK1939	PhILMs: Collaboratory on Mathematics and Physics Informed Learning Machines for Multiscale and Multiphysics Problems	81.049	176,081	-
			Total for University of California-Santa Barbara		**176,081**	**-**
Texas A & M						
DEPARTMENT OF ENERGY	6944303	M2100082	Secure Monitoring and Control of Solar Power Distribution System Through Dynamic Watermarking	81.087	23,037	-
			Total for Texas A & M		**23,037**	**-**
National Renewable Energy Laboratory						
DEPARTMENT OF ENERGY	6941550	NO. UGA-0-41029-21	NREL: Lignin-First Biorefinery Development	81.049	34,744	-
DEPARTMENT OF ENERGY	6943104	UGA-0-41029-23	Environmental Design of Cost-Effective High-Temperature Sensible Thermal Energy Storage (TES) Using Industrial Waste	81.RD	-5,172	-
DEPARTMENT OF ENERGY	6946422	UGA-0-41029-25	Investigation of Plastic Deconstruction Methods to Aid in Upcycling and Redesign	81.RD	453,041	-
DEPARTMENT OF ENERGY	6946729	UGA-0-41029-27	Metal-to-ceramic joining methods to support development of advanced ceramic-based CSP components	81.RD	80,701	-
DEPARTMENT OF ENERGY	6946802	UGA-0-41029-28	Lignin Conversion to Sustainable Aviation Fuel Blendstocks	81.RD	175,258	-
DEPARTMENT OF ENERGY	6947296	UGA-0-41029-29	Development of a Thermal System Modeling Framework Based on Machine Learning Approach	81.RD	25,195	-

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DEPARTMENT OF ENERGY	6947553	UGA-0-41029-30	Economics analysis and support for demand-side bidding in electricity markets	81.RD	127,907	-
			Total for National Renewable Energy Laboratory		**891,674**	**-**
CF Technologies, Inc.						
DEPARTMENT OF ENERGY	6944603	PHASE II SBIR AGMT. 10/15/2020	Supercritical Fluid Separation and Purification of Rare Earth Elements to Lower Energy Consumption and Reduce Waste	81.049	104,184	-
			Total for CF Technologies, Inc.		**104,184**	**-**
Fluor Marine Propulsion						
DEPARTMENT OF ENERGY	6942196	PO 135265 / LINE ITEM 1	Effect of surface properties on the two-phase heat transfer and critical heat flux	81.RD	211,796	-
DEPARTMENT OF ENERGY	6945883	PO 140518	MASTER AGREEMENT	81.RD	55,844	-
DEPARTMENT OF ENERGY	6944956	PO#: 140712	Development of Autonomous Thermal Hydraulic Operations	81.RD	104,628	-
			Total for Fluor Marine Propulsion		**372,268**	**-**
University of Michigan						
DEPARTMENT OF ENERGY	6943018	PO 3005787040 / SUBK00009794	Consortium for Monitoring, Technology, and Verification	81.113	279,026	-
DEPARTMENT OF ENERGY	6949201	SUBK00017477	Mechano-Chemical Understanding of Solid Ion Conductors (MUSIC)	81.049	189,625	-
			Total for University of Michigan		**468,651**	**-**
University of California - Berkeley						
DEPARTMENT OF ENERGY	6947240	PO BB01575432/00010929	Probing the Speciation of Light Elements in Molten Salt by Electrochemistry, High Temperature Liquid NMR and Neutron Diffraction	81.121	66,216	-
			Total for University of California - Berkeley		**66,216**	**-**
Honeywell Federal Manufacturing & Technologies, Llc						
DEPARTMENT OF ENERGY	6946477	PO N000462960	Multiaxial Vibration Test of Electronic Systems	81.RD	82,597	-
DEPARTMENT OF ENERGY	6949385	PO N000466720	Research & Development Scope of Work (SOW) Next Generation Capabilities for Additive Manufacturing	81.RD	52,265	-
			Total for Honeywell Federal Manufacturing & Technologies, Llc		**134,862**	**-**
General Atomics						
DEPARTMENT OF ENERGY	6937870	PO# 4500071909	AToM: Advanced Tokamak Modeling Environment	81.049	154,305	-

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			Total for General Atomics		**154,305**	**-**
Lincoln Laboratory						
DEPARTMENT OF ENERGY	6942991	PO# 7120477965	Advanced Quantum Testbed (AQT)	81.RD	117,567	-
			Total for Lincoln Laboratory		**117,567**	**-**
Honeywell						
DEPARTMENT OF ENERGY	6945268	PO# N000394905	Porosity-controlled selective laser melting	81.RD	3,996	-
DEPARTMENT OF ENERGY	6947033	PO# N000428740	Next Generation Capabilities for AM 705179	81.RD	93,378	-
			Total for Honeywell		**97,374**	**-**
Michigan State University						
DEPARTMENT OF ENERGY	6944410	RC108389 - MIT	CRIS at FRIB-MIT	81.049	15,469	-
			Total for Michigan State University		**15,469**	**-**
University of Massachusetts-Lowell						
DEPARTMENT OF ENERGY	6946606	S51900000052748	Improving post-consumer resin processing in injection molding using online rheological measurement	81.087	20,210	-
			Total for University of Massachusetts-Lowell		**20,210**	**-**
University of Arkansas						
DEPARTMENT OF ENERGY	6942737	SA1712153	Cybersecurity Center for Secure Evolvable Energy Delivery Systems (SEEDS)	81.112	-4	-
			Total for University of Arkansas		**-4**	**-**
Adelphi Technology Inc						
DEPARTMENT OF ENERGY	6946147	STTR UNDER DE-SC0020555	Multiplexing Focusing Analyzer for Efficient Stress-Strain Measurements	81.049	299,804	-
			Total for Adelphi Technology Inc		**299,804**	**-**
Princeton University						
DEPARTMENT OF ENERGY	6940086	SUB0000289	Bioinspired Light-Escalated Chemistry (BioLEC)	81.049	191,452	-
DEPARTMENT OF ENERGY	6944958	SUB0000466	Membrane Dehumidification as Facade-integrated Building Screens for Latent Cooling	81.086	11,051	-
			Total for Princeton University		**202,503**	**-**
Columbia University						

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DEPARTMENT OF ENERGY	6944420	SUBAWARD 5(GG008711-10)	PINE: Photonic Integrated Networked Energy Efficient Datacenter	81.135	22,169	-
			Total for Columbia University		**22,169**	**-**
Clean Energy States Alliance						
DEPARTMENT OF ENERGY	6947484	SUBAWARD AGREEMENT DATED APRIL 1 2021/USDOE AWARD DE-EE009360	Effective Knowledge Dissemination for LMI Solar: The Roles of CBOs and State Governments	81.087	76,544	-
			Total for Clean Energy States Alliance		**76,544**	**-**
University of Colorado Boulder						
DEPARTMENT OF ENERGY	6937968	SUBAWARD#: 1555955 PO# 1000976258	Design and Engineering of Synthetic Control Architectures	81.049	27,948	-
			Total for University of Colorado Boulder		**27,948**	**-**
Phoenix, LLC						
DEPARTMENT OF ENERGY	6945060	SUBCONTRACT AGRMT DTD. 01/01/2021	ULTRA HIGH FLUX DT NEUTRON SOURCE FOR ACCELERATED TESTING OF FUSION MATERIALS AND SUBSYSTEMS TO REACTOR-RELEVANT DPA LEVELS	81.135	8,130	-
			Total for Phoenix, LLC		**8,130**	**-**
Form Energy, Inc.						
DEPARTMENT OF ENERGY	6941805	SUBCONTRACT RESEARCH AGREEMENT DATED 10-24-2019	Aqueous Sulfur Systems for Long-Duration Grid Storage	81.135	97,123	-
			Total for Form Energy, Inc.		**97,123**	**-**
University of Alaska-Fairbanks						
DEPARTMENT OF ENERGY	6949502	UA 23-0045/ P.O. 564325	Environmental Justice and Equity Framework for siting nuclear energy in America’s Arctic	81.121	46,140	-
			Total for University of Alaska-Fairbanks		**46,140**	**-**
University of Texas - Austin						
DEPARTMENT OF ENERGY	6938299	UTA18-000276	Partnership for Multiscale Gyrokinetic (MGK) Turbulence	81.049	26,327	-
DEPARTMENT OF ENERGY	6940002	UTA18-001328	AEOLUS: Advances in Experimental Design, Optimal Control, and Learning for Uncertain Complex Systems	81.049	127,772	-
			Total for University of Texas - Austin		**154,099**	**-**

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University of Washington						
DEPARTMENT OF ENERGY	6944510	UWSC12397 PO BPO52447	Ultrafast Control of Emerging Electronic Phenomena in 2D Quantum Materials	81.049	301,779	-
			Total for University of Washington		**301,779**	**-**
			TOTAL for Department of Energy		**23,903,598**	**316,589**

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Prime Sponsor Name	Project WBS id	Passthrough Number	WBS Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
DEPARTMENT OF HEALTH & HUMAN SERVICES						
Harvard School of Public Health						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6946794	115034-5119517	The Harvard TH Chan School of Public Health Center for Work, Health and Wellbeing	93.262	220,153	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6945901	117127-5108050	Multi-Pathway DNA Repair Capacity Measurements in Lung Cancer Patients and Healthy Controls	93.113	51,555	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6944931	117327-5116372	Using genetics and multi-scale imaging to understand the mechanisms underlying mycobacteriophage host choice	93.855	55,558	-
			Total for Harvard School of Public Health		**327,266**	**-**
Synensys, LLC						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6949212	AGMT EFF 9/8/22	Systems-Theoretic Analysis to Improve Safety of Laboratory Data	93.RD	292,145	-
			Total for Synensys, LLC		**292,145**	**-**
Virginia Commonwealth University						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6947631	FP00012824_SA005	Phlow - Synthesis of Critical Pharmaceuticals	93.RD	-432,549	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6947680	FP00012824_SA005/TASK 1	Phlow - Synthesis of Critical Pharmaceuticals	93.RD	387,095	-
			Total for Virginia Commonwealth University		**-45,454**	**-**
National Institute for Pharmaceutical Technology and Education (NIPTE)						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6948937	NIPTE-75F-MIT-2022-001	Continuous Drug Substance Manufacturing from biomass-derived building blocks	93.RD	37,785	-
			Total for National Institute for Pharmaceutical Technology and Education (NIPTE)		**37,785**	**-**
Brown University						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6944063	00001628	Multifidelity and multiscale modeling of the spleen function in hereditary spherocytosis and sickle cell disease with in vitro and ex vivo validations	93.839	198,331	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6947037	00001959	Population modeling of bladder cancer detection and control	93.393	22,323	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6947005	00002019	Fluorinated macrocyclic peptides as BBB penetrating agent for improved GBM treatment	93.395	240,183	-
			Total for Brown University		**460,837**	**-**
Fred Hutchinson Cancer Research Center						

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DEPARTMENT OF HEALTH & HUMAN SERVICES	6947762	0001109660	The Syngenic DNA and uPOET Platform: Overcoming Innate Barriers to Genetic Engineering in Bacteria	93.121	214,591	-
			Total for Fred Hutchinson Cancer Research Center		**214,591**	**-**
University of Alabama at Birmingham						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6945045	000526030-001	Alpha-synuclein aggregate induced synapse loss is a pathological event contributing to Lewy body dementias	93.853	885	-
			Total for University of Alabama at Birmingham		**885**	**-**
Beth Israel Deaconess Medical Center						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6945903	01061188	The development and human translation of Temporal Interference brain stimulation	93.242	18,322	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6945603	01062677	Research Resource for Complex Physiologic Data	93.286	378,358	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6949377	01064315	Structure-Guided Design of Intestine-Selective AHR Agonists for Restoration of Gut Barrier Integrity in IBD	93.847	1,615	-
			Total for Beth Israel Deaconess Medical Center		**398,295**	**-**
University of California, Los Angeles						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6946974	0125 G VB305	Precision lung cancer therapy design through multiplexed adapter measurement	93.396	-6,513	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6941247	1554 G WC474	Molecular Analysis of Host Immune Response in Leprosy	93.855	150,760	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6942046	1554 G XA369	IL-26 in host defense against infection by intracellular bacteria in skin	93.846	116,119	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6944232	2000 G XH151	AN OPEN-SOURCE, WIRELESS, MULTICHANNEL MINIATURIZED MICROSCOPE FOR IMAGING ACTIVITY NEURONAL ACTIVITY	93.853	-3,378	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6946753	2000 G ZE943	Next-generation MORF Mice for Scalable Brainwide Morphological Mapping and Genetic Perturbation of Single Neurons	93.242	161,845	-
			Total for University of California, Los Angeles		**418,833**	**-**
Icahn School of Medicine at Mount Sinai						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6944824	0255-E501-4609	Physical Activity Genomics, Epigenomics/transcriptomics Site	93.310	-3,286	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6947150	0255-E503-4609	Physical Activity Genomics, Epigenomics/transcriptomics Site	93.310	33,690	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6949687	0255-H291-4609	Integration of adjuvant derived nanoparticles and engineered mRNA for HIV vaccine discovery	93.855	42,098	-

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			Total for Icahn School of Medicine at Mount Sinai		**72,502**	**-**
Columbia University						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6934117	1(GG012140)/PO G10545	Analysis of Cancer Cell Metabolism in Diverse Environmental Conditions	93.396	31,331	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6945517	2(GG012789-02)	The Role of the Microenvironment in Barrett's Esophagus	93.397	-11	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6947262	3(GG014961-01)	Integrating Air Pollution Prediction Models: Uncertainty Quantification and Propagation in Health Studies	93.113	98,855	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6946798	6(GG017143-07) PO# SAPO G16033	State-dependent Decision-making in Brainwide Neural Circuits	93.853	275,783	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6940407	PO G13407 1(GG014640)	Distal enhancers controlling motor neuron gene expression program	93.853	207,178	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6949044	PO G16306	The role of stem cells and the microenvironment in gastrointestinal cancers	93.393	30,000	-
			Total for Columbia University		**643,136**	**-**
Joslin Diabetes Center						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6945602	100190-2150186	Fibroblast Growth Factor and Energy Metabolism	93.847	56,900	-
			Total for Joslin Diabetes Center		**56,900**	**-**
Boston Medical Center						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6944572	100192022-MIT 05349	A multi-modular approach for human pluripotent stem cell-based liver regeneration	93.847	90,194	-
			Total for Boston Medical Center		**90,194**	**-**
Oregon Health and Science University						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6939693	1011660_MIT	Applications of ultrahigh-speed long-range wide-field OCT in anterior eye diseases	93.867	44,327	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6949354	1020958_MIT	Multispecies NHP dGTEx Research Center	93.172	125,376	-
			Total for Oregon Health and Science University		**169,703**	**-**
Tufts Clinical and Translational Science Institute						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6946217	102188-00046:NH9053_ROCHE	A Novel Device for the Treatment of Obstructive Sleep Apnea	93.350	15,369	-
			Total for Tufts Clinical and Translational Science Institute		**15,369**	**-**

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Tufts University						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6946688	102188-00051	Free-hand ultrasound and photoacoustic imaging for monitoring oral cancer lesions	93.350	15,000	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6947483	102188-00061:NH9094_EDELMAN PO# EP0182273	Clinical and Translational Science Award U54	93.350	591,695	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6942047	103076-00001/NIH113/PO EP0192109	Voltage imaging of astrocyte-neuron interactions	93.853	155,875	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6945813	5020410 SERV	Pathogenesis of Cardiopulmonary Fibrosis Associated with Heart Failure in the Elderly	93.866	-15,351	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6941426	HH1241	Understanding and designing cyclic peptides	93.859	528	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6945625	PO EP0182273 /SUBAWARD NO. 102188-00043:NH9050_EDELMAN	Clinical and Translational Science Award U54	93.350	-36,952	-
			Total for Tufts University		**710,795**	**-**
Cummings School of Veterinary Medicine at Tufts University						
DEPARTMENT OF HEALTH & HUMAN SERVICES	2389969	104489-00001 PO# EP0234333	Cross-Disciplinary Training for Veterinary Students	93.351	20,059	-
			Total for Cummings School of Veterinary Medicine at Tufts University		**20,059**	**-**
Harvard University						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6946330	109786.5110773	Immune Mechanisms of Protection against Mycobacterium Tuberculosis Center (IMPAc-TB)	93.RD	261,102	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6947309	109786.5110775	Immune Mechanisms of Protection against Mycobacterium Tuberculosis Center (IMPAc-TB)	93.RD	439,136	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6939820	132692-5106604	Developmental origins of mental illness: evolution and reversibility	93.242	371,282	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6939227	164647-5107687	Novel Age-Dependent DNA Modifications	93.866	148,855	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6944582	164677-5115233	High throughput assaying of circuit activity and connectivity in brain organoids	93.242	119,637	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6946793	168051-5119965	Platform technologies for scalable highly multiplexed proteomic phenotyping of the brain	93.242	174,487	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6946752	168051-5119967	Platform technologies for scalable highly multiplexed proteomic phenotyping of the brain	93.242	609,385	-
			Total for Harvard University		**2,123,884**	**-**

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Brigham & Women's Hospital						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6948535	114237	Mucins and immune cell interactions in ovarian cancer pathogenesis & progression	93.396	152,996	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6940370	120368	Neuroimaging Analysis Center	93.286	189,393	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6941991	121535	Pro-inflammatory activation of human macrophages regulated by lncRNAs	93.837	93,963	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6941853	121596	Fluorinated macrocyclic peptides as BBB penetrating agent for improved GBM treatment	93.395	-13,706	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6946651	121687	Billing Agreement - Angela Lai - Organ Design and Engineering Training Program (ODET Program)	93.286	-332	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6944620	123929	Epigenetics and 3D structure of miR-10b/HoxD locus in the brain and malignant glioma	93.853	145,498	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6947871	126094	Predicting the impact of genetic variants, genes and pathways on human Disease	93.172	28,146	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6947050	126466	Monitoring pro-resolving leukocyte responses in peripheral blood predicts clinical severity during sepsis	93.859	145,334	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6949110	127817	Targeting platinum(IV) prodrug to GBM tumors using a brevican-binding peptide	93.395	147,039	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6949360	127862	Functional analysis of glia in tauopathy	93.866	174,336	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6937980	SUBAWARD NO. 117954	Integrative multi-omic discovery of proximal mechanisms driving age-dependent neurodegeneration	93.866	-35,825	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6945267	SUBAWARD# 125023	The Development of an Off the Shelf Tissue Adhesive Patch to Repair and Seal Airway and Esophageal Injuries and Defects	93.837	-705	-
			Total for Brigham & Women's Hospital		**1,026,137**	**-**
Boston Biomedical Innovation Center						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6935091	115622	Minimally invasive tissue engineered therapies for acute airway injury	93.837	-1,365	-
			Total for Boston Biomedical Innovation Center		**-1,365**	**-**
Dana Farber Cancer Institute						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6944722	1282101	Targeting immunogenicity to the MPER hinge and C-helix for BNAb elicitation	93.855	-10,593	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6949574	1283206	Altered metabolism and machine learning for pancreatic cancer early detection	93.394	45,104	-

