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, 2022

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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, 2022

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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, 2022 and 2021, and the related consolidated statements of activities for year ended June 30, 2022, and of cash flows for the years ended June 30, 2022 and 2021, 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, 2022 and 2021, and the changes in its net assets for the year ended June 30, 2022 and its cash flows for the years ended June 30, 2022 and 2021 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, 2021, and the related consolidated statements of activities and cash flows for the year then ended (the consolidated statement of activities is not presented herein), and in our report dated October 13, 2021, 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, 2021 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 consolidated 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 consolidated financial statements are issued.

Auditors' Responsibilities for the Audit of the Consolidated Financial Statements

Our objectives are to obtain reasonable assurance about whether the consolidated financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditors' report that includes our opinion. Reasonable assurance is a high level of assurance but is not absolute assurance and therefore is not a guarantee that an audit conducted in accordance with 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 consolidated 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, 2022 and the financial responsibility supplemental schedule as of and for the year ended June 30, 2022 are presented for purposes of additional analysis as required by Title 2 U.S. *Code of Federal Reg*ulations 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 Reporting Required by *Government Auditing Standards*

In accordance with *Government Auditing Standards*, we have also issued our report dated October 7, 2022, 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 29, 2023, 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, 2022. 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 7, 2022, 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 29, 2023.

MASSACHUSETTS INSTITUTE OF TECHNOLOGY
CONSOLIDATED STATEMENTS OF FINANCIAL POSITION
as of June 30, 2022, and 2021

(in thousands of dollars)	2022	2021
Assets		
Cash	$ 374,672	$ 345,519
Accounts receivable, net	394,067	358,742
Pledges receivable, net, at fair value	585,003	571,268
Contracts in progress, principally US government	104,740	81,766
Deferred charges and other assets	257,775	236,721
Investments, at fair value	32,548,631	34,793,438
Operating leases - right of use assets	236,823	273,512
Net asset position - defined benefit pension plan	382,863	950,414
Net asset position - retiree welfare benefit plan	312,366	439,150
Land, buildings, and equipment (at cost of $7,001,073 for June 2022; $6,642,569 for June 2021), net of accumulated depreciation	4,686,460	4,475,962
Total assets	**$ 39,883,400**	**$ 42,526,492**
Liabilities and Net Assets		
Liabilities:		
Accounts payable, accruals, and other liabilities	$ 671,444	$ 712,377
Deferred revenue and other credits	269,693	321,496
Advance payments	522,358	513,726
Operating lease liabilities	246,083	282,040
Liabilities due under life income fund agreements, at fair value	286,241	321,450
Borrowings, net of unamortized issuance costs	4,657,050	3,929,034
Total liabilities	**$ 6,652,869**	**$ 6,080,123**
Net Assets:		
Without donor restrictions	$ 14,295,593	$ 15,725,732
With donor restrictions	18,934,938	20,720,637
Total net assets	**$ 33,230,531**	**$ 36,446,369**
Total liabilities and net assets	**$ 39,883,400**	**$ 42,526,492**

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, 2022
(with summarized financial information for the year ended June 30, 2021)

(in thousands of dollars)	2022 Without Donor Restrictions	2022 With Donor Restrictions	Total 2022	Total 2021
Operating Revenues				
Tuition and similar revenues, exclusive of financial aid of $417,572 in 2022 and $401,198 in 2021	$ 415,252	$ -	$ 415,252	$ 344,303
Sponsored support:				
Campus direct	608,753	-	608,753	578,900
Lincoln direct	1,072,814	-	1,072,814	1,073,876
SMART direct	21,639	-	21,639	28,246
Indirect cost recovery	284,643	-	284,643	276,103
Total sponsored support	1,987,849	-	1,987,849	1,957,125
Contributions	421,437	34,292	455,729	448,179
Other revenue	241,985	-	241,985	200,878
Support from investments:				
Endowment	834,545	-	834,545	749,106
Other investments	187,657	-	187,657	163,536
Total support from investments	1,022,202	-	1,022,202	912,642
Auxiliary enterprises	142,133	-	142,133	81,965
Total revenues	$ 4,230,858	$ 34,292	$ 4,265,150	$ 3,945,092
Operating Expenses				
Salaries and wages	$ 1,700,986	$ -	$ 1,700,986	$ 1,617,407
Employee benefits	608,873	-	608,873	577,802
Supplies and services	1,125,335	-	1,125,335	964,472
Subrecipient agreements	161,253	-	161,253	142,319
Utilities, rent, and repairs	214,645	-	214,645	226,187
Total expenses before depreciation and interest	3,811,092	-	3,811,092	3,528,187
Results of operations before depreciation and interest	419,766	34,292	454,058	416,905
Depreciation	223,364	-	223,364	209,325
Interest expense	156,807	-	156,807	126,468
Results of operations	39,595	34,292	73,887	81,112
Net periodic benefit income other than service cost	197,935	-	197,935	135,255
Net results	$ 237,530	$ 34,292	$ 271,822	$ 216,367
Other Revenues, Gains, and Losses				
Contributions	$ -	$ 230,951	$ 230,951	$ 57,005
Net return on investments	(514,656)	(1,541,551)	(2,056,207)	10,889,913
Distribution of investment income and gains	(436,635)	(585,567)	(1,022,202)	(912,642)
Other changes	88,989	(23,057)	65,932	103,504
Postretirement plan changes other than net periodic benefit cost	(706,134)	-	(706,134)	1,875,291
Net asset reclassifications and transfers	(99,233)	99,233	-	-
Total other revenues, gains, and losses	(1,667,669)	(1,819,991)	(3,487,660)	12,013,071
(Decrease) increase in net assets	(1,430,139)	(1,785,699)	(3,215,838)	12,229,438
Net assets at the beginning of the year	15,725,732	20,720,637	36,446,369	24,216,931
Net assets at the end of the year	**$ 14,295,593**	**$ 18,934,938**	**$ 33,230,531**	**$ 36,446,369**