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DEPARTMENT OF HEALTH & HUMAN SERVICES	6943873	1311401	Development and implementation of multiplex methods to understand the biology and heterogeneity of patient-derived cancer models	93.353	100,625	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6945579	1318001	Development of microRNA-based cell-targeted polymeric nanoparticles for multiple myeloma therapy	93.395	118,519	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6949779	1318003	Development of microRNA-based cell-targeted polymeric nanoparticles for multiple myeloma therapy	93.395	3,826	-
			Total for Dana Farber Cancer Institute		**257,481**	**-**
University of California - San Francisco						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6948078	13617SC	COVID-19: AViDD U19: QBI Coronavirus Research Group (QCRG)	93.855	339,455	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6948692	13777SC	Project 2: Defining the Unique Properties of the Distinct Signaling Machinery Used by the TCR	93.855	8,720	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6948716	13778SC	Project 3: Defining the Unique Properties of the Distinct Signaling Machinery Used by the TCR	93.855	931	-
			Total for University of California - San Francisco		**349,106**	**-**
Harvard Medical School						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6942347	149874.5113431.0005	Telemedicine to improve the diagnosis of surgical site infections post-cesarean delivery in rural Rwanda	93.989	-8,308	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6946613	150609.5117888.0002	mHealth-Community Health Worker tool for comprehensive post-cesarean follow-up in rural Rwanda	93.865	55,350	-
			Total for Harvard Medical School		**47,042**	**-**
Wyss Institute						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6946339	168019.0502	BILLING AGREEMENT - JAMES J. COLLINS - NIH Flu: Lung-On-a-Chip Disease Models for Efficacy Testing	93.838	-2,461	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6947176	168019.0502	BILLING AGREEMENT - XIAOYU (JACK) CHEN:Lung-on-a-Chip Disease Models for Efficacy Testing	93.838	5,939	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6947452	168019-0502	BILLING AGREEMENT - RAPHAEL GAYET: Lung-on-a-Chip Disease Models for Efficacy Testing	93.838	3,934	-
			Total for Wyss Institute		**7,412**	**-**
University of Massachusetts						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6937955	18-010032 A00	Using fMRI to measure the neural-level signals underlying population-level responses	93.242	-111	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6939279	OSP2018099/ PO NO.WA01134898	Structural annotation of the human genome	93.172	44,280	-

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DEPARTMENT OF HEALTH & HUMAN SERVICES	6946788	PO WA01519284, SUB00000103	ReproNim: A Center for Reproducible Neuroimaging Computation	93.286	159,345	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6942854	WA01187538; OSP2016201	Center for Reproducible Neuroimaging Computation (CRNC)	93.286	-20	-
			Total for University of Massachusetts		**203,494**	**-**
Cornell University						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6945781	192305-02	Targeted delivery of cytopathicity enhancing agents, and co-ordination with shock and kill, to reduce levels of persistent HIV and enable remission	93.855	1,926	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6946815	203763, BOUROUIBA	Halting TB transmission: Bacterial determinants of Mtb aerobiology	93.855	5,533	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6947317	222469, BOUROUIBA	Halting TB transmission: Bacterial determinants of Mtb aerobiology	93.855	303,572	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6948955	223317	Targeted delivery of cytopathicity enhancing agents, and co-ordination with shock and kill, to reduce levels of persistent HIV and enable remission	93.855	261,699	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6949903	228323, BOUROUIBA	Halting TB transmission: Bacterial determinants of Mtb aerobiology	93.855	84,140	-
			Total for Cornell University		**656,870**	**-**
Health Resources in Action						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6937415	1R25OD023756	LEAH-Knox Scholars Program in Biomedical Research	93.859	37,945	-
			Total for Health Resources in Action		**37,945**	**-**
La Jolla Institute for Allergy and Immunology						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6949284	20012-01-133-284	ImmuneSignatures HIPC IOF project	93.855	48,537	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6947438	20021-06-133-382	Maximizing germinal centers and somatic hypermutation to HIV Env immunogens	93.855	44,760	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6950154	20021-08-133-382	Maximizing germinal centers and somatic hypermutation to HIV Env immunogens	93.855	11,820	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6948060	27909-04-133-408	Consortium for Immunotherapeutics against Emerging Viral Threats	93.855	118,626	-
			Total for La Jolla Institute for Allergy and Immunology		**223,743**	**-**
University of California						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6943586	2016-3340	From structure to therapy: the TRiC Chaperonin network in Huntington's disease	93.855	-6,632	-

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			Total for University of California		**-6,632**	**-**
Allen Institute for Brain Science						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6937897	2017-0572 PO# AIP044827	A comprehensive whole-brain atlas of cell types in the mouse	93.242	-425	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6946484	2021-0590	Cell Type and Circuit Mechanisms of Non-Invasive Brain Stimulation by Sensory Entrainment	93.279	382,598	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6949191	2022-0624	Functionally guided adult whole brain cell atlas in human and NHP	93.242	49,477	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6949187	2022-0625	Functionally guided adult whole brain cell atlas in human and NHP	93.242	291,456	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6948850	2022-0638	A Knowledgebase for Community Exploration of Brain Cell Types	93.242	267,055	-
			Total for Allen Institute for Brain Science		**990,161**	**-**
North Carolina State University						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6945695	2021-0285-01	Biomaterial Scaffolds for Ex Vivo and In Situ CAR-T Cell Production	93.395	15,886	-
			Total for North Carolina State University		**15,886**	**-**
University of California - Irvine						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6948478	2022-1731	Molecular Mechanisms of Pathogenesis in Huntington's disease	93.853	117,750	-
			Total for University of California - Irvine		**117,750**	**-**
University of Texas Medical Branch						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6947647	20-85074-01/PO#0000001971	Coordinating Research on Emerging Arboviral Threats Encompassing the Neotropics (CREATE-NEO)	93.855	68,182	-
			Total for University of Texas Medical Branch		**68,182**	**-**
Massachusetts General Hospital						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6944501	229172	Billing Agreement - Alex Shalek - A systems biology approach to fingerprint HIV immune defense in Elite Controllers	93.839	4,683	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6945286	230321	Clinical Research for the Improved Prevention, Diagnosis and Treatment of Vocal Hyperfunction	93.173	4,101	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6944905	231345	Billing Agreement - Harvard Training Program in Bioinformatics Applied to Diabetes, Obesity and Metabolism	93.847	-35,704	-

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DEPARTMENT OF HEALTH & HUMAN SERVICES	6947754	231409 (DRAGO)	Billing Agreement: John Drago - A magnetic particle imager (MOI) for functional brain imaging in humans	93.286	7,633	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6943434	232432	Billing Agreement - Alex Shalek & Research Tech - Riley Drake - T Cells in HCV/HIV Co-infection	93.279	-3,125	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6947634	232558	Billing Agreeement - Alex Shalek - Identification of the HIV Reservoir in Lymph Nodes Using Single Cell RNA-Seq	93.855	3,078	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6944498	232558	Billing Agreement - Alex Shalek - Identification of the HIV Reservoir in Lymph Nodes Using Single Cell RNA-Seq	93.855	2,656	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6947562	232578	Billing Agreement - Yong-Chul Yoon - Subsampled OCT for visualizing nerves and vasculature during robotic surgery	93.310	689	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6940260	233405	Harnessing Diverse BioInformatic Approaches to Repurpose Drugs for Alzheimers Disease (R01 Resub)	93.866	94,881	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6940323	233811	Leveraging Artificial Intelligence for the assessment of severity of depressive symptoms	93.242	215,011	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6947260	234408	Determining antigen recognition in systemic sclerosis	93.855	-835	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6947031	235400	DISCOVERY: Determinants of Incident Stroke Cognitive Outcomes and Vascular Effects on RecoverY	93.853	24,189	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6946960	235663	An integrated translational approach to overcome drug resistance	93.353	49,945	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6945363	236327	A proteomic approach to understanding phagosome evolution in TB infection - Bryson summer salary billng agreement	93.855	14,634	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6944500	236354	Billing Agreement - Alex Shalek - Base Funding - Immune Mechanisms of Protection Against Mycobacterium Tuberculosis Center (IMPAc-TB)	93.RD	4,687	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6947750	236446 (HOEBEL)	Billing Agreement - Katharina Hoebel - Distributed Learning of Deep Learning Models for Cancer Research	93.394	8,422	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6943169	236482	Demystifying the antiviral activity of the IgG3+ antibody response	93.855	56,815	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6943529	236596	Defining the Fc-correlates of protection against influenza	93.855	31,895	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6943532	236632	Multiplexed Antigen-Specific Antibody Fc Profiling on a Chip for Point-of-Care Diagnosis of TB in HIV-infected Children	93.855	36,725	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6943526	236707	Prebiotic effect of eicosapentaenoic acid treatment for colorectal cancer	93.396	64,288	-

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DEPARTMENT OF HEALTH & HUMAN SERVICES	6944191	236887	Mechanisms of HIV-associated epithelial intestinal stem cell (ISC) dysfunction	93.847	213,043	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6944511	237288	Billing Agreement - Alex Shalek - Single-Cell Analysis of HIV/SIV Reservoir	93.855	2,500	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6944456	237387	Development of Novel Bacteriophages Targeting Enteric Bacterial Pathogens	93.855	-5,780	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6945568	237869	Defining functional humoral correlates of immunity to guide vaccine design	93.855	131,046	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6946847	238179	Natural Language Processing and Artificial Intelligence employed in the Pediatric Proton/photon Consortium Registry	93.RD	30,772	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6945302	238575	Effects of inflammaging on intestinal epithelial cells and aspirin chemoprevention.	93.393	197,425	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6947782	238641	Centers for Studies of IBD - Cellular and In Vivo Models (CIVM) Core	93.847	40,286	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6947165	238659	Billing Agreement - Jeff Gahan - Defining the impact of drug use on immune function and fitness against HIV-1	93.279	17,782	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6947502	238659	Billing Agreement - Martin Arreola Villanueva - Defining the impact of drug use on immune function and fitness against HIV-1	93.279	43,188	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6947501	238659	Billing Agreement - Sergio Triana - Defining the impact of drug use on immune function and fitness against HIV-1	93.279	19,744	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6947497	238659	Billing Agreement - Walaa Kattan - Defining the impact of drug use on immune function and fitness against HIV-1	93.279	20,052	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6947097	238659	Billing Agreement - Zoe Steier - Defining the impact of drug use on immune function and fitness against HIV-1	93.279	31,003	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6947133	238659	Billing Agreement-Alex Shalek-Defining the impact of drug use on immune function and fitness against HIV-1	93.279	56,779	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6945817	238695	Improving treatment of HER2+ breast cancer brain metastasis by targeting cancer metabolism	93.396	93,876	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6947498	240464	Billing Agreement - Alex Shalek - I4C 2.0 Immunotherapy for Cure	93.855	6,090	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6947500	240464	Billing Agreement - Sarah Quinn - I4C 2.0 Immunotherapy for Cure	93.855	2,518	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6947499	240464	Billing Agreement - Vincent Miao - I4C 2.0 Immunotherapy for Cure	93.855	14,419	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6948723	241484	Immunometabolic regulation of CD8+ T cell mediated intestinal epithelial cell death in people with HIV (PWH)	93.847	354,833	-

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Prime Sponsor Name	Project WBS id	Passthrough Number	WBS Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
DEPARTMENT OF HEALTH & HUMAN SERVICES	6945604	300374	The effects of unison production on speech fluency in people with aphasia	93.173	14,510	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6947968	300416	Influence of ADHD and Executive Function on the Development of Dyslexia	93.865	139,796	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6938915	SUBAWARD NO. 230203	Non-Human Primate Studies of Anesthetic Action	93.279	97,195	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6937453	SUBAWARD NO. 231125	Sleep-dependent Memory Processing in Schizophrenia	93.279	-2,805	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6942989	SUBAWARD# 235289	Platelet alphaIIbeta3 activation and therapeutic targeting	93.839	43,184	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6948080	SUBAWARD# 238799	COVID-19: CIMIT Research Proposal Peko Hosoi	93.286	94,747	-
			Total for Massachusetts General Hospital		**2,240,871**	**-**
Rutgers University						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6947470	2301	Synthesizability-constrained expansion and multi-objective evolution of antitubercular compounds	93.855	42,975	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6949902	SUB00002858	Synthesizability-constrained expansion and multi-objective evolution of antitubercular compounds	93.855	21,539	-
			Total for Rutgers University		**64,514**	**-**
Research Foundation of SUNY-Albany						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6943525	2-88226	Translational regulation during cigarette smoking-induced reprogramming of the rRNA epitranscriptome, in vitro and in a mouse smoking model	93.113	77,231	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6948913	2-95806	Translational regulation in exposure biology - Xenobiotic-induced reprograming of tRNA modifications and selective translation of codon-biased response genes in rat and human models	93.113	236,209	-
			Total for Research Foundation of SUNY-Albany		**313,440**	**-**
European Bioinformatics Institute						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6946780	2U24HG007234-09, MIT-4559-04	GENCODE: comprehensive reference genome annotation for human and mouse	93.172	-25,800	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6949072	MIT-4559-04	GENCODE: comprehensive reference genome annotation for human and mouse	93.172	195,574	-
			Total for European Bioinformatics Institute		**169,774**	**-**
Duke University						

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DEPARTMENT OF HEALTH & HUMAN SERVICES	6949426	303001422	Screening for Cys-Reactive Ligands to Target PAX3-FOXO1	93.353	36,955	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6946460	A032777	Project 3: Chemical Probe Discovery for PAX3-FOXO1	93.393	112,090	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6944917	A034481	Using Genetic Tools to Dissect Neural Circuits for Social Communication	93.242	335,052	-
			Total for Duke University		**484,097**	**-**
University of Kentucky						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6949052	3200005065-23-112	The impact of metformin on mechanisms that drive inflammation in older adults	93.866	2,008	-
			Total for University of Kentucky		**2,008**	**-**
University of Louisiana at Lafayette						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6947239	330185-01	HIVRAD Project: Defense-in-depth against mucosal HIV clade C invasion	93.855	220,713	-
			Total for University of Louisiana at Lafayette		**220,713**	**-**
Augusta University						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6949671	36350-10	Field deployable rapid diagnosis of sickle cell disease	93.847	4,968	-
			Total for Augusta University		**4,968**	**-**
McLean Hospital						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6947433	401663	Novel Treatment Targets For Affective Disorders Through Cross-Species Investigation of Approach/Avoidance Decision Making	93.242	776,644	-
			Total for McLean Hospital		**776,644**	**-**
National Bureau of Economic Research, Inc.						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6940132	4126B.MIT	What Does Health Insurance Do? Evidence from the Oregon Health Insurance Lottery	93.866	128,694	-
			Total for National Bureau of Economic Research, Inc.		**128,694**	**-**
University of Rochester						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6946424	417479-G/UR FAO GR510880	Passive Monitoring of Parkinson Disease Features at Home NINDS Morris K. Udall Centers of Excellence for Parkinson's Disease Research (P50)	93.853	16,006	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6949970	SUB00000634/URFAO:GR53 3986	Neural circuit control of fluid and solute clearance during sleep	93.853	32,029	-

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			Total for University of Rochester		**48,035**	**-**
Boston University						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6940789	4500003010	Functional reorganization of the language and domain-general multiple demand systems in aphasia	93.173	434,990	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6943389	4500003437	Multidimensional Optimization of Voltage Indicators for In Vivo Neural Activity Imaging	93.242	448,507	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6947736	4500004266	Precise targeting of T1D specific T cells using CAR and peptide□MHC chimeric antigen ligands	93.847	137,032	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6949512	4500004579	Neural Markers of Treatment Mechanisms and Prediction of Treatment Outcomes in Social Anxiety	93.242	182,643	-
			Total for Boston University		**1,203,172**	**-**
The Broad Institute, Inc.						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6948437	50000655-5500001351	Infection site-specific activation and amplification of antimicrobial peptide activity	93.855	1,324,043	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6943347	5000419-5500001352	Genomic applications to transform Gram-negative Abx discovery	93.855	-37	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6943346	5000657-5500001353	Innovative technologies to transform antibiotic discovery - Administrative Core	93.855	-1,388	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6945975	5000658-5500001353	Innovative technologies to transform antibiotic discovery - Administrative Core	93.855	-200	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6948440	5000659-5500001353	Innovative technologies to transform antibiotic discovery - Administrative Core	93.855	12,033	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6946096	5001139-5500001351	Infection site-specific activation and amplification of antimicrobial peptide activity	93.855	22,958	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6945980	5001141-5500001352	Genomic applications to transform Gram-negative Abx discovery	93.855	-3,471	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6946901	5001242-5500001658	Single Cell Transcriptomic and Epigenomic Dissection of Opioid and Cocaine Responses in HIV	93.279	256,021	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6948730	5001243-5500001658	Single Cell Transcriptomic and Epigenomic Dissection of Opioid and Cocaine Responses in HIV	93.279	590,562	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6948439	5001436-5500001352	Genomic applications to transform Gram-negative Abx discovery	93.855	81,310	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6948676	5001644-5500001849	Unraveling the genetic programs engaged in ASD neurons through coupled transcriptomic and phenotypic readouts	93.242	94,067	-
			Total for The Broad Institute, Inc.		**2,375,898**	**-**
Northeastern University						

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DEPARTMENT OF HEALTH & HUMAN SERVICES	6935020	500489-78051	GuMI: New In Vitro Platforms to Parse the Human Gut Epithelial-Microbiome-Immune Axis	93.286	-763	-
			Total for Northeastern University		**-763**	**-**
Tufts Medical Center						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6947504	5017158-SERV	Johns Hopkins-Tufts Trial Innovation Center	93.350	76,787	-
			Total for Tufts Medical Center		**76,787**	**-**
Schepens Eye Research Institute						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6946214	533468	Innate and Adaptive Immunity in the Pathogenesis of Glaucoma	93.867	119,934	-
			Total for Schepens Eye Research Institute		**119,934**	**-**
Lehigh University						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6944249	544267-78002	Promoting Receptor Protein Tyrosine Phosphatase Activity by Targeting Transmembrane Domain Interactions	93.859	117,799	-
			Total for Lehigh University		**117,799**	**-**
The Scripps Research Institute						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6945783	5-53703	S-Nitrosylation-induced posttranslational modification and aberrant cell signaling in sporadic Alzheimer's disease	93.866	67,673	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6945785	5-54494	Combining germline-targeting, B cell immunofocusing and Env-Ab co-evolution strategies to induce HIV Envelope V2-apex broadly neutralizing antibodies	93.855	149,189	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6945782	5-54554	Consortia for HIV/AIDS Vaccine Development (CHAVD) RFA-AI-18-001	93.855	10,381	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6946291	5-54638	Consortia for HIV/AIDS Vaccine Development (CHAVD) Supplement Project 3	93.855	-280	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6946295	5-54642	Consortia for HIV/AIDS Vaccine Development (CHAVD) Supplement Project 7	93.855	-4,783	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6947246	5-54696	The Consortium for Viral Systems Biology (CViSB)	93.855	59,383	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6947986	5-54881; K00071	Consortia for HIV/AIDS Vaccine Development (CHAVD) RFA-AI-18-001	93.855	779,657	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6948714	5-54944	Consortium for HIV/AIDS Vaccine Development (CHAVD)-Supplement 6	93.855	144,132	-

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DEPARTMENT OF HEALTH & HUMAN SERVICES	6948616	5-54952	Consortia for HIV/AIDS Vaccine Development (CHAVD) Supplement Project 8	93.855	115,173	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6949792	5-55023	The Consortium for Viral Systems Biology (CViSB)	93.855	8,347	-
			Total for The Scripps Research Institute		**1,328,872**	**-**
University of Connecticut						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6941937	5652840/PO#357361/357361	Inhibition of Translesion Synthesis as a Novel Strategy for Cancer Chemotherapy	93.395	86,097	-
			Total for University of Connecticut		**86,097**	**-**
Northwestern University						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6946844	60059581 MIT	CRITICAL: Collaborative Resource for Intensive care Translational science, Informatics, Comprehensive Analytics, and Learning	93.350	67,617	-
			Total for Northwestern University		**67,617**	**-**
University of South Florida						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6948873	6128-1009-00-A	Voice as a Biomarker of Health: Building an ethically sourced, bio-acoustic database to understand diseases like never before	93.310	124,514	-
			Total for University of South Florida		**124,514**	**-**
Stanford University						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6948460	62106626-28291	Project 1 - Influenza responses and repertoire in vaccination, infection and tonsil organoids	93.855	56,836	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6948428	62196377-28291	Influenza responses and repertoire in vaccination, infection and tonsil organoids	93.855	79,923	-
			Total for Stanford University		**136,759**	**-**
Cold Spring Harbor Laboratory						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6946024	64580527/PO# 921003-SV	A High Resolution Cell Type Atlas of the Mouse Forebrain.	93.242	17,339	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6949814	65300112/PO#: 921072-SV	High-throughput approaches to local and long-range synaptic connectivity	93.242	205,650	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6946608	65300212	High-throughput approaches to local and long-range synaptic connectivity	93.242	40,042	-
			Total for Cold Spring Harbor Laboratory		**263,031**	**-**
University of California-San Diego						

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DEPARTMENT OF HEALTH & HUMAN SERVICES	6945353	704347	Reverse Engineering the Brain Stem Circuits that Govern Exploratory Behavior	93.853	551,877	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6949743	706254	Harnessing iron acquisition to hinder enterobacterial pathogenesis	93.855	74,303	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6936867	91379849 (PO# S9001710)	Infection-homing nanosystems as antibacterial therapeutics-delivery platforms	93.855	32,165	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6943714	KR 703870	Antimicrobial activity of Escherichia coli Nissle 1917 microcin M	93.855	63,209	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6949034	SUBAWARD# 705701	Harnessing iron acquisition to hinder enterobacterial pathogenesis	93.855	146,321	-
			Total for University of California-San Diego		**867,875**	**-**
Indiana University						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6944530	8750-MIT	Molecular engineering of complementary glucose-responsive conformational switches in insulin and glucagon	93.847	109,859	-
			Total for Indiana University		**109,859**	**-**
University of California - Santa Cruz						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6944227	A00-0876-S001	Vibrio cholerae biofilms: structure, function, regulation and role in infection	93.855	21,382	-
			Total for University of California - Santa Cruz		**21,382**	**-**
University of Minnesota						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6942674	A007605201	Opto-Crown: Transparent skull with embedded optics for cortex-wide cellular resolution imaging in freely moving mice	93.853	34,635	-
			Total for University of Minnesota		**34,635**	**-**
University of California/Davis						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6946042	A19-1044-S004	Recombinant Immunolabels for Nanoprecise Brain Mapping Across Scales	93.853	104,825	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6946140	A21-1551-S003	Mutiplex imaging in vivo with an extend color-palette of neuromodulator sensors	93.853	66,224	-
			Total for University of California/Davis		**171,049**	**-**
Praevium Research Inc.						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6940040	AGMT DTD 9/17/2018	SBIR Phase I: Low-cost and high performance MEMS-VCSEL technology for next generation swept source optical coherence tomography and microscopy	93.394	53,803	-

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			Total for Praevium Research Inc.		**53,803**	**-**
Collagen Medical LLC						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6946396	AGMT EFF 9/1/21	New class of collagen-targeted contrast agents for Magnetic Resonance Imaging	93.286	44,228	-
			Total for Collagen Medical LLC		**44,228**	**-**
InnoTech LLC						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6944979	AGRMT DATED 02/08/2021	COVID-19: A multimodal platform for Oral screening of COVID-19	93.310	1,009	-
			Total for InnoTech LLC		**1,009**	**-**
University of Pittsburgh						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6943008	AWD00001777 (133980-1)	Motor cortical signaling of impedance during manipulation	93.853	154,343	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6946689	AWD00002100 (136326-1)	Multi-cell type human liver on chip microphysiological platform to examine CRISPR-based gene modulation	93.847	83,592	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6947191	AWD00004831 (137322-2)	Identification of TDP-43 modifiers through single-cell transcriptional and epigenomic dissection of ALS and FTLD-MND	93.853	9,691	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6949319	AWD00004831 (138924-2)	Identification of TDP-43 modifiers through single-cell transcriptional and epigenomic dissection of ALS and FTLD-MND	93.853	11,419	-
			Total for University of Pittsburgh		**259,045**	**-**
Children's Hospital Boston						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6942423	GENFD0001734192	Novel MRI Assessment of Placental Structure and Function Throughout Pregnancy	93.865	151,948	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6944766	GENFD0001950806	Identifying Immune and Epithelial Network Signatures in Very Early Onset Inflammatory Bowel Disease	93.847	2,287	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6945637	GENFD0002058190	Molecular Circuits in the Hematopoietic Stem Cell Niche	93.847	-376	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6947250	GENFD0002152100	Fetal MRI: robust self-driving brain acquisition and body movement quantification	93.286	303,733	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6947723	GENFD0002214909	Molecular Circuits in the Hematopoietic Stem Cell Niche	93.847	283,104	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6950079	GENFD0002214909/GENFD0002058190/GENFD0001889843	Molecular Circuits in the Hematopoietic Stem Cell Niche	93.847	13,915	-

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			Total for Children's Hospital Boston		**754,611**	**-**
University of Virginia						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6943791	GR013362.SUB00000063	Multi-scale model of microbial phenotype modulation by mucins	93.855	71,167	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6948934	GR100645.SUB00000113	Discover the signaling basis for OPC homeostasis	93.853	39,108	-
			Total for University of Virginia		**110,275**	**-**
Yale University						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6940556	GR105733 (CON-80001701)	Human-centered Design and Communities of Practice to Improve Delivery of Home-based TB Contact Investigation in Uganda	93.855	6,718	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6944458	GR110761 (CON-80002664)	ELECTRO-BOOST: Electroencephalography for cerebral trauma recovery & oxygenation	93.853	3,591	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6944971	M17A12653(A10974)	Systems Immune Profiling of Divergent Responses to Infection	93.855	-151	-
			Total for Yale University		**10,158**	**-**
MicroBrightField, Inc						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6946605	MH124566-01A1	NeuroExM	93.242	329,432	-
			Total for MicroBrightField, Inc		**329,432**	**-**
Neural Dynamics Technologies						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6946249	NDT_21_01	Designing low-cost, customizable high-density probes for acute and chronic neural recordings in rodents	93.242	39,798	-
			Total for Neural Dynamics Technologies		**39,798**	**-**
University of Massachusetts Medical Center						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6943957	OSP2018125/WA01020040	Develop combinatorial non-viral and viral CRISPR delivery for lung diseases	93.310	-5,113	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6948405	OSP33133-02	Center for 3D Structure and Physics of the Genome	93.310	159,181	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6945739	OSP33133-02, PO WA01146636	Center for 3D Structure and Physics of the Genome	93.310	12,179	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6947831	OSP33133-03	Center for 3D Structure and Physics of the Genome	93.310	343,385	-

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DEPARTMENT OF HEALTH & HUMAN SERVICES	6944306	OSP33133-03/WA01042853	Center for 3D Structure and Physics of the Genome	93.310	4,180	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6945540	PO WA01146635/OSP33133 -03	Center for 3D Structure and Physics of the Genome	93.310	-5,122	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6946293	SUB00000076/PO# WA01159829	Develop combinatorial non-viral and viral CRISPR delivery for lung diseases	93.310	244,120	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6948746	SUB00000076/PO# WA01312122	Develop combinatorial non-viral and viral CRISPR delivery for lung diseases	93.310	189,063	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6947981	SUB00000139	A systems immunology approach to evaluate malaria vaccine performance in endemic regions of Kenya	93.855	119,347	-
			Total for University of Massachusetts Medical Center		**1,061,220**	**-**
Jackson Laboratory						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6947189	PO # 217046-0-SERV/210368-0223-03	Genome Technologies Coordinating Center - Programmable sensing of RNA using molecular sensors	93.172	185,051	-
			Total for Jackson Laboratory		**185,051**	**-**
Johns Hopkins University						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6946631	PO# 2005303292	Reverse Engineering Zonation-Specific and Age-Specific iPSC-Derived Cerebrovascular Models Based on Transcriptomic Profiling of the Human Brain	93.839	268,795	-
			Total for Johns Hopkins University		**268,795**	**-**
New York University						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6946251	PO# M190200494, 18-A0-00-1001558	CRCNS: An Integrative Approach for the Study of Hippocampal-Neocortical Memory Coding during Sleep	93.242	-6	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6947721	PO# M190200494; 18-A0-00-1001558-01	CRCNS: An Integrative Approach for the Study of Hippocampal-Neocortical Memory Coding during Sleep	93.242	214,652	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6947479	PO#M220565946/21-A1-00-1006306	Chromatin architecture as a regulator of dendritic cell function	93.855	57,065	-
			Total for New York University		**271,711**	**-**
University of Maryland						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6942722	PO#1000001612/SUBAWARD F301577-1	Internal Dynamics of the Postsynaptic Density	93.242	42,237	-
			Total for University of Maryland		**42,237**	**-**
Dartmouth College						

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DEPARTMENT OF HEALTH & HUMAN SERVICES	6942712	R1346	Computational design of novel protein binders based on structure mining and learning from data	93.859	325,557	-
			Total for Dartmouth College		**325,557**	**-**
University of California-Riverside						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6939893	S-001090	RAPs-mediated post-transcriptional control in Apicomplexan parasites	93.855	50,900	-
			Total for University of California-Riverside		**50,900**	**-**
Pennsylvania State University						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6948796	S003298-DHHS	SCH: AI-Enhanced Multimodal Sensor-on-a-chip for Alzheimer's Disease Detection	93.866	39,832	-
			Total for Pennsylvania State University		**39,832**	**-**
DeNovX, LLC						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6940412	SBIR DTD 03/22/2019	SBIR Phase II: Nucleation Enhanced Crystallization of Pharmaceuticals in Continuous Flow Manufacturing to Mitigate Therapeutic Drug Shortages	93.350	41,028	-
			Total for DeNovX, LLC		**41,028**	**-**
Ension, Inc.						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6945541	STTR EFFECTIVE 06/16/2020	Magnetic Levitation Motor for Pediatric Cardiac and Cardiopulmonary Therapies	93.837	137,277	-
			Total for Ension, Inc.		**137,277**	**-**
Integrated Laboratory Systems, Inc.						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6939579	SUB UNDER U44ES024698	SBIR Phase II: CometChip: Novel Advances in Throughput and Capacity for the in vivo Comet Assay	93.113	44,333	-
			Total for Integrated Laboratory Systems, Inc.		**44,333**	**-**
Portland State University						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6949016	SUBAWARD 100254	7-deazaguanines in DNA: mechanism and structure of complex genome modification	93.859	18,657	-
			Total for Portland State University		**18,657**	**-**
Trustees of Boston University						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6946220	SUBAWARD NO. 4500004001	Precision Monitoring and Assessment in the Framingham Study: Cognitive, MRI, Genetic and Biomarker Precursors of AD & Dementia	93.866	-255	-

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DEPARTMENT OF HEALTH & HUMAN SERVICES	6948765	SUBAWARD NO. 4500004348	Precision Monitoring and Assessment in the Framingham Study: Cognitive, MRI, Genetic and Biomarker Precursors of AD & Dementia	93.866	252,662	-
			Total for Trustees of Boston University		**252,407**	**-**
Massachusetts Eye and Ear Infirmary						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6940820	SUBAWARD NO. 530673	Implantable Microphones for Fully Implantable Hearing Prosthetics	93.173	78,505	-
			Total for Massachusetts Eye and Ear Infirmary		**78,505**	**-**
Mbarara University of Science and Technology						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6947312	U54TW012043	From medical images to healthcare practice: data science for improved clinical outcomes and impact across sub-Saharan Africa	93.310	31,419	-
			Total for Mbarara University of Science and Technology		**31,419**	**-**
University of Connecticut Health Center						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6944777	UCHC7-129146661-A7	A Comprehensive Functional Map of Human Protein-RNA Interactions	93.172	5,849	-
			Total for University of Connecticut Health Center		**5,849**	**-**
University of Texas Health Science Center						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6946594	UTH210987	Digital biomarkers for a low cost ambulatory test for early detection of Alzheimer's disease	93.866	91,839	-
			Total for University of Texas Health Science Center		**91,839**	**-**
University of Washington						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6943230	UWSC11889 / PO#48380	Genetic, Metabolic and Regulatory Control of MIC and Relapse in M. tuberculosis	93.855	30,238	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6944261	UWSC12292 BPO: 51861	Optogenetics to improve hand function after spinal cord injury	93.853	80,707	-
			Total for University of Washington		**110,945**	**-**
Vanderbilt University						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6946158	VUMC77355	The role of distinct cancer stem cell populations in colorectal cancer	93.397	72,364	-
			Total for Vanderbilt University		**72,364**	**-**
Washington University						

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DEPARTMENT OF HEALTH & HUMAN SERVICES	6944568	WU-21-57	Multiscale models of fibrous interface mechanics	93.846	77,485	-
			Total for Washington University		**77,485**	**-**
			TOTAL for Department of Health & Human Services		**26,368,982**	**-**

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DEPARTMENT OF HOMELAND SECURITY						
CNA						
DEPARTMENT OF HOMELAND SECURITY	6947885	19-MIT-9-1478-MSTR	FEMA LCSC - Project Management Support	97.RD	356,421	-
DEPARTMENT OF HOMELAND SECURITY	6944341	PO-0024408/1487.0016.E268.00	FEMA LCSC - Project Management Support	97.RD	-9,916	-
			Total for CNA		**346,505**	**-**
Pennsylvania State University						
DEPARTMENT OF HOMELAND SECURITY	6949050	SA23-20	Large Area, Wide Band Gap, Highly Sensitive Polycrystalline Radiation Detectors Fabricated by Novel Field Assisted Sintering Technology (FAST) and Manufacturing	97.077	60,445	-
			Total for Pennsylvania State University		**60,445**	**-**
			TOTAL for Department of Homeland Security		**406,950**	**-**

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DEPARTMENT OF TRANSPORTATION						
Boston University						
DEPARTMENT OF TRANSPORTATION	6943154	4500003246	ASCENT Project 3 - Cardiovascular Disease and Aircraft Noise Exposure - Impacts of Aircraft Noise Exposure on Business Activities	20.RD	19,252	-
			Total for Boston University		**19,252**	**-**
University of Maryland - College Park						
DEPARTMENT OF TRANSPORTATION	6944808	92207-Z9609201	Trajectory-Based Operations Analysis Phase II	20.RD	18,866	-
			Total for University of Maryland - College Park		**18,866**	**-**
Utah Department of Transportation						
DEPARTMENT OF TRANSPORTATION	6947318	AGMT DTD 04/06/2022	Connected Traffic Signal Corridor Operations	20.RD	111,453	-
			Total for Utah Department of Transportation		**111,453**	**-**
			TOTAL for Department of Transportation		**149,571**	**-**

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MISCELLANEOUS FEDERAL GOVT						
Battelle Memorial Institute						
MISCELLANEOUS FEDERAL GOVT	6949893	0000870102	Support the Defense Advanced Research Projects Agency (DARPA) BRACE program	12.RD	18,538	-
			Total for Battelle Memorial Institute		**18,538**	**-**
University of California-San Diego						
MISCELLANEOUS FEDERAL GOVT	6940175	111438341/ PO#S9002172	Nonequilibrium Order Parameter Optoelectronics for Quantum Information Processing (NOPO-QuIP)	12.910	200,770	-
			Total for University of California-San Diego		**200,770**	**-**
Purdue University						
MISCELLANEOUS FEDERAL GOVT	6940314	15200066-022	MCOQA: Mechanically-driven, COherence-enhanced Quantum Angle	12.910	132,129	-
			Total for Purdue University		**132,129**	**-**
Tufts University						
MISCELLANEOUS FEDERAL GOVT	6946395	104049-00001:AG0032;EP0210852	Integrated Approaches to Enhance Sustainability, Resiliency and Robustness in US Agri-Food Systems: Enabling cellular agriculture with cross-disciplinary approaches	10.310	69,208	-
			Total for Tufts University		**69,208**	**-**
Harvard School of Public Health						
MISCELLANEOUS FEDERAL GOVT	6934711	112544-5087396	Projecting and Quantifying Future Changes in Socioeconomic Drivers of Air Pollution and its Health-related Impacts	66.509	112,224	-
			Total for Harvard School of Public Health		**112,224**	**-**
RTI International						
MISCELLANEOUS FEDERAL GOVT	6944125	1-312-0217117-65876L	Economy-Wide Modeling of Energy/Environment Policy Scenarios	66.RD	85,427	-
			Total for RTI International		**85,427**	**-**
Virginia Polytechnic Institute & State University						
MISCELLANEOUS FEDERAL GOVT	6947739	451767-19825	Enabling real-time, low-cost measurement of hazardous air pollutants	66.509	129,057	-
			Total for Virginia Polytechnic Institute & State University		**129,057**	**-**

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Millennium Challenge Account Morocco (MCA-Morocco)						
MISCELLANEOUS FEDERAL GOVT	6943692	EW-20	The J-PAL and EPoD Employment Lab	85.RD	2,404,960	1,832,612
			Total for Millennium Challenge Account Morocco (MCA-Morocco)		**2,404,960**	**1,832,612**
University of Michigan						
MISCELLANEOUS FEDERAL GOVT	6949267	SUBK00018687	Michigan Retirement and Disability Research Center (MRDRC)	96.007	79,650	-
			Total for University of Michigan		**79,650**	**-**
			TOTAL for Miscellaneous Federal Govt		**3,231,963**	**1,832,612**

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NATIONAL AERONAUTICS AND SPACE ADMINISTRATION						
University of California - Berkeley						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6946134	00010809	A Bayesian View of the Solar Wind Impact on Mars' Magnetic Environment	43.001	382	-
			Total for University of California - Berkeley		**382**	**-**
Universities Space Research Association						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6943259	08-0082	Tracing Cosmic Star-Forming Gas: Connecting Cii, HCN, and other Species in the LEGO Survey	43.RD	34	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6949472	09-0215	Study of Interstellar Magnetic Polarization: A Legacy Investigation of Filaments (SIMPLIFI)	43.RD	71,966	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6949300	10_0507	Feedback and the Gao & Solomon Relation seen through [CII] and HCN	43.001	62,432	-
			Total for Universities Space Research Association		**134,432**	**-**
University of Illinois-Urbana Champaign						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6941777	097265-17589	Development of the Cryogenic Hydrogen-Energy Electric Transport Aircraft (CHEETA) Design Concept	43.002	20,943	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6948766	109694-19065	Robust and Resilient Autonomy for Advanced Air Mobility	43.002	3,061	-
			Total for University of Illinois-Urbana Champaign		**24,004**	**-**
University of California, Los Angeles						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6943435	1000 G XD598	Shining Light on Supersonically Induced Gas Objects	43.001	15,169	-
			Total for University of California, Los Angeles		**15,169**	**-**
Northern Arizona University						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6947816	1005096-01	The MIT-Hawaii Near Earth Object Spectroscopic Survey	43.001	50,692	-
			Total for Northern Arizona University		**50,692**	**-**
Purdue University						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6946550	12000414-018	The role of boreal wildfires in the global carbon budget: A process-based analysis using satellite-derived fire burn severity data	43.001	7,310	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6946432	12000416-003	The evolution of planetary crusts through lunar gravity and topography	43.001	8,957	-

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			Total for Purdue University		**16,267**	**-**
University of Scranton						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6946826	121625	Enabling Space Weather Research with Global Scale Amateur Radio Datasets	43.001	60,008	-
			Total for University of Scranton		**60,008**	**-**
CalTech - Jet Propulsion Lab						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6899758	1283622	Voyager Interstellar Mission (VIM) Plasma Science	43.RD	332,877	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6932364	1532689	EUROPA - MISE Co-I Subcontract	43.RD	24,939	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6941778	1633043	UNVEILING THE ACCRETION PHYSICS AND GEOMETRY IN OAO 1657-415 WITH NuSTAR (4181)	43.001	2,309	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6946722	1672484	Tool for the Study of Interstellar Object Rendezvous Missions	43.001	16,628	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6946921	1672592	Information-Driven and Risk-Bounded Autonomy for Adaptive Science and Exploration	43.001	40,653	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6947429	1674445	Impacts of Changing Sea-Ice Regime on Arctic Ocean Biology	43.001	19,296	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6947689	1676067	Toward Seamless Simulation, Estimation, and Prediction of Weather and Climate with the GEOS/ECCO Coupled Model and Data Assimilation system	43.001	7,426	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6948945	1686358	ECCO: Connecting NASA Ocean, Cryosphere, and Biogeochemistry Observations to Support National Climate Policy	43.001	45,257	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6949198	1689605	A CMOS-Molecular-Clock Integrated Platform for Deep Communications, Navigations and Radio Science (Year 3)	43.001	23,162	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6936482	CREI 1576768	Psyche - JPL	43.RD	500,440	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6946817	CREI# 1672889	X-Racer: Resilient, adaptive, and superhuman navigation of off-road vehicles at extreme-speeds	43.RD	477,294	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6940961	CREI1628175	MIT-JPL EDU	43.001	10,964	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6946595	RSA #: 1667219	Toward seamless simulation, estimation, and prediction of weather and climate with the GEOS/ECCO coupled model and data assimilation system.	43.001	16,060	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6947685	RSA 1670299	Consortium on Ultracold Atoms in Space – Year 9	43.001	40,000	-

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NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6943975	RSA NO. - 1654803	Toward seamless simulation, estimation, and prediction of weather and climate with the GEOS/ECCO coupled model and data assimilation system.	43.001	-133	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6944556	RSA NO. 1657974	Ice sheet mechanical properties as revealed from time-varying surface velocity fields	43.001	-7,744	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6944746	RSA NO. 1658853	A CMOS-Molecular-Clock Integrated Platform for Deep Space Communications, Navigations and Radio Science	43.001	-6,412	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6945405	RSA NO. 1660046	A Molecular Clock Architecture for Deep Space Inter-SmallSat Radio Occultation	43.001	32,265	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6946637	RSA NO. 1670737	Accelerating MCMC to Operational Speeds	43.001	16,295	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6948944	RSA NO. 1682329	Unveiling the missing stellar mergers in the Milky Way: A legacy NEOWISE search for mid-infrared outbursts in the Galactic plane	43.001	7,754	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6948903	RSA NO. 1686919	Integrating Uncertainty Quantification with Traditional Systems Engineering Practices	43.001	15,956	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6948916	RSA NO. 1687391	Robust Machine Learning for Autonomous Visual Navigation Under Variable Illumination Conditions	43.001	21,573	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6949209	RSA NO. 1689914	Tool for the Study of Interstellar Object Rendezvous Missions with Hybrid Propulsion Systems	43.001	13,032	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6949301	RSA NO. 1690052	New Bayesian Retrieval Methods at Scale	43.RD	60,962	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6947001	RSA NO. 683230	A CMOS-Molecular-Clock Integrated Platform for Deep Space Communications, Navigations and Radio Science	43.001	-8,941	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6944912	RSA NO.1659474	Information-Driven and Risk-Bounded Autonomy for Adaptive Science and Exploration	43.RD	13	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6930713	SUBCONTRACT NO. 1510842	Soil Moisture Science and Product Development	43.RD	338,681	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6945468	SUBCONTRACT NO. 1664286	6A Internship - Perseverance project	43.001	-5,184	-
			Total for CalTech - Jet Propulsion Lab		**2,035,422**	**-**
University of Southern California						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6942679	128759572	SPCTOR: Sensing-Policy ConTroller and OptimezeR	43.001	5,356	-
			Total for University of Southern California		**5,356**	**-**
Applied Physics Lab of Johns Hopkins						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6939800	130359	Europa Imaging System (EIS)	43.RD	26,107	-

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NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6947990	174756	Dragonfly	43.RD	28,768	-
			Total for Applied Physics Lab of Johns Hopkins		**54,875**	**-**
University of California-San Diego						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6943170	130808869 (S9002606)	Routes of the upper limb of the global overturning circulation	43.001	9,090	-
			Total for University of California-San Diego		**9,090**	**-**
University of Colorado Boulder						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6946805	1561486 / PO 1001608250	Spatio-temporal evolution of thermospheric O/N2: Its drivers and impacts	43.001	40,939	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6947202	1561997; PO# 1001641238	Development of the Space Ultraviolet Multi-object Observatory (SUMO) Concept and Spectrograph	43.001	10,562	-
			Total for University of Colorado Boulder		**51,501**	**-**
Johns Hopkins University						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6941428	157497	Establishing the Presence of Ethane in Titan's Lakes	43.001	9,057	-
			Total for Johns Hopkins University		**9,057**	**-**
Planetary Science Institute						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6944815	1780-MIT	Studying small-body atmospheres through stellar occultations	43.001	82,757	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6948763	1890-MIT	Investigating the Geophysical Control of 67P/Churyumov-Gerasimenko’s Outburst Plumes	43.001	20,256	-
			Total for Planetary Science Institute		**103,013**	**-**
University of New Hampshire						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6938280	18-028	Storm Enhanced Density, Tongues of Ionization, and Sub Auroral Polarization Streams	43.001	4,596	-
			Total for University of New Hampshire		**4,596**	**-**
Columbia University						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6946647	2(GG016372-01)	The GAPS Experiment: A Search for Dark Matter Using Low-Energy Antiparticles	43.001	113,981	-
			Total for Columbia University		**113,981**	**-**
University of Alabama in Huntsville						

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NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6940732	2019-064	Turbulence as Indicator of Physical Processes at the Heliospheric Interface	43.001	-45	-
			Total for University of Alabama in Huntsville		**-45**	**-**
University of Texas at Arlington						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6949404	2021GC2752	Study of multi-scale forcing impact on the Ionosphere-Thermosphere system: Support from physical models and observations	43.001	25,120	-
			Total for University of Texas at Arlington		**25,120**	**-**
Southwest Research Institute						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6893453	299433Q/SUB UNDER NASW-02008	New Horizon Science Team Member 05310-SOW-02 Rev O Chg O	43.RD	3,004	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6938097	K99059JRG	Lucy Phase B	43.RD	109,623	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6939450	L99059JRG	Investigating clouds and fogs on Titan	43.001	2,639	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6943416	N99069EH	Wave-mean interaction in Pluto's atmosphere	43.001	2,928	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6943437	N99074DS	Delivering Stratospheric Ices to Titan's Surface through Methane Rain and Their Effects on Surface Albedo Changes	43.001	45,433	-
			Total for Southwest Research Institute		**163,627**	**-**
Trustees of Boston University						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6944275	4500003542	Our Heliospheric Shield	43.001	37,162	-
			Total for Trustees of Boston University		**37,162**	**-**
Boston University						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6949124	4500004476	Our Heliospheric Shield	43.001	28,057	-
			Total for Boston University		**28,057**	**-**
Space Telescope Science Institute						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6943190	51787	JWST Telescope Scientist Investigations - 2	43.001	62,498	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6938815	HST-GO-15085.001-A	Galaxies in the Diffuse Baryon Field Approaching Reionization: A Joint Study with JWST, HST, and Large Telescopes (HST 15085)	43.RD	54,805	-

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NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6938918	HST-GO-15163.011-A	COS Ultraviolet Baryon Survey (CUBS) (HST 15163)	43.RD	27,364	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6940222	HST-GO-15204.001-A	Testing our scenario of a failed wind for TW Hya (HST 15204)	43.RD	-1,697	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6937649	HST-GO-15304-001-A	Collecting the Puzzle Pieces: Completing HST's UV +NIR Survey of the TRAPPIST-1 System ahead of JWST	43.RD	36,845	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6940574	HST-GO-15641.014-A	Focus on Betelgeuse	43.RD	-399	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6942525	HST-GO-15657.003-A	HD 222925: A unique opportunity to study the full range of nuclei produced by a single r-process event (HST-GO-15657)	43.RD	13,680	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6941622	HST-GO-15661.001-A	Testing the Limits of AGN Feedback in Starburst and QSO Central Cluster Galaxies (HST-GO-15661)	43.RD	49,046	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6943289	HST-GO-15888.001-A	A pure-parallel search for faint stuff in star forming regions (HST-GO-15888)	43.RD	89,855	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6943508	HST-GO-15951.003-A	Testing r-process nucleosynthesis models with two r-process enhanced stars (HST-GO-15951)	43.RD	7,163	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6942853	HST-GO-16001.002-A	STUDYING AGN FEEDING AND FEEDBACK IN THE MOST QUENCHED COOL CORE CLUSTER (HST-GO-16001)	43.RD	-1,256	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6943671	HST-GO-16072.002-A	Constraining the local environment and possible binarity of the closest-known Fast Radio Burst source (HST 16072)	43.RD	254	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6944403	HST-GO-16167.002-A	Confirming the binarity of Kuiper Belt Object 2015 RR245: a test of the streaming instability	43.RD	-62	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6947220	HST-GO-16655.008-A	Betelgeuse: An Iconic and Surprising Red Supergiant	43.RD	4,144	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6947738	HST-GO-16664.002-A	A repeating fast radio burst in a globular cluster at 3.6 Mpc. (HST-GO-16664)	43.001	10,618	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6947733	HST-GO-16689.001-A	Using STIS ultraviolet spectroscopy to understand the physical properties, evolution, and structure of white dwarfs in sixteen newly discovered ultracompact binaries (HST-GO-16689)	43.001	7,480	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6946900	HST-GO-16756.001-A	Quasars with small proximity zones: gravitationally lensed or exceptionally young? (HST-GO-16756)	43.RD	89,025	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6947916	HST-GO-16875.002-A	Reconnaissance Transmission Spectroscopy of the BEST Temperate Mini-Neptune for Atmospheric Characterisation	43.RD	52,420	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6949790	JWST-GO-02092.002-A	Unveiling stellar birth in a cosmologically common cradle	43.RD	14,399	-

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Prime Sponsor Name	Project WBS id	Passthrough Number	WBS Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
			Total for Space Telescope Science Institute		**516,182**	**-**
Northwestern University						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6944393	60057449 MIT	Magneto-Rotational Instability in the Sun? Global Radiation-MHD Simulations of the Near-Surface Shear Layer	43.001	63,931	-
			Total for Northwestern University		**63,931**	**-**
Stanford University						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6942497	62205664-136106	Development of integrated readout electronics for next generation X-ray CCDs	43.001	8,347	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6944318	62467927-176172	Safe Aviation Autonomy with Learning-Enabled Components in the Loop	43.002	156,949	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6945994	62652749-194612	Studying the Progenitors of Our Favorite Clusters at z > 1 (XMM 086264)	43.001	52,787	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6947193	62785990-214339	Next-generation event characterization for X-ray imaging observatories	43.001	76,985	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6949374	63043778-249824	X-Ray Speed-Reading: Integrated Readout Technology for Fast, Very Low-Noise, Megapixel X-Ray Imaging Detectors	43.001	3,225	-
			Total for Stanford University		**298,293**	**-**
University of Arizona						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6947837	656500	Alien Earths: Which Nearby Planetary Systems are Likely to Host Habitable Worlds and Life?	43.001	20,799	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6949086	679907	Origin of Lunar Crustal Magnetic Anomalies	43.001	28,582	-
			Total for University of Arizona		**49,381**	**-**
Combustion Research & Flow Technology, Inc.						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6946534	80NSSC21C0619/C841	Development and Implementation of Sub-grid Boiling Models into NASA Commercial Codes	43.RD	56,421	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6943776	SBIR UNDER 80NSSC20C00195/C805	Simulation of chilldown Process with a Sub-Grid Boiling Model - Phase II and II-E	43.RD	111,415	-
			Total for Combustion Research & Flow Technology, Inc.		**167,836**	**-**
Cornell University						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6943483	87941-11363	Understanding Transient Changes within Smooth Terrains on 67P	43.001	8,821	-

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Prime Sponsor Name	Project WBS id	Passthrough Number	WBS Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
			Total for Cornell University		**8,821**	**-**
Woods Hole Oceanographic Institution						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6942473	A101469	Exploring Ocean Worlds: Ocean System Science to Support the Search for Life	43.001	114,662	-
			Total for Woods Hole Oceanographic Institution		**114,662**	**-**
ESPACE						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6945404	AGMT DTD 1/26/2021	Bimodal Ion-Chemical Thruster System	43.RD	201,690	-
			Total for ESPACE		**201,690**	**-**
ProtoInnovations, LLC						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6944211	AGMT DTD 10/01/2020	Rover Slip Estimation and Traction Control for Optimal Mobility in Lunar Environments	43.RD	725,578	345,295
			Total for ProtoInnovations, LLC		**725,578**	**345,295**
Cross Trac Engineering, Inc.						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6946037	AGMT DTD 6/15/2021	Optical Intersatellite Communications for CubeSat Swarms	43.RD	-4,397	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6946046	AGMT DTD 8/5/2021	Optical Intersatellite Communications for CubeSat Swarms	43.RD	11,888	-
			Total for Cross Trac Engineering, Inc.		**7,491**	**-**
BlazeTech Corporation						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6946669	AGMT DTD 7/11/21	Testing the BlazeTech Innovative Filter at the MIT Haystack Observatory's Mars Atmospheric Test Laboratory	43.RD	-89	-
			Total for BlazeTech Corporation		**-89**	**-**
Applied NanoFemto Technologies, LLC						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6946300	AGMT DTD 9/14/2021	Photonics integrated circuits enabled miniature on-chip urine test system	43.RD	83,698	-
			Total for Applied NanoFemto Technologies, LLC		**83,698**	**-**
Little Prairie Services						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6947653	AGMT DTD. 04/26/2022	NTR Fuel Testing in MIT Reactor Facilities	43.RD	116,013	-
			Total for Little Prairie Services		**116,013**	**-**

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New Electricity Transmission Software Solutions Inc.						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6944869	AGMT EFF 9/1/20	Integrated Control and Protection Methodology Based on Energy-Space Modeling for EAP Aircraft	43.RD	7,609	-
			Total for New Electricity Transmission Software Solutions Inc.		**7,609**	**-**
LyteChip, Inc						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6947888	AGREEMENT DATED 11/1/2022	High-Performance On-chip Spectrometer for Space Applications	43.RD	17,767	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6946546	AGREEMENT DATED EFF 7/15/2021	High-Performance On-chip Spectrometer for Space Applications	43.RD	-423	-
			Total for LyteChip, Inc		**17,344**	**-**
Smithsonian Inst. - Astrophysical Observatory						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6942692	AR0-21002B	Catalog of Serendipitous Gratings Spectra (Chandra 21200078)	43.001	-205	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6947263	AR2-23001X	Investigating the Role of X-ray Photoevaporation and Absorption in Spatially-resolved Circumstellar Disks (Chandra 23200443)	43.001	2,212	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6944741	DD0-21125X	Investigating the vertical structure of the disc wind in Her X-1 (Chandra 21408743)	43.001	12,386	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6942802	GO0-21004B	Have Peter-Pan Systems Revealed the Fountain of Youth? (Chandra 21200100)	43.001	1,510	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6942803	GO0-21011X	Did RW Aur just swallow an iron-rich planet? (Chandra 21200280)	43.001	35,569	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6942757	GO0-21015A	THE TRUE NATURE OF X-RAYS FROM THE ORION TRAPEZIUM (Chandra 21200414)	43.001	75,289	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6942804	GO0-21021X	The future X-ray Sun - An HRC-I survey of old solar analogs (21200586)	43.001	5,244	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6944495	GO0-21035X	Precise Localization of Transient Low-Mass X-ray Binaries (Chandra 21400292)	43.001	234	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6943392	GO0-21114A	STUDYING AGN FEEDING AND FEEDBACK IN THE MOST QUENCHED COOL CORE CLUSTER (Chandra 21800206)	43.001	45,665	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6942805	GO0-21124A	Observing the Rarest Clusters at z>1 with Chandra (Chandra 21800528)	43.001	29,092	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6946562	GO1-22007X	The power of space: Simultaneous X-ray and UV monitoring if an accretion low-mass star (Chandra 22200086)	43.001	1,923	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6945796	GO1-22033A	The stellar wind of the B supergiant V662 Cas: smooth and cool. (Chandra 22400297)	43.001	22,010	-

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NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6945507	GO1-22046X	Precise Localization of Transient Low-Mass X-ray Binaries (Chandra 22400520)	43.001	8,878	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6946861	GO1-22060X	Simultaneous Chandra, NuSTAR and Radio Observations of CHIME-discovered repeating FRBs (Chandra 22500172)	43.001	8,325	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6945861	GO1-22116X	Mapping Gas Flows in AGNs by Reverberation (Chandra 22700634)	43.001	14,633	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6946874	GO1-22130A	UNVEILING THE INTRA-CLUSTER MEDIUM PROPERTIES OF THE MOST MASSIVE GALAXY CLUSTERS AT z > 0.9 (Chandra 22800459)	43.001	24,862	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6946118	GO1-22131A	Building a Legacy Progenitor-Selected Cluster Sample at z>1 (Chandra 22800462)	43.001	8,866	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6949006	GO2-23014A	A 14 minute orbital period direct impact accretor (Chandra 23300558)	43.001	14,600	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6948404	GO2-23034A	An optically discovered hour orbital period black widow candidate in a hierarchical triple (Chandra 23400545)	43.001	17,350	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6947195	GO2-23117X	A Low-z Anchor Sample for Cluster Evolutionary Studies (Chandra 23800272)	43.001	105,093	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6949129	GO2-23124X	The X-Ray Gas-to-Dust Abundance Ratio of Silicon towards the Galactic Bulge (Chandra 23910179)	43.001	29,368	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6937657	GO7-18012B	Definitive X-Ray Detection of the Class 0 Protostar HOPS 383 (Chandra 18200290)	43.RD	2,164	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6942233	GO9-20005A	Stellar Winds in the Nearest Starburst Cluster: A Deep Look at High Resolution Spectra of NGC 3603 (Chandra 20200133)	43.001	-630	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6940869	GO9-20019X	Testing X-ray activity as an age indicator (Chandra 20200630)	43.001	7,631	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6940590	GO9-20117A	Studying the Progenitors of Our Favorite Clusters at z > 1 (Chandra 20800438)	43.001	1,893	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6943184	SV0-09008	Readying X-ray Gratings and Optics for Space Applications: Manufacturability & Alignment	43.001	32,065	31,415
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6944428	SV0-09018	Technology Development of High Speed CMOS Detectors and Multilayer Mirrors for Dynamic Solar Soft X-ray Spectral Imaging	43.001	42,670	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6949515	SV1-31007	Fabrication and testing of the x-ray reflection grating for the COronal OverLapogram - Ancillary Imaging Diagnostics (COOL-AID) instrument on the High-resolution Coronal Imager (Hi-C) sounding rocket	43.001	35,009	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6926645	SV2-82023	ACIS Science Support for the Chandra Program	43.RD	255,522	-

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NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6895251	SV3-73016	Support of the Chandra X-Ray Center (CXC)	43.RD	3,274,275	-
			Total for Smithsonian Inst. - Astrophysical Observatory		**4,113,503**	**31,415**
Sydor Technologies						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6949021	AWARD ARVD. 10/18/2022	Soft X-ray CMOS Detectors for Space Exploration	43.RD	21,413	-
			Total for Sydor Technologies		**21,413**	**-**
Georgia Institute of Technology						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6948570	AWD-003322-G1	Electronic Life-detection Instrument for Enceladus/Europa (ELIE)	43.001	11,147	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6947991	AWD-003577-G5	Lowering Emissions and Environmental Impact from Civil Supersonic Transport	43.002	168,280	-
			Total for Georgia Institute of Technology		**179,427**	**-**
National Institute of Aerospace						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6945221	C20-201127-MIT	Tunable mid-wave infrared (MWIR) filters based on exotic phase-change materials for multispectral imaging in science instruments	43.008	96,590	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6941317	T13-6500-MIT/TASK ORDER 601054	Analysis of Operational Aspects of On Demand Air Mobility: Vertiports, Airspace and Concepts	43.RD	183,604	-
			Total for National Institute of Aerospace		**280,194**	**-**
Baylor College of Medicine						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6947454	EKBLAW-INN0007/PO#7000001634	Phase III Continuation Funding: Space Health Integrated Program (SHIP) at the MIT Space Exploration Initiative	43.003	117,342	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6936096	P700000498	Transitional Research Institute	43.003	174,914	118,575
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6945247	PO#7000001107/NNX16A069A	Dummy Parent: Just in Time Medications from Gastrointestinal Resident Microbial Systems	43.003	-602	-
			Total for Baylor College of Medicine		**291,654**	**118,575**
Center for Advancement of Science in Space						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6947027	GA-2021-8463	Next Generation Zero Robotics Educational Programs with Astrobee	43.007	43,132	-
			Total for Center for Advancement of Science in Space		**43,132**	**-**
Embry-Riddle Aeronautical University						

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NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6949617	GC61559-S6	Sporadic-E ElectroDynamics	43.001	12,790	-
			Total for Embry-Riddle Aeronautical University		**12,790**	**-**
The Smithsonian Astrophysical Observatory						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6949456	GO3-24002A	Probing Plasmas in the Colliding Wind Binary WR 25 (Chandra 24200045)	43.001	8,688	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6949467	GO3-24111B	Chandra and XMM-Newton Observations of the Most Extreme z > 1.25 ACTPol Survey Clusters (Chandra 24800278)	43.001	24,174	-
			Total for The Smithsonian Astrophysical Observatory		**32,862**	**-**
The Boeing Company						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6947184	L1021-0007-PO 2170074	AIRSPACE OPERATIONS AND SAFETY PROGRAM, SYSTEM-WIDE SAFETY (SWS) PROJECT	43.001	51,061	-
			Total for The Boeing Company		**51,061**	**-**
Michigan Technological University						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6937520	NNX17AJ32G	Institute for Ultra-Strong Composites By Computational Design (US-COMP)	43.012	6,527	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6937089	SUB 1607060Z6 / PO P0100197	Institute for Ultra-Strong Composites By Computational Design (US-COMP)	43.012	147,349	-
			Total for Michigan Technological University		**153,876**	**-**
University of California-Riverside						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6944333	S-001256	The nature of dark matter: galaxy clusters, dwarfs and their globular clusters	43.001	54,247	-
			Total for University of California-Riverside		**54,247**	**-**
Pennsylvania State University						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6945150	S001534-NASA	MIT Participation in a U.S. Contribution to the ATHENA Wide-field Imager	43.001	230,971	-
			Total for Pennsylvania State University		**230,971**	**-**
California Institute of Technology						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6945482	S504499	Probing the accretion physics of black holes through spectral-timing data analysis	43.001	34,861	-
			Total for California Institute of Technology		**34,861**	**-**

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Photon Spot, Inc.						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6945777	STTR UNDER 80NSSC21C0126	Integrated Photonics for Quantum Information Processing	43.RD	62,183	-
			Total for Photon Spot, Inc.		**62,183**	**-**
University of Florida						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6948015	SUB00003179	Direct Modeling of Interstellar Dust in a Cosmological Framework	43.001	39,162	-
			Total for University of Florida		**39,162**	**-**
Princeton University						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6946754	SUB0000318	MIT Participation in NASA's Interstellar Mapping and Acceleration Probe (IMAP) project (Bridge/Phase B)	43.RD	54,180	-
			Total for Princeton University		**54,180**	**-**
Massachusetts General Hospital						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6946004	SUBAWARD 238399	Personalized Performance Optimization Platform (P-POP)	43.003	121,596	-
			Total for Massachusetts General Hospital		**121,596**	**-**
Navajo Technical University						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6947227	SUBAWARD NTU-42535-01	Broadening Participation in Engineering, Robotics and Computer Science using Zero Robotics on Astrobee	43.008	37,734	-
			Total for Navajo Technical University		**37,734**	**-**
Univ. Corporation For Atmos. Research						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6941885	SUBAWD001618	Analysis of Halogen Heterogeneous Chemistry in the Stratosphere and Near Tropopause Regions Using Satellite Observations and Model Information	43.001	16,379	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6947145	SUBAWD003027 / PO P2019470	Solar Driven Upper Atmosphere Climatology Under the Influence of the Secular Change of Earth's Magnetic Field and Anthropogenic Forcing	43.001	68,429	-
			Total for Univ. Corporation For Atmos. Research		**84,808**	**-**
Arizona State University						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6937562	SUBCONTRACT NO. 17-257	Psyche: Journey to a Metal World (ASU)	43.RD	162,167	-
			Total for Arizona State University		**162,167**	**-**

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University of Michigan						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6941524	SUBK00011438/3005617618	Europa Clipper Facility Magnetometer Phases C&D	43.001	99,433	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6943100	SUBK00012276	Responsive multimodal human-automation communication for augmenting human situation awareness in nominal and off-nominal scenarios	43.001	62,733	-
			Total for University of Michigan		**162,166**	**-**
University of Texas - Austin						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6945944	UTAUS-SUB00000715	Autonomous Aerial Cargo Operations at Scale	43.001	253,977	-
			Total for University of Texas - Austin		**253,977**	**-**
Washington University in St. Louis						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6943244	WU-20-335	Development of the High Performance Version of GEOS-Chem (GCHP) to Enable Broad Community Access to High-Resolution Atmospheric Composition Modeling and Chemical Data Assimilation	43.001	51,956	-
			Total for Washington University in St. Louis		**51,956**	**-**
			TOTAL for National Aeronautics and Space Administration		**11,850,126**	**495,285**

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US AGENCY FOR INTERNATIONAL DEVELOPMENT						
Harvard University						
US AGENCY FOR INTERNATIONAL DEVELOPMENT	6942294	100866-5112734	Raskin Welfare Reform: Transition to Electronic Distributions	98.001	37,871	-
			Total for Harvard University		**37,871**	**-**
Harvard Kennedy School of Government						
US AGENCY FOR INTERNATIONAL DEVELOPMENT	6946945	100890-5119584	Kartu Prakerja Impact Evaluation	98.001	23,641	-
			Total for Harvard Kennedy School of Government		**23,641**	**-**
Middle East Desalination Research Center						
US AGENCY FOR INTERNATIONAL DEVELOPMENT	6948614	PROJ# 21-HC-002	Low-Cost, Family-Sized, Point-Of-Use Desalination System for Treatment of Brackish Water at High Recovery	98.001	90,315	-
			Total for Middle East Desalination Research Center		**90,315**	**-**
			TOTAL for US Agency for International Development		**151,827**	**-**

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FY 2023 Expenditures by Prime Sponsor and Sponsor

Prime Sponsor Name	Project WBS id	Passthrough Number	WBS Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NATIONAL SCIENCE FOUNDATION						
University of Wisconsin						
NATIONAL SCIENCE FOUNDATION	6948741	0000002374	ECO-CBET: Modular Electrochemical Processes for Simultaneous Nitrogen Recovery and Carbon Dioxide Mitigation	47.041	17,015	-
			Total for University of Wisconsin		**17,015**	**-**
University of California - Berkeley						
NATIONAL SCIENCE FOUNDATION	6945469	00010001/ PO BB01599241	HERA: Unveiling the Cosmic Dawn	47.049	139,601	-
NATIONAL SCIENCE FOUNDATION	6944407	00010434	QLCI - CL: Present and Future Quantum Computation	47.049	229,558	-
NATIONAL SCIENCE FOUNDATION	6944369	00010462	Collaboration on the Theoretical Foundations of Deep Learning.	47.049	95,054	-
NATIONAL SCIENCE FOUNDATION	6946148	00010799	EFRI E3P: Program plastic lifecycle by rationally design enzyme-containing plastics	47.041	10,758	-
NATIONAL SCIENCE FOUNDATION	6944675	10462	Collaboration on the Theoretical Foundations of Deep Learning.	47.079	78,981	-
NATIONAL SCIENCE FOUNDATION	6949780	PO #BB01718028	FuSe-TG: Electronic-Photonic Systems-on-Chip for Computation, Communication and Sensing	47.041	4,575	-
			Total for University of California - Berkeley		**558,527**	**-**
University of Illinois-Urbana Champaign						
NATIONAL SCIENCE FOUNDATION	6947002	087442-18809	AM Res-Q: Enabling community-wide, data-driven process parameter development for selective laser melting.	47.041	51,666	-
NATIONAL SCIENCE FOUNDATION	6942057	092992-17667	Collaborative Research: A Search for the Electric Dipole Moment of the Neutron	47.049	179,371	-
			Total for University of Illinois-Urbana Champaign		**231,037**	**-**
Harvard Kennedy School of Government						
NATIONAL SCIENCE FOUNDATION	6945481	100886-5117755	Optimal Public Transportation Networks: Theory and Evidence from Jakarta's Public Bus System	47.075	40	-
			Total for Harvard Kennedy School of Government		**40**	**-**
University of Maryland - College Park						
NATIONAL SCIENCE FOUNDATION	6946827	104990-Z3811201	NSF Convergence Accelerator - Track C: Quantum Networks to Connect Quantum Technology (QuanNeCQT)	47.083	348,444	-

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Prime Sponsor Name	Project WBS id	Passthrough Number	WBS Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NATIONAL SCIENCE FOUNDATION	6944724	93943-Z3687203	NSF Convergence Accelerator - Track C Interconnecting Quantum Computers for the Next-generation Internet	47.083	1,919	-
			Total for University of Maryland - College Park		**350,363**	**-**
Carnegie-Mellon University						
NATIONAL SCIENCE FOUNDATION	6948917	1123649-463156	A National Network for Critical Technology Assessment: A First-Year Pilot	47.084	69,867	-
NATIONAL SCIENCE FOUNDATION	6949352	1123649-465946	A National Network for Critical Technology Assessment: A First-Year Pilot	47.084	54,849	-
			Total for Carnegie-Mellon University		**124,716**	**-**
Harvard University						
NATIONAL SCIENCE FOUNDATION	2389833	123826-5056263	Center for Integrated Quantum Materials	47.049	1,572,853	-
NATIONAL SCIENCE FOUNDATION	6942548	124189-5112398	DMREF: Hydrogel-actuated cellular soft robotic materials with programmable mechanical properties	47.049	163,491	-
NATIONAL SCIENCE FOUNDATION	6947125	124381-5119999	QuIC-TAQS:Integrated Lithium Niobate Quantum Photonics Platform	47.049	75,560	-
			Total for Harvard University		**1,811,904**	**-**
University of Texas at Dallas						
NATIONAL SCIENCE FOUNDATION	6946419	2008652 / PO S316006	Innovating Developmental Science with an Online, Scalable Meta-Science Platform for Investigating Cognitive Development During Early Childhood	47.075	291,924	-
			Total for University of Texas at Dallas		**291,924**	**-**
University of California - Irvine						
NATIONAL SCIENCE FOUNDATION	6938664	2018-3564	NSFPLR-NERC: PROcesses, drivers, Predictions: Modeling the response of Thwaites Glacier over the next century using ice/ocean coupled models (PROPHET)	47.050	564	-
			Total for University of California - Irvine		**564**	**-**
University of Oklahoma (Norman, OK)						
NATIONAL SCIENCE FOUNDATION	6940566	2019-46	TIME (Thwaites Interdisciplinary Margin Evolution) - The Role of Shear Margin Dynamics in the Future Evolution of Thwaites Drainage Basin	47.050	27,553	-
			Total for University of Oklahoma (Norman, OK)		**27,553**	**-**
Computing Research Association						

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FY 2023 Expenditures by Prime Sponsor and Sponsor

Prime Sponsor Name	Project WBS id	Passthrough Number	WBS Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NATIONAL SCIENCE FOUNDATION	2749505	2021CIF-MIT-08	COVID-19: Statistics and dynamics of extreme events in fluid turbulence: high-performance exact computations and data-driven modelling	47.070	127,961	-
NATIONAL SCIENCE FOUNDATION	2749554	2021CIF-MIT-41	COVID-19: Computing Innovation Fellows 2021 Project	47.070	176,872	-
NATIONAL SCIENCE FOUNDATION	2749233	CIF2020-MIT-17	Computing Innovation Fellows 2020 Project	47.070	71,368	-
NATIONAL SCIENCE FOUNDATION	2749161	CIF2020-MIT-48	Computing Innovation Fellows 2020 Project	47.070	24,125	-
NATIONAL SCIENCE FOUNDATION	2749880	CIF2020YEAR3-MIT-17	Computing Innovation Fellows 2020 Project	47.070	72,978	-
NATIONAL SCIENCE FOUNDATION	2749797	CIF2020YEAR3-MIT-48	Computing Innovation Fellows 2020 Project	47.070	116,972	-
			Total for Computing Research Association		**590,276**	**-**
University of Notre Dame						
NATIONAL SCIENCE FOUNDATION	6946429	204303MIT	SII-Center: SpectrumX - An NSF Spectrum Innovation Center	47.049	192,537	-
NATIONAL SCIENCE FOUNDATION	6948625	204512MIT	NSF Center for Computer Assisted Synthesis	47.049	54,235	-
			Total for University of Notre Dame		**246,772**	**-**
West Virginia University						
NATIONAL SCIENCE FOUNDATION	6945310	20-494-MIT / PO MM000350453	MRI: Development of a CHIME Outrigger Telescope	47.049	246,104	-
			Total for West Virginia University		**246,104**	**-**
East Bay Educational Collaborative of Rhode Island						
NATIONAL SCIENCE FOUNDATION	6948647	2148451-2	ITEST: Engineering a Hive Learning Ecosystem for Rapidly Evolving Technologies: Investigating Impact on High School Student Knowledge, Skill-Building and Interest in STEM Careers	47.076	25,132	-
			Total for East Bay Educational Collaborative of Rhode Island		**25,132**	**-**
University of Nebraska						
NATIONAL SCIENCE FOUNDATION	6947597	25-0521-0244-007	U.S. CMS Operations at the Large Hadron Collider	47.RD	576,164	-
			Total for University of Nebraska		**576,164**	**-**
Temple University						
NATIONAL SCIENCE FOUNDATION	6946451	268495-MIT / P0682027	SCC-PG: Planning for Resilience and Equity through Accessible Community Technology: Developing a Community-Led Planning Tool for Climate Readiness	47.070	10,954	-
			Total for Temple University		**10,954**	**-**
Gulf of Maine Research Institute						

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Federal Research Support - Passthrough - On Campus
FY 2023 Expenditures by Prime Sponsor and Sponsor

Prime Sponsor Name	Project WBS id	Passthrough Number	WBS Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NATIONAL SCIENCE FOUNDATION	6947194	30-CS4ALL-MIT	Broadening Access to CT-STEM: Leveraging lived experiences and hybrid language practices of K-5 Mainers for computational sensemaking	47.076	8,913	-
			Total for Gulf of Maine Research Institute		**8,913**	**-**
Duke University						
NATIONAL SCIENCE FOUNDATION	6939557	333-2439	Center for the Chemistry of Molecularly Optimized Networks	47.049	3,166	-
NATIONAL SCIENCE FOUNDATION	6939582	333-2457	STAQ: Software-Tailored Architecture for Quantum co-design	47.049	216,250	-
NATIONAL SCIENCE FOUNDATION	6946083	333-2765	NSF Center for Molecularly Optimized Networks	47.049	866,576	-
NATIONAL SCIENCE FOUNDATION	6946041	333-2824	AI Institute: Athena: AI-Driven Next-generation Networks at the Edge	47.070	225,931	-
			Total for Duke University		**1,311,923**	**-**
University of Rochester						
NATIONAL SCIENCE FOUNDATION	6944701	417873-G / UR FAO GR511147	Center for Matter at Atomic Pressures	47.049	89,392	-
			Total for University of Rochester		**89,392**	**-**
Boston University						
NATIONAL SCIENCE FOUNDATION	6938043	4500002547	CIF21 DIBBs: EI: North Eastern Storage Exchange	47.070	-3,425	-
			Total for Boston University		**-3,425**	**-**
Virginia Polytechnic Institute & State University						
NATIONAL SCIENCE FOUNDATION	2389891	480718-19825	Development of a software package for high-throughput screening of excited state electronic properties in chromophore aggregates using quantum and classical mechanical tools	47.049	50,985	-
NATIONAL SCIENCE FOUNDATION	6948622	480949-19825	RAISE:IHBEM Mathematical and Algorithmic Formulation of Change in Human Behavior in Epidemic Models	47.049	4,969	-
			Total for Virginia Polytechnic Institute & State University		**55,954**	**-**
Ohio State University						
NATIONAL SCIENCE FOUNDATION	6945569	60079175	SenSE: Multimodal Biosensors and Data driven Methods for Explainable Analyticsfor a Proactive approach to Heart Failure	47.041	22,512	-
NATIONAL SCIENCE FOUNDATION	6946958	GR125504/SPC-1000006637	QII – TAQS: Solid state Integration of molecular qubits	47.049	205,311	-

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FY 2023 Expenditures by Prime Sponsor and Sponsor

Prime Sponsor Name	Project WBS id	Passthrough Number	WBS Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
			Total for Ohio State University		**227,823**	**-**
University of California-San Diego						
NATIONAL SCIENCE FOUNDATION	6947476	704703	FMRG: Dry Manufacturing of Solid-State Batteries for Large Energy Storage Systems	47.041	18,560	-
NATIONAL SCIENCE FOUNDATION	6946307	KR 704702	AI Institute: TILOS: The Institute for Learning-enabled Optimization at Scale	47.070	382,573	-
NATIONAL SCIENCE FOUNDATION	6946774	KR 704800	Mid-scale RI-1 (M1:DP): Designing a global measurement infrastructure to improve Internet security	47.070	208,086	-
NATIONAL SCIENCE FOUNDATION	6939284	SUBAWARD AGREEMENT #106786383 ; PO S9002094	Platform for Applied Network Data Analysis (PANDA)	47.070	-9,012	-
			Total for University of California-San Diego		**600,207**	**-**
American Society/Engineering Education						
NATIONAL SCIENCE FOUNDATION	2749533	769-2053	Engineering Fellows Postdoctoral Fellowship Program	47.041	130,719	-
			Total for American Society/Engineering Education		**130,719**	**-**
University of Maryland						
NATIONAL SCIENCE FOUNDATION	6941887	81350-Z3438201	QII-TAQS:Quantum machine learning with photonics	47.049	441,548	-
			Total for University of Maryland		**441,548**	**-**
University of Southern California						
NATIONAL SCIENCE FOUNDATION	6946539	91255352 / PO10614338	SCEC5 Research Collaboration with the Massachusetts Institute of Technology: Development of merged GPS time series for the Community Geodetic Model	47.050	105,098	-
			Total for University of Southern California		**105,098**	**-**
Kansas State University						
NATIONAL SCIENCE FOUNDATION	6937873	A00-0361-S002	PIRE: High Temperature Ceramic Fibers: Polymer-Based Manufacturing, Nanostructure, and Performance	47.079	122,029	-
			Total for Kansas State University		**122,029**	**-**
Woods Hole Oceanographic Institution						
NATIONAL SCIENCE FOUNDATION	6946535	A101550	Center for Chemical Currencies of a Microbial Planet (C-COMP)	47.050	92,769	-
			Total for Woods Hole Oceanographic Institution		**92,769**	**-**
University of California/Davis						

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Prime Sponsor Name	Project WBS id	Passthrough Number	WBS Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NATIONAL SCIENCE FOUNDATION	6941718	A19-3499-S001	Leveraging in-context online discussion of course materials to enhance student engagement and learning	47.076	93,008	-
			Total for University of California/Davis		**93,008**	**-**
University of Tennessee						
NATIONAL SCIENCE FOUNDATION	6948836	A23-0007-S004	PIPP Phase I: Predicting Emergence in Multidisciplinary Pandemic Tipping-points (PREEMPT)	47.070	18,285	-
			Total for University of Tennessee		**18,285**	**-**
Emory University						
NATIONAL SCIENCE FOUNDATION	6946412	A375897	CCI Center in Selective C-H Functionalization	47.049	31,089	-
			Total for Emory University		**31,089**	**-**
National Radio Astronomy Observatory						
NATIONAL SCIENCE FOUNDATION	6944856	AGMT DTD 2/23/2021	Exploring RML Reconstruction for Stellar Imaging with the ngVLA II: Assessment of Calibration Effects	47.049	-103	-
NATIONAL SCIENCE FOUNDATION	6937959	PO 359999	Enabling New Science with the ALMA Phasing System "Phase 2"	47.049	215,408	-
NATIONAL SCIENCE FOUNDATION	6944190	PO 370764	Beyond Black Hole Images: Extending New Imaging Techniques from EHT to ALMA	47.049	25,491	-
NATIONAL SCIENCE FOUNDATION	6949508	PO 379499	TALON Frequency Slice Architecture Correlator/Beamformer for ALMA	47.049	3,664	-
NATIONAL SCIENCE FOUNDATION	6946902	PO#374975	Enabling New VLBI Science with the ALMA Phasing System - Phase 3	47.049	155,758	-
			Total for National Radio Astronomy Observatory		**400,218**	**-**
Cache DNA LLC						
NATIONAL SCIENCE FOUNDATION	6948938	AGMT EFF 2/15/22	Novel room-temperature archival storage of nucleic acids in synthetic polymer packets	47.RD	54,732	-
			Total for Cache DNA LLC		**54,732**	**-**
American Political Science Association						
NATIONAL SCIENCE FOUNDATION	2749574	AGMT EFF 9/15/21	Gender Processes of Civil War: Understanding Women's Inclusion in Rebel Organizations	47.075	6,423	-
NATIONAL SCIENCE FOUNDATION	2749575	AGMT. DTD. 09/15/2021	Dilemmas of Accommodation	47.075	3,927	-
NATIONAL SCIENCE FOUNDATION	2749573	AGMT. DTD. 09/15/2021	Enlisting the Market: Trade Policy as Industrial Policy in Post-WTO China	47.075	6,679	-
NATIONAL SCIENCE FOUNDATION	2749836	AWD. LTR. DTD. 9/30/2022	Urbanization, Privatization, and the Social Contract	47.075	2,928	-

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Prime Sponsor Name	Project WBS id	Passthrough Number	WBS Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
			Total for American Political Science Association		**19,957**	**-**
Transaera, Inc.						
NATIONAL SCIENCE FOUNDATION	6944840	AGREEMENT EFFECTIVE 1/1/2021	Using Metal-Organic Framework Materials to Increase Sustainability of Indoor Farming	47.041	-3,153	-
			Total for Transaera, Inc.		**-3,153**	**-**
NEROC						
NATIONAL SCIENCE FOUNDATION	6937604	AGS-1726377	MRI Collaborative: Development of Monitors for Alaskan and Canadian Auroral Weather in Space (MACAWS)	47.050	13,895	11,947
NATIONAL SCIENCE FOUNDATION	6945054	AST-2034306	The Event Horizon Telescope: Resolving Black Holes in Time and Space	47.049	2,480,293	1,683,080
			Total for NEROC		**2,494,188**	**1,695,027**
Arizona State University						
NATIONAL SCIENCE FOUNDATION	6942459	ASUB00000433	Mid-Scale RI-1 (M1:DP): Compact X-ray Free-Electron Laser Project (CXFEL)	47.074	6,932	-
NATIONAL SCIENCE FOUNDATION	6949913	ASUB00001318	Mid-Scale RI-2 Consortium: Compact X-ray Free-Electron Laser Project (CXFEL)	47.074	3,862	-
			Total for Arizona State University		**10,794**	**-**
Georgia Institute of Technology						
NATIONAL SCIENCE FOUNDATION	6944226	AWD-001496-G1	A Hybrid Programmable Biological-Nanoelectric System	47.041	208	-
NATIONAL SCIENCE FOUNDATION	6949093	AWD-003829-G1/PO-5290605	PIPP Phase I: BEHIVE - BEHavioral Interaction and Viral Evolution for Pandemic Prevention and Prediction	47.070	2,563	-
			Total for Georgia Institute of Technology		**2,771**	**-**
University of Chicago						
NATIONAL SCIENCE FOUNDATION	6946172	AWD101244 (SUB00000549)	Materials Research and Science Engineering Center - Renewal 02	47.049	28,118	-
NATIONAL SCIENCE FOUNDATION	6948645	AWD103173 (SUB00000693)	Collaborative Research: Framework: Garden: A FAIR Framework for Publishing and Applying AI Models for Translational Research in Science, Engineering, Education, and Industry	47.070	12,369	-
			Total for University of Chicago		**40,487**	**-**
AMERICAN MUSEUM OF NATURAL HISTORY						
NATIONAL SCIENCE FOUNDATION	6945784	B52-2021-1, PO# 118733	Developing and Testing Innovations [DTI]: SRMPmachine	47.076	117,084	-

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Prime Sponsor Name	Project WBS id	Passthrough Number	WBS Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
			Total for AMERICAN MUSEUM OF NATURAL HISTORY		**117,084**	**-**
Florida A&M University						
NATIONAL SCIENCE FOUNDATION	6937333	C-4979	CREST Center for Complex Materials Design for Multidimensional Additive Processing (CoMan)	47.076	21,515	-
			Total for Florida A&M University		**21,515**	**-**
Texas A & M						
NATIONAL SCIENCE FOUNDATION	6947179	M2201483	CCI Phase I: NSF Center for the Mechanical Control of Chemistry (CMCC)	47.049	94,072	-
			Total for Texas A & M		**94,072**	**-**
University of Colorado Boulder						
NATIONAL SCIENCE FOUNDATION	6945196	PO 1001483847	QLCI-CI: Enhanced Sensing and Distribution Using Quantum States	47.RD	284,035	-
			Total for University of Colorado Boulder		**284,035**	**-**
Rutgers University						
NATIONAL SCIENCE FOUNDATION	6946480	PO 25066987; 1968	SCC-IRG Track 1: Socially Informed Services Conflict Governance through Specification, Detection, Resolution and Prevention	47.070	101,787	-
			Total for Rutgers University		**101,787**	**-**
Rice University						
NATIONAL SCIENCE FOUNDATION	6944167	R3K023	EFRI DCheM: Electrifying CO2 From Point Sources into Pure Liquid Fuels	47.041	84,773	-
			Total for Rice University		**84,773**	**-**
UNAVCO						
NATIONAL SCIENCE FOUNDATION	6939638	S18-EAR1724794-S2	National Geophysical Observatory for Geoscience Analysis Center Coordinator and GNSS Data Processing Support for the UNAVCO community	47.050	131,132	-
			Total for UNAVCO		**131,132**	**-**
Oregon State University						
NATIONAL SCIENCE FOUNDATION	2748887	S2114A-C	The Circuit: A Platform for Increasing Access and Participation in Public Engagement in Science	47.076	82,508	-
			Total for Oregon State University		**82,508**	**-**

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FY 2023 Expenditures by Prime Sponsor and Sponsor

Prime Sponsor Name	Project WBS id	Passthrough Number	WBS Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
University of Massachusetts-Lowell						
NATIONAL SCIENCE FOUNDATION	6944280	S52100000048202	FMNet: A Network for Rapid Execution for Scaling Production of Needed Designs (RESPOND)	47.075	18,031	-
			Total for University of Massachusetts-Lowell		**18,031**	**-**
Santa Fe Institute						
NATIONAL SCIENCE FOUNDATION	6944411	SFI20200915	Novel wisdom-of-crowds approaches to improving predictions of election polls	47.075	23,311	-
			Total for Santa Fe Institute		**23,311**	**-**
University of Washington						
NATIONAL SCIENCE FOUNDATION	6947058	SUB# UWSC13243 / BPO61724	HDR Institute: Accelerated AI Algorithms for Data-Driven Discovery	47.070	208,531	-
NATIONAL SCIENCE FOUNDATION	6946949	SUB# UWSC13243 / PO# 61724	HDR Institute: Accelerated AI Algorithms for Data-Driven Discovery	47.070	293,350	-
NATIONAL SCIENCE FOUNDATION	2749676	UWSC13683	2022 National Nuclear Physics Summer School	47.049	91,698	-
			Total for University of Washington		**593,579**	**-**
Princeton University						
NATIONAL SCIENCE FOUNDATION	6939873	SUB0000276	Institute for Research and Innovation in Software for High Energy Physics (IRIS-HEP)	47.070	98,542	-
			Total for Princeton University		**98,542**	**-**
Educational Testing Service						
NATIONAL SCIENCE FOUNDATION	6945050	SUB-AWARD #0901046/723	The Online Practice Suite: Practice Spaces, Simulations and Virtual Reality Environments for Preservice Teachers to Learn to Facilitate Argumentation Discussions in Mathematics and Science	47.076	177,922	-
			Total for Educational Testing Service		**177,922**	**-**
Purdue University						
NATIONAL SCIENCE FOUNDATION	6925962	SUBAWARD #10000686-015	Emerging Frontiers of Science of Information	47.070	39,145	-
			Total for Purdue University		**39,145**	**-**
University of Arizona						
NATIONAL SCIENCE FOUNDATION	6946210	SUBAWARD 586648	NSF Engineering Research Center for Quantum Networks (CQN)	47.041	500,976	-
			Total for University of Arizona		**500,976**	**-**

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Prime Sponsor Name	Project WBS id	Passthrough Number	WBS Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
California Institute of Technology						
NATIONAL SCIENCE FOUNDATION	6939606	SUBAWARD NO. S458042	LIGO Operations FY19 through FY23	47.049	4,695,419	-
			Total for California Institute of Technology		**4,695,419**	**-**
University of Michigan						
NATIONAL SCIENCE FOUNDATION	6945681	SUBK00012431	Engineering Development for Establishing IsoDAR	47.049	103,212	-
NATIONAL SCIENCE FOUNDATION	6946531	SUBK00015726 / PO# 3006717538	NSF Convergence Accelerator Track F: Misinformation Judgments with Public Legitimacy	47.083	7,942	-
			Total for University of Michigan		**111,154**	**-**
The Smithsonian Astrophysical Observatory						
NATIONAL SCIENCE FOUNDATION	6942136	SV0-09003	Mid-scale RI-1 (M1:DP): Next Generation Event Horizon Telescope Design	47.049	796,741	-
			Total for The Smithsonian Astrophysical Observatory		**796,741**	**-**
University of Alaska-Fairbanks						
NATIONAL SCIENCE FOUNDATION	6944274	UA 21-0033	Collaborative Research: US GEOTRACES PMT: Pb and Cr isotopes	47.050	1,309	-
			Total for University of Alaska-Fairbanks		**1,309**	**-**
Wayne State University						
NATIONAL SCIENCE FOUNDATION	6943723	WSU20080; GRANT INDEX 301675	The X-SCAPE collaboration: The X-ion collision with a Statistically and Computationally Advanced Program Envelope collaboration	47.070	98,315	-
			Total for Wayne State University		**98,315**	**-**
			TOTAL for National Science Foundation		**19,525,721**	**1,695,027**
			TOTAL Federal Research Support - Passthrough - On Campus		**$123,805,396**	**$4,339,513**

Appendix A4
Economic Development Cluster
Massachusetts Institute of Technology
On Campus
FY 2023 Expenditures by Prime Sponsor and Sponsor

Prime Sponsor Name	Project WBS id	Passthrough Number	WBS Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
ECONOMIC DEVELOPMENT CLUSTER						
Berkshire Innovation Center						
DEPARTMENT OF COMMERCE	2749810	01- 79-15224	BIC Manufacturing Academy	11.307	61,087	-
			Total for Berkshire Innovation Center		**61,087**	**-**
University of Massachusetts-Lowell						
DEPARTMENT OF COMMERCE	6945859	S51700000049091	Massachusetts Manufacturing Emergency Response Team 2.0	11.307	364,971	-
			Total for University of Massachusetts-Lowell		**364,971**	**-**
			TOTAL for Department of Commerce		**426,058**	**-**
			TOTAL Economic Development Cluster - On Campus		**$426,058**	**-**

Appendix A5
TRIO Cluster
Massachusetts Institute of Technology
On Campus
FY 2023 Expenditures by Prime Sponsor and Sponsor

Prime Sponsor Name	Project WBS id	Passthrough Number	WBS Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
TRIO CLUSTER						
U.S. Department of Education						
MISCELLANEOUS FEDERAL GOVT	2748022	P047A170618	MIT/Wellesley Upward Bound Program	84.047A	155,268	-
			Total for U.S. Department of Education		**155,268**	**-**
			TOTAL for Miscellaneous Federal Govt		**155,268**	**-**
			TOTAL TRIO Cluster - On Campus		**$155,268**	**-**

Appendix B
Massachusetts Institute of Technology
Federal Non-Research Support - On Campus
FY 2023 Expenditures

Federal Agency	Government Contract Number	Master Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
DEPARTMENT OF DEFENSE					
Army					
12.431					
Army	W911NF2210113	Summer Geometry Initiative	12.431	20,000	-
		Total for AL # 12.431		*20,000*	-
		Total for Army		**20,000**	**-**
Navy					
12.300					
Navy	N00014-18-1-2890	Competency, Community, Career: A technician apprenticeship certificate for advanced manufacturing	12.300	132,699	122,042
Navy	N00014-19-1-2753	Virtual Manufacturing Lab (VM-Lab):A Multimedia Design House for Digital Learning in Manufacturing-USA Workforce Education	12.300	1,103,305	665,450
		Total for AL # 12.300		*1,236,004*	*787,492*
		Total for Navy		**1,236,004**	**787,492**
Other DOD					
12.900					
NSA	H98230-21-1-0052	Choose to Study Russian for Professional Needs	12.900	50,935	-
		Total for AL # 12.900		*50,935*	-
12.U13					
NSA	H98230-19-C-0292	MIT Center for Quantum Engineering (MIT-CQE)	12.U13	4,325	-
		Total for AL # 12.U13		*4,325*	-
12.U14					
NSA	H98230-19-C-0292	MIT Center for Quantum Engineering (MIT-CQE)	12.U14	57,174	-
		Total for AL # 12.U14		*57,174*	-
12.U15					
NSA	H98230-19-C-0292	MIT Center for Quantum Engineering (MIT-CQE)	12.U15	7,760	-
		Total for AL # 12.U15		*7,760*	-

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Federal Agency	Government Contract Number	Master Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
12.U16					
NSA	H98230-19-C-0292	MIT Center for Quantum Engineering (MIT-CQE)	12.U16	8,336	-
		Total for AL # 12.U16		*8,336*	-
12.U17					
NSA	H98230-19-C-0292	MIT Center for Quantum Engineering (MIT-CQE)	12.U17	2,334	-
		Total for AL # 12.U17		*2,334*	-
12.U18					
NSA	H98230-19-C-0292	MIT Center for Quantum Engineering (MIT-CQE)	12.U18	10,386	-
		Total for AL # 12.U18		*10,386*	-
12.U36					
NSA	H98230-19-C-0292	MIT Center for Quantum Engineering (MIT-CQE)	12.U36	6,002	-
		Total for AL # 12.U36		*6,002*	-
12.U44					
NSA	H98230-19-C-0292	MIT Center for Quantum Engineering (MIT-CQE)	12.U44	96,594	-
		Total for AL # 12.U44		*96,594*	-
12.U45					
NSA	H98230-19-C-0292	MIT Center for Quantum Engineering (MIT-CQE)	12.U45	100,557	-
		Total for AL # 12.U45		*100,557*	-
12.U46					
NSA	H98230-19-C-0292	MIT Center for Quantum Engineering (MIT-CQE)	12.U46	100,557	-
		Total for AL # 12.U46		*100,557*	-
12.U47					
NSA	H98230-19-C-0292	MIT Center for Quantum Engineering (MIT-CQE)	12.U47	94,578	-
		Total for AL # 12.U47		*94,578*	-

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FY 2023 Expenditures

Federal Agency	Government Contract Number	Master Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
12.U48					
NSA	H98230-19-C-0292	MIT Center for Quantum Engineering (MIT-CQE)	12.U48	49,353	-
		Total for AL # 12.U48		*49,353*	-
12.U62					
NSA	H98230-19-C-0292	MIT Center for Quantum Engineering (MIT-CQE)	12.U62	4,180	-
		Total for AL # 12.U62		*4,180*	-
12.U63					
NSA	H98230-21-1-0354	Machine Learning and Modern Algorithms	12.U63	184,474	-
		Total for AL # 12.U63		*184,474*	-
12.U65					
NSA	H98230-19-C-0292	MIT Center for Quantum Engineering (MIT-CQE)	12.U65	19,016	-
		Total for AL # 12.U65		*19,016*	-
12.U67					
NSA	H98230-22-1-0139	Trusted Analytics 5G course	12.U67	399,484	-
		Total for AL # 12.U67		*399,484*	-
12.U70					
NSA	H98230-19-C-0292	MIT Center for Quantum Engineering (MIT-CQE)	12.U70	14,165	-
		Total for AL # 12.U70		*14,165*	-
		Total for Other DOD		**1,210,210**	**-**
		TOTAL for Department of Defense		**2,466,214**	**787,492**

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Federal Non-Research Support - On Campus
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Federal Agency	Government Contract Number	Master Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
DEPARTMENT OF COMMERCE					
11.417					
DOC	NA22OAR4170046	FY2022 Knauss Fellowship_Sheron Luk	11.417	1,695	-
DOC	NA22OAR4170552	Fiscal Year 2022 NMFS-Sea Grant Fellowship in Population and Ecosystem Dynamics and Marine Resource Economics_Karl Aspelund	11.417	53,802	-
DOC	NA23OAR4170012	FY2023 Knauss Fellowship - Claudia Mazur	11.417	38,250	-
DOC	NA23OAR4170070	2023 Knauss Fellowship - Sophia Troeh	11.417	37,827	-
DOC	NA23OAR4170072	2023 Knauss Fellowship - Lilian Elekwachi	11.417	33,250	-
		Total for AL # 11.417		*164,824*	-
		Total for Department of Commerce		**164,824**	**-**
		TOTAL for Department of Commerce		**164,824**	**-**

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Federal Non-Research Support - On Campus
FY 2023 Expenditures

Federal Agency	Government Contract Number	Master Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
DEPARTMENT OF ENERGY					
81.049					
DOE	DE-SC0014478	MIT Outreach for Plasma Science and Fusion	81.049	136,438	-
DOE	DE-SC0018354	Convergence QL: NSF/DOE Quantum Science Summer School	81.049	151,847	152,813
DOE	DE-SC0021638	Computational Physics School for Fusion Research (CPS-FR) 2021-2023	81.049	47,665	-
		Total for AL # 81.049		*335,950*	*152,813*
81.121					
DOE	DE-NE0000102	MIT Nuclear Energy University Fellowship Program	81.121	57,802	-
		Total for AL # 81.121		*57,802*	-
		Total for Department of Energy		**393,752**	**152,813**
		TOTAL for Department of Energy		**393,752**	**152,813**

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Federal Agency	Government Contract Number	Master Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
DEPARTMENT OF HEALTH & HUMAN SERVICES					
Other HHS					
93.647					
HHS	90PD0310-01-00	Mindfulness and Behavioral Economics: Evaluating the Effects of Meditation on Wellbeing and Decision-Making	93.647	-16	-
HHS	90PD0314-01-00	Perceived Discrimination and its Effects on Morale, Effort, Cooperation, and Labor Market Participation	93.647	24,061	-
		Total for AL # 93.647		*24,045*	-
		Total for Other HHS		**24,045**	**-**
		TOTAL for Department of Health & Human Services		**24,045**	**-**

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Massachusetts Institute of Technology
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FY 2023 Expenditures

Federal Agency	Government Contract Number	Master Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
DEPARTMENT OF TRANSPORTATION					
20.215					
DOT	693JJ32345006	Dwight David Eisenhower Transportation Fellowship (DDETFP) - Parks	20.215	28,524	-
		Total for AL # 20.215		*28,524*	-
		Total for Department of Transportation		**28,524**	**-**
		TOTAL for Department of Transportation		**28,524**	**-**

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Massachusetts Institute of Technology
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FY 2023 Expenditures

Federal Agency	Government Contract Number	Master Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
MISCELLANEOUS FEDERAL GOVT					
Department of Education					
84.022A					
ED	P022A210044	Fulbright-Hays Doctoral Dissertation Research Abroad	84.022A	81,922	-
		Total for AL # 84.022A		*81,922*	-
84.425E					
ED	P425E205907	COVID-19: Higher Education Emergency Relief Funds II - Student Aid under the Coronavirus Response and Relief Supplemental Appropriation Act, 2021	84.425E	-36,538	-
		Total for AL # 84.425E		*-36,538*	-
84.425F					
ED	P425F210032	COVID-19: Higher Education Emergency Relief Funds III - Institutional Portion under the American Rescue Plan	84.425F	6,432,467	-
		Total for AL # 84.425F		*6,432,467*	-
		Total for Department of Education		**6,477,851**	**-**
Other Agencies					
19.040					
Misc.	SBA30022GR0026	MIT- MISTI Global Teaching Lab in Bahrain	19.040	15,308	-
		Total for AL # 19.040		*15,308*	-
45.024					
Misc.	1884387-34-21	To support Immerse, an online publication that fosters dialogue and provides information about emerging non-fiction media	45.024	652	-
Misc.	1884390-34-21	To support a US-based contingent of Indigenous media artists at the Int'l Indigenous Digital Media Delegation gatherings at MIT under the theme Indigenous Epistemologies, AI and Digital Worlds	45.024	21,520	-
Misc.	1889090-44-22	To support the ongoing exhibition series List Projects	45.024	-7,418	-
Misc.	1892853-34-22	To support a US-based contingent of Indigenous media artists at the Int'l Indigenous Digital Media Delegation gatherings at MIT under the these Indigenous Epistemologies, A.I. and Digital Worl	45.024	19,579	-
Misc.	1892854-34-22	To support Immerse, an online publication that fosters dialogue and provides information about emerging non-fiction media.	45.024	14,989	-

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Federal Agency	Government Contract Number	Master Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
		Total for AL # 45.024		*49,322*	-
45.169					
Misc.	DR-278094-21	Haddad/Effective Advocacy 13475: Open Access edition	45.169	4,950	-
Misc.	HAA-284908-22	Latent Archive: Immersive Storytelling Platform for Examining Spatial History	45.169	27,845	-
		Total for AL # 45.169		*32,795*	-
45.301					
Misc.	MA-245643-OMS-20	IMLS Archive Digitization Project	45.301	-31,721	-
		Total for AL # 45.301		*-31,721*	-
45.313					
Misc.	RE-246380-OLS-20	Building Library Professionals' Creative Learning Competency for Facilitating STEM Programming	45.313	37,694	-
		Total for AL # 45.313		*37,694*	-
54.U02					
Misc.	2022-22072700001	USGA-MIT Strategic Partnership Proposal	54.U02	20,914	-
		Total for AL # 54.U02		*20,914*	-
54.U03					
Misc.	2022-22072700001	USGA-MIT Strategic Partnership Proposal	54.U03	64,466	-
		Total for AL # 54.U03		*64,466*	-
54.U04					
Misc.	2022-22072700001	USGA-MIT Strategic Partnership Proposal	54.U04	2,568	-
		Total for AL # 54.U04		*2,568*	-
54.U05					
Misc.	2022-22072700001	USGA-MIT Strategic Partnership Proposal	54.U05	887	-
		Total for AL # 54.U05		*887*	-
54.U06					
Misc.	2022-22072700001	USGA-MIT Strategic Partnership Proposal	54.U06	736	-
		Total for AL # 54.U06		*736*	-

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Federal Agency	Government Contract Number	Master Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
77.008					
Misc.	31310018M0021	NRC Fellowship Program	77.008	132,585	-
Misc.	31310018M0038	MIT Nuclear Education Faculty Development Program	77.008	11,542	-
		Total for AL # 77.008		*144,127*	-
		Total for Other Agencies		**337,096**	**-**
		TOTAL for Miscellaneous Federal Govt		**6,814,947**	**-**

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Massachusetts Institute of Technology
Federal Non-Research Support - On Campus
FY 2023 Expenditures

Federal Agency	Government Contract Number	Master Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION					
43.001					
NASA	80NSSC20K1366	Determining the Structure of a Primitive Achondrite Parent Body Using Paleomagnetism	43.001	57,743	-
NASA	80NSSC20K1510	Multiscale Dynamics of Magnetic Flux Tubes in the Heliosphere and Beyond	43.001	1,894	-
NASA	80NSSC21K1619	Inferring sub-ice-shelf melt rates using ICESat-2 altimetry and simple physical models	43.001	5,254	-
NASA	80NSSC21K1842	Evolution of the AGN Feedback Cycle in Galaxy Clusters	43.001	22,859	-
NASA	80NSSC22K1596	Towards precision measurements of accreting black holes: revolutionizing X-ray reverberation mapping	43.001	52,872	-
		Total for AL # 43.001		*140,622*	-
43.008					
NASA	80NSSC20M0048	Massachusetts Space Grant Proposed Opportunities in NASA STEM 2020-2024, Year 1 Augmentation	43.008	1,122,217	44,459
		Total for AL # 43.008		*1,122,217*	*44,459*
43.012					
NASA	80NSSC17K0083	A Ground-Based Analog for CNS Exposure to Space Radiation: A System for Integrating Microbeam Technology and Neuronal Culture	43.012	912	-
NASA	80NSSC17K0090	Modeling Oxygen Production on Mars and Extension to a Human-Scale Mission	43.012	214	-
NASA	80NSSC18K1141	Optimal Trajectory Design for Innovative Low-Thrust Spacecraft Missions	43.012	14,531	-
NASA	80NSSC18K1182	Optical Technology for Exoplanet Characterization	43.012	10,793	-
NASA	80NSSC19K1154	Calcium-based Battery Development for Space Technology Applications	43.012	66,926	-
NASA	80NSSC19K1173	Controlling and imaging electronic fluids for radiation-resistant high-speed logic in graphene (Student: Sarah Muschinske)	43.012	68,971	-
NASA	80NSSC20K1178	Development and Optimization of a Bimodal Ion-Chemical Thruster System Using Novel Ionic Liquid Monopropellants	43.012	66,441	-
NASA	80NSSC20K1180	Bayesian Uncertainty Propagation Using Multi-Fidelity Subsystem Models in Design of Precision-Pointed Space Telescopes	43.012	41,710	-

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FY 2023 Expenditures

Federal Agency	Government Contract Number	Master Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NASA	80NSSC20K1201	A diamond nanophotonics platform for quantum communication with multiplexed qubit repeaters	43.012	62,673	-
NASA	80NSSC21K1254	Applying a Model-Based Systems Engineering Approach to Simulation and Testing for Ground and Space Applications	43.012	75,203	-
NASA	80NSSC21K1277	Reconfigurable Single Photon Detecting System for Small Satellites	43.012	70,178	-
NASA	80NSSC21K1301	Computationally-Efficient Large Divert Guidance	43.012	67,024	-
NASA	80NSSC21K1303	Distributed Collaboration and Coordination for Planetary Exploration Mission Support	43.012	61,810	-
NASA	80NSSC22K1222	Architectural Design Framework for Providing Passive Behavioral Health Countermeasures	43.012	58,220	-
		Total for AL # 43.012		*665,606*	-
43.U09					
NASA	80NSSC23PA074	NASA Participation in MIT Innovation Lab	43.U09	60,000	-
		Total for AL # 43.U09		*60,000*	-
		Total for National Aeronautics and Space Administration		**1,988,445**	**44,459**
		TOTAL for National Aeronautics and Space Administration		**1,988,445**	**44,459**
		TOTAL Federal Non-Research Support - On Campus		**11,880,751**	**984,764**

Appendix C
Massachusetts Institute of Technology
Federal Non-Research Support - Passthrough - On Campus
FY 2023 Expenditures by Prime Sponsor and Sponsor

Prime Sponsor Name	Project WBS id	Passthrough Number	WBS Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
DEPARTMENT OF DEFENSE						
Lincoln Laboratory						
DEPARTMENT OF DEFENSE	2749798	7000521424	For Credit Lab to accompany MIT Course 15.359J/6.901J Engineering Innovation	12.U69	95,149	-
DEPARTMENT OF DEFENSE	2749566	7100521424	For Credit Lab to accompany MIT Course 15.359J/6.901J Engineering Innovation	12.U64	59,714	-
DEPARTMENT OF DEFENSE	2749335	PO 7000513402	Support of the MIT Security Studies Program	12.U61	-9,246	-
DEPARTMENT OF DEFENSE	2749652	PO 7000548674	Support of the MIT Security Studies Program	12.U66	31,818	-
			Total for Lincoln Laboratory		**177,435**	**-**
Research Foundation of SUNY Polytechnic Institute						
DEPARTMENT OF DEFENSE	2749638	AGREEMENT DATED 1-1-2021	AIM Phase II	12.800	236,208	-
DEPARTMENT OF DEFENSE	2749643	AGREEMENT DATED 1-1-2021	AIM Phase II	12.800	297,168	-
DEPARTMENT OF DEFENSE	2749989	AGREEMENT DATED 1-1-2021	AIM Phase II	12.800	75,789	-
DEPARTMENT OF DEFENSE	2749990	AGREEMENT DATED 1-1-2021	AIM Phase II	12.800	43,117	-
			Total for Research Foundation of SUNY Polytechnic Institute		**652,282**	**-**
Technology Student Association						
DEPARTMENT OF DEFENSE	2749649	LETTER DATED 1-28-2022	MIT/Unite AEOP STEM High School Apprenticeship Program (HSAP) for FY 2022-23	12.630	13,200	-
			Total for Technology Student Association		**13,200**	**-**
American Society/Engineering Education						
DEPARTMENT OF DEFENSE	2291100	LETTER DATED 8/11/99	NDSEG Fellowship Program	12.300	2,601,954	-
			Total for American Society/Engineering Education		**2,601,954**	**-**
Florida State University						
DEPARTMENT OF DEFENSE	2749599	R000002977	Training Future Navy Workforce II Undergraduate Funding	12.300	2,222	-
DEPARTMENT OF DEFENSE	2748751	R02117	A SUMMER PROGRAM TO INTRODUCE ENGINEER RESEARCH TO UNDERGRADUATES	12.300	11,752	-
			Total for Florida State University		**13,974**	**-**

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FY 2023 Expenditures by Prime Sponsor and Sponsor

Prime Sponsor Name	Project WBS id	Passthrough Number	WBS Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
SUNY: AIM Photonics						
DEPARTMENT OF DEFENSE	2749489	2021-01	MITE-ARG (Massachusetts Integrated photonics Technology Engagement - Alternate Reality Game)	12.800	38,079	-
DEPARTMENT OF DEFENSE	2749490	2021-02	Integrated Photonics Devices for Application-Specific Design	12.800	74,112	-
			Total for SUNY: AIM Photonics		**112,191**	**-**
Advanced Functional Fabrics of America (AFFOA)						
DEPARTMENT OF DEFENSE	2749285	EXHIBIT 1-A	Shape-Shifting Climate-Adaptive Garments	12.U60	-2	-
DEPARTMENT OF DEFENSE	2749689	EXHIBIT 1-A	Shape-Shifting Climate-Adaptive Garments	12.U68	18,330	-
			Total for Advanced Functional Fabrics of America (AFFOA)		**18,328**	**-**
National Center for the Advancement of STEM Education						
DEPARTMENT OF DEFENSE	2749350	NP000	Plan to stand up an Open edX platform and develop a policy study	12.560	-1,609	-
DEPARTMENT OF DEFENSE	2749499	NP000	Plan to stand up an Open edX platform and develop a policy study	12.560	83,749	-
DEPARTMENT OF DEFENSE	2749826	P000	Support and Expansion of a Digital Learning Platform to Promote Manufacturing Careers in DoD Priority Areas	12.560	224,308	-
			Total for National Center for the Advancement of STEM Education		**306,448**	**-**
Draper Laboratory Incorporated						
DEPARTMENT OF DEFENSE	2389744	PO001-0001061954	Draper Fellow Reporting Parent FY21/22	12.U07	1,607	-
DEPARTMENT OF DEFENSE	2389734	PO001-0001061983	Draper Fellow Reporting Parent FY21/22	12.U03	1,367	-
DEPARTMENT OF DEFENSE	2389756	PO001-0001062011	Draper Fellow Reporting Parent FY21/22	12.U11	3,874	-
DEPARTMENT OF DEFENSE	2389755	PO001-0001062045	Draper Fellow Reporting Parent FY21/22	12.U10	-1,332	-
DEPARTMENT OF DEFENSE	2389754	PO001-0001062111	Draper Fellow Reporting Parent FY21/22	12.U09	-21,342	-
DEPARTMENT OF DEFENSE	2389758	PO001-0001062145	Draper Fellow Reporting Parent FY21/22	12.U12	1,320	-
DEPARTMENT OF DEFENSE	2389892	PO001-0001065384	Draper Fellow Reporting Parent FY22/23	12.U30	75,250	-
DEPARTMENT OF DEFENSE	2389888	PO001-0001065385	Draper Fellow Reporting Parent FY22/23	12.U27	73,834	-
DEPARTMENT OF DEFENSE	2389889	PO001-0001065386	Draper Fellow Reporting Parent FY22/23	12.U28	61,256	-
DEPARTMENT OF DEFENSE	2389880	PO001-0001065388	Draper Fellow Reporting Parent FY22/23	12.U19	65,713	-
DEPARTMENT OF DEFENSE	2389882	PO001-0001065445	Draper Fellow Reporting Parent FY22/23	12.U21	64,676	-
DEPARTMENT OF DEFENSE	2389881	PO001-0001065449	Draper Fellow Reporting Parent FY22/23	12.U20	71,775	-
DEPARTMENT OF DEFENSE	2389884	PO001-0001065450	Draper Fellow Reporting Parent FY22/23	12.U23	67,806	-
DEPARTMENT OF DEFENSE	2389883	PO001-0001065453	Draper Fellow Reporting Parent FY22/23	12.U22	73,747	-

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FY 2023 Expenditures by Prime Sponsor and Sponsor

Prime Sponsor Name	Project WBS id	Passthrough Number	WBS Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
DEPARTMENT OF DEFENSE	2389886	PO001-0001065469	Draper Fellow Reporting Parent FY22/23	12.U25	71,775	-
DEPARTMENT OF DEFENSE	2389885	PO001-0001065471	Draper Fellow Reporting Parent FY22/23	12.U24	65,318	-
DEPARTMENT OF DEFENSE	2389887	PO001-0001065474	Draper Fellow Reporting Parent FY22/23	12.U26	76,216	-
DEPARTMENT OF DEFENSE	2389898	PO001-0001065501	Draper Fellow Reporting Parent FY22/23	12.U34	72,783	-
DEPARTMENT OF DEFENSE	2389893	PO001-0001065527	Draper Fellow Reporting Parent FY22/23	12.U31	62,389	-
DEPARTMENT OF DEFENSE	2389890	PO001-0001065541	Draper Fellow Reporting Parent FY22/23	12.U29	81,274	-
DEPARTMENT OF DEFENSE	2389894	PO001-0001065544	Draper Fellow Reporting Parent FY22/23	12.U32	7,616	-
DEPARTMENT OF DEFENSE	2389897	PO001-0001065615	Draper Fellow Reporting Parent FY22/23	12.U33	57,590	-
DEPARTMENT OF DEFENSE	2389899	PO001-0001065625	Draper Fellow Reporting Parent FY22/23	12.U35	36,117	-
DEPARTMENT OF DEFENSE	2389972	PO001-0001066339	Draper Fellow Reporting Parent FY22/23	12.U43	815	-
DEPARTMENT OF DEFENSE	2389932	PO001-0001066489	Draper Fellow Reporting Parent FY22/23	12.U37	57,953	-
DEPARTMENT OF DEFENSE	2389943	PO001-0001066553	Draper Fellow Reporting Parent FY22/23	12.U38	57,590	-
DEPARTMENT OF DEFENSE	2389945	PO001-0001066580	Draper Fellow Reporting Parent FY22/23	12.U39	60,189	-
DEPARTMENT OF DEFENSE	2389946	PO001-0001066590	Draper Fellow Reporting Parent FY22/23	12.U40	60,189	-
DEPARTMENT OF DEFENSE	2389952	PO001-0001066592	Draper Fellow Reporting Parent FY22/23	12.U41	57,590	-
DEPARTMENT OF DEFENSE	2389971	PO001-0001067532	Draper Fellow Reporting Parent FY22/23	12.U42	30,500	-
DEPARTMENT OF DEFENSE	2390005	PO001-0001068208	Draper Fellow Reporting Parent FY22/23	12.U49	1,132	-
DEPARTMENT OF DEFENSE	2390032	PO001-0001069257	Draper Fellow Reporting Parent FY23/24	12.U50	4,378	-
DEPARTMENT OF DEFENSE	2390033	PO001-0001069318	Draper Fellow Reporting Parent FY23/24	12.U51	3,462	-
DEPARTMENT OF DEFENSE	2390037	PO001-0001069410	Draper Fellow Reporting Parent FY23/24	12.U52	4,833	-
DEPARTMENT OF DEFENSE	2390039	PO001-0001069631	Draper Fellow Reporting Parent FY23/24	12.U53	4,267	-
DEPARTMENT OF DEFENSE	2390043	PO001-0001069713	Draper Fellow Reporting Parent FY23/24	12.U54	4,169	-
DEPARTMENT OF DEFENSE	2390045	PO001-0001069719	Draper Fellow Reporting Parent FY23/24	12.U56	4,169	-
DEPARTMENT OF DEFENSE	2390047	PO001-0001069725	Draper Fellow Reporting Parent FY23/24	12.U58	4,169	-
DEPARTMENT OF DEFENSE	2390046	PO001-0001069726	Draper Fellow Reporting Parent FY23/24	12.U57	4,169	-
DEPARTMENT OF DEFENSE	2390048	PO001-0001069733	Draper Fellow Reporting Parent FY23/24	12.U59	3,808	-
DEPARTMENT OF DEFENSE	2390044	PO001-001069716A	Draper Fellow Reporting Parent FY23/24	12.U55	3,808	-
			Total for Draper Laboratory Incorporated		**1,437,819**	**-**
			TOTAL for Department of Defense		**5,333,631**	**-**

Appendix C
Massachusetts Institute of Technology
Federal Non-Research Support - Passthrough - On Campus
FY 2023 Expenditures by Prime Sponsor and Sponsor

Prime Sponsor Name	Project WBS id	Passthrough Number	WBS Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
DEPARTMENT OF COMMERCE						
U Delaware: National Institute for Innovation in Manufacturing Biopharmaceuticals (NIIMBL)						
DEPARTMENT OF COMMERCE	2749115	AGREEMENT EFFECTIVE 5/4/17	The National Institute for Innovation in Manufacturing Biopharmaceuticals (NIIMBL) - Memberships	11.619	1,817	-
DEPARTMENT OF COMMERCE	2749354	AGREEMENT EFFECTIVE 5/4/17	The National Institute for Innovation in Manufacturing Biopharmaceuticals (NIIMBL) - Memberships	11.619	-3,891	-
DEPARTMENT OF COMMERCE	2749616	AGREEMENT EFFECTIVE 5/4/17	The National Institute for Innovation in Manufacturing Biopharmaceuticals (NIIMBL) - Memberships	11.619	29,758	-
DEPARTMENT OF COMMERCE	2749953	AGREEMENT EFFECTIVE 5/4/17	The National Institute for Innovation in Manufacturing Biopharmaceuticals (NIIMBL) - Memberships	11.619	7,265	-
DEPARTMENT OF COMMERCE	2749515	PC4.1-206, PO# UDR0000041	NIIMBL Projects	11.619	48,732	-
		Total for U Delaware: National Institute for Innovation in Manufacturing Biopharmaceuticals (NIIMBL)			**83,681**	**-**
			TOTAL for Department of Commerce		**83,681**	**-**

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Prime Sponsor Name	Project WBS id	Passthrough Number	WBS Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
DEPARTMENT OF ENERGY						
Jefferson Science Associates, LLC						
DEPARTMENT OF ENERGY	2389690	22-D0270 YEAR 2 / 21-D0142 YEAR 1	Pybus-EIC JLab	81.U03	10,834	-
			Total for Jefferson Science Associates, LLC		**10,834**	**-**
Battelle Energy Alliance, LLC						
DEPARTMENT OF ENERGY	2749500	CONT 00112583/RELEASE 00003	INL-NUC Collaboration Activities at Massachusetts Institute of Technology	81.U04	73,616	-
DEPARTMENT OF ENERGY	2749804	RELEASE 00003/CONTR 00112583	INL-NUC Collaboration Activities at Massachusetts Institute of Technology	81.U05	108,775	-
			Total for Battelle Energy Alliance, LLC		**182,391**	**-**
			TOTAL for Department of Energy		**193,225**	**-**

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Prime Sponsor Name	Project WBS id	Passthrough Number	WBS Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
DEPARTMENT OF HOMELAND SECURITY						
Massachusetts Emergency Management Agency						
DEPARTMENT OF HOMELAND SECURITY	2750119	CTFEMA4496MITEC01425	COVID-19: FEMA-4496-DR-MA MEMA PW 01425	97.036	501,760	-
DEPARTMENT OF HOMELAND SECURITY	2750120	CTFEMA4496MITEC01735	COVID-19: FEMA-4496-DR-MA MEMA PW 01735	97.036	56,678	-
DEPARTMENT OF HOMELAND SECURITY	2750121	CTFEMA4496MITEC01738	COVID-19: FEMA-4496-DR-MA MEMA PW 01738	97.036	72,537	-
DEPARTMENT OF HOMELAND SECURITY	2750122	CTFEMA4496MITEC01821	COVID-19: FEMA-4496-DR-MA MEMA PW 01821	97.036	83,429	-
DEPARTMENT OF HOMELAND SECURITY	2750123	CTFEMA4496MITEC01946	COVID-19: FEMA-4496-DR-MA MEMA PW 01946	97.036	75,567	-
			Total for Massachusetts Emergency Management Agency		**789,971**	**-**
			TOTAL for Department of Homeland Security		**789,971**	**-**

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MISCELLANEOUS FEDERAL GOVT						
ECS Federal, LLC						
MISCELLANEOUS FEDERAL GOVT	2749853	22_VHAINNOVATION_MIT/PO# 23000213	Catalyst Spring 2023	64.U02	122,802	-
			Total for ECS Federal, LLC		**122,802**	**-**
Institute of International Education, Inc.						
MISCELLANEOUS FEDERAL GOVT	2389825	3000225139	Hubert H. Humphrey Fellowship Program (SPURS) 2021-2022	19.010	1,270	-
MISCELLANEOUS FEDERAL GOVT	2389823	3000228844	Hubert H. Humphrey Fellowship Program (SPURS) 2021-2022	19.010	44,468	-
MISCELLANEOUS FEDERAL GOVT	2389989	3000259162	Hubert H. Humphrey Fellowship Program (SPURS) 2022-2023	19.010	184,221	-
MISCELLANEOUS FEDERAL GOVT	2749864	3000259162	Hubert H. Humphrey Fellowship Program (SPURS) 2022-2023	19.010	31,082	-
			Total for Institute of International Education, Inc.		**261,041**	**-**
Washington Business Dynamics, LLC						
MISCELLANEOUS FEDERAL GOVT	2749567	AGRMT DTD 9/8/2021	Catalyst Spring Program 2022	64.U01	132,247	-
			Total for Washington Business Dynamics, LLC		**132,247**	**-**
American Council on Education						
MISCELLANEOUS FEDERAL GOVT	2749120	SUZ800-18-CA-0001	Co-Development and Cross-Pollination of Effective, Hands-On Nuclear Physics Educational Activities	19.U01	8,753	-
			Total for American Council on Education		**8,753**	**-**
			TOTAL for Miscellaneous Federal Govt		**524,843**	**-**

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Federal Non-Research Support - Passthrough - On Campus
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Prime Sponsor Name	Project WBS id	Passthrough Number	WBS Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION						
Space Telescope Science Institute						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	2389367	HST-HF2-51421.001-A	Radiation Signatures of the First Galaxies and Supermassive Black Holes (Fellow: Aaron Smith)	43.U03	18,921	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	2389528	HST-HF2-51434.001-A	The Formation and Growth of Supermassive Black Holes at Early Cosmic Epochs (HST-HF2-51434; Postdoc Christina Eilers)	43.U04	13,418	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	2749157	HST-HF2-51452.001-A	Cosmology and Astrophysics with Gravitational-Waves from Stellar-Mass Compact Binary Mergers (HF2-51452; Fellow: Hsin-Yu Chen)	43.U07	29,290	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	2749825	HST-HF2-51452.001-A	Cosmology and Astrophysics with Gravitational-Waves from Stellar-Mass Compact Binary Mergers (HF2-51452; Fellow: Hsin-Yu Chen)	43.U08	37,344	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	2389757	HST-HF2-51477.001-A	Unveiling the local stellar graveyard (HST-HF2-51477; Postdoc Fellow Kishalay De)	43.001	95,603	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	2389965	HST-HF2-51499.001-A	The awakening of massive black holes (HST-HF2-51499; Postdoc Fellow Riccardo Arcodia)	43.U06	66,780	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	2389937	HST-HF2-51515.001-A	The First Glimpse of the First Galaxies: A Near & Far Approach (HST-HF2-51515; Fellow: Rohan Naidu)	43.U05	6,908	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	2749835	HST-HF2-51515.001-A	The First Glimpse of the First Galaxies: A Near & Far Approach (HST-HF2-51515; Fellow: Rohan Naidu)	43.U10	79,295	-
			Total for Space Telescope Science Institute		**347,559**	**-**
Baylor College of Medicine						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	2748341	PO# 7000000554	Dean of Science Education	43.003	26,986	-
			Total for Baylor College of Medicine		**26,986**	**-**
			TOTAL for National Aeronautics and Space Administration		**374,545**	**-**

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Massachusetts Institute of Technology
Federal Non-Research Support - Passthrough - On Campus
FY 2023 Expenditures by Prime Sponsor and Sponsor

Prime Sponsor Name	Project WBS id	Passthrough Number	WBS Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
US AGENCY FOR INTERNATIONAL DEVELOPMENT						
SSG Advisors, LLC d/b/a Resonance						
US AGENCY FOR INTERNATIONAL DEVELOPMENT	2749068	2020-CATALYST-GA007	A Challenge to Address Gender-Based Violence in the Environment	98.U01	1	-
			Total for SSG Advisors, LLC d/b/a Resonance		**1**	**-**
Unilab Foundation, Inc						
US AGENCY FOR INTERNATIONAL DEVELOPMENT	2749854	SUBAWARD DATED 12-15-2022	Advanced Manufacturing Workforce Development Alliance	98.001	132,399	-
			Total for Unilab Foundation, Inc		**132,399**	**-**
PM Consulting Group						
US AGENCY FOR INTERNATIONAL DEVELOPMENT	2749878	TO IDS2022:38	PMCG master subconrtract	98.U02	82,609	-
US AGENCY FOR INTERNATIONAL DEVELOPMENT	2749879	TO IDS2022:38	PMCG master subconrtract	98.U03	162,736	147,942
			Total for PM Consulting Group		**245,345**	**147,942**
			TOTAL for US Agency for International Development		**377,745**	**147,942**
			TOTAL Federal Non-Research Support - Passthrough - On Campus		**$7,677,641**	**$147,942**

SECTION III

REPORTS ON INTERNAL CONTROL AND COMPLIANCE AND SCHEDULE OF FINDINGS AND QUESTIONED COSTS

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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 Members of the Corporation of the Massachusetts Institute of Technology

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 the Massachusetts Institute of Technology and its subsidiaries (the "Institute"), which comprise the consolidated statement of financial position as of June 30, 2023, and the related consolidated statements of activities, 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 6, 2023, except with respect to Note K to the consolidated financial statements and the opinion on the financial responsibility supplemental schedule, as to which the date is March 28, 2024.

Report on Internal Control Over Financial Reporting

In planning and performing our audit of the consolidated financial statements, we considered the Institute'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 Institute's internal control. Accordingly, we do not express an opinion on the effectiveness of the Institute'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 consolidated 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 Institute'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 consolidated 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 Institute'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 Institute's internal control and compliance. Accordingly, this communication is not suitable for any other purpose.

Boston, Massachusetts
October 6, 2023, except with respect to Note K to the consolidated financial statements and the opinion on the financial responsibility supplemental schedule, as to which the date is March 28, 2024.

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

To the Members of the Corporation of the Massachusetts Institute of Technology

Report on Compliance for Each Major Federal Program

Opinion on Each Major Federal Program

We have audited the Massachusetts Institute of Technology and its subsidiaries' (the "Institute") 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 Institute's major federal programs for the year ended June 30, 2023. The Institute'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 Institute 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 Institute 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 Institute'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 Institute'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 Institute'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 Institute'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 Institute'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 Institute'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 Institute'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.

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
March 28, 2024

Massachusetts Institute of Technology
Schedule of Findings and Questioned Costs
Year Ended June 30, 2023

Section I Summary of Auditor's Results

Financial Statements

Type of auditors' report issued	Unmodified opinion
Internal control over financial reporting	
Material weakness(es) identified	___ Yes _X_ No
Significant deficiency (ies) identified that are not considered to be material weaknesses	___ Yes _X_ None Reported
Noncompliance material to financial statements noted?	___ Yes _X_ No

Federal Awards

Internal control over major programs	
Material weakness (es) identified?	___ Yes _X_ No
Significant deficiency (ies) identified that are not considered to be material weaknesses?	___ Yes _X_ None Reported
Type of auditors' report issued on compliance for major programs	Unmodified opinion
Any audit findings disclosed that are required to be reported in accordance with 2 CFR 200.516(a)?	___ Yes _X_ No

Identification of major programs

Assistance Listing Number	**Name of Federal Program or Cluster**
Various	Research & Development Cluster Student
Various	Financial Assistance Cluster
84.425E, 84.425F	COVID-19: Higher Education Emergency Relief Fund II– Student Aid under the Coronavirus Response and Relief Supplement Appropriate Act, 2021, Higher Education Emergency Relief Funds III – Institutional Portion under the American Rescue Plan

Dollar threshold used to distinguish between Type A and Type B programs	$5,433,324
Auditee qualifies as a low-risk auditee?	_X_ Yes ___ No

Section II Financial Statement Findings

There are no matters to report.

Section III Federal Award Findings and Questioned Costs

There are no matters to report.

Massachusetts Institute of Technology
Summary Schedule of Prior Audit Findings and Status
Year Ended June 30, 2023

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