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, 2022, and 2021

(in thousands of dollars)	2022	2021
Cash Flow from Operating Activities		
(Decrease) Increase in net assets	$ (3,215,838)	$ 12,229,438
Adjustments to reconcile change in net assets		
to net cash used in operating activities:		
Net loss/(gain) on investments	2,138,280	(10,952,680)
Change in retirement plan asset, net of projected benefit obligation	694,335	(1,849,359)
Depreciation	223,364	209,325
Net loss/(gain) on life income funds and donor advised funds	39,680	(204,534)
Non-cash operating lease costs	36,689	40,225
Amortization of bond premiums and discounts and other adjustments	(4,993)	4,735
Change in operating assets and liabilities:		
Pledges receivable	(13,735)	49,072
Accounts receivable	(37,730)	(98,983)
Contracts in progress	(22,974)	18,120
Deferred charges and other assets	(20,582)	(50,089)
Accounts payable, accruals, and other liabilities	(25,239)	71,552
Liabilities due under life income fund agreements	(8,803)	110,341
Deferred revenue and other credits	(50,005)	119,321
Advance payments	8,632	56,159
Operating lease liability	(35,957)	(39,335)
Reclassification of donated securities	(9,659)	(8,308)
Reclassification of investment income for restricted purposes	(5,169)	(4,907)
Reclassification of contributions restricted for long-term investment	(264,029)	(159,110)
Net cash and restricted cash used in operating activities	(573,733)	(459,017)
Cash Flow from Investing Activities		
Purchase of land, buildings, and equipment	(449,374)	(384,586)
Purchases of investments	(9,426,475)	(9,173,044)
Proceeds from sale of investments	9,435,900	9,822,591
Student notes issued	(3,788)	(3,904)
Collections from student notes	6,080	7,054
Net cash and restricted cash (used in) provided by investing activities	(437,657)	268,111
Cash Flow from Financing Activities		
Contributions restricted for long-term investment	264,029	159,110
Payments to beneficiaries of life income funds	(26,406)	(21,812)
Proceeds from sale of donated securities restricted for endowment	9,659	8,308
Investment income for restricted purposes	5,169	4,907
Proceeds from borrowings	748,847	-
Repayment of borrowings	(15,907)	(261,180)
Repayments of government advances for student loans	(1,798)	(3,978)
Net cash and restricted cash provided by (used in) financing activities	983,593	(114,645)
Net decrease in cash and restricted cash	(27,797)	(305,551)
Cash and restricted cash at the beginning of the period	723,407	1,028,958
Cash and restricted cash at the end of the period	**$ 695,610**	**$ 723,407**
Supplemental Information on cash and restricted cash:		
Cash on Statements of Financial Position	$ 374,672	$ 345,519
Cash and restricted cash included in Investments (see Note B)	307,560	364,982
Restricted cash included in Other Assets (see Note G)	13,378	12,906
Total cash and restricted cash on Cash Flow	**$ 695,610**	**$ 723,407**

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) 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 (i.e., 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, 2022, there are no significant uncertain positions taken or expected to be taken.

Cash

Certain cash balances, totaling $24.5 million and $56.2 million as of June 30, 2022, and 2021, 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 $310.2 million and $301.9 million as of June 30, 2022, and 2021, 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 financial statements in the amount of $71.3 million and $71.5 million during 2022 and 2021, respectively. Land, buildings, and equipment as of June 30, 2022, and 2021, are shown in Table 1 below.

TABLE 1. LAND, BUILDINGS, AND EQUIPMENT

(in thousands of dollars)	2022	2021
Land	$ 107,557	$ 107,557
Land improvements	109,590	109,590
Educational buildings	5,789,118	5,448,940
Equipment	421,716	421,981
Software	33,524	45,693
Total	6,461,505	6,133,761
Less: accumulated depreciation	(2,314,613)	(2,166,607)
Construction in progress	530,284	503,281
Software projects in progress	9,284	5,527
Net land, buildings, and equipment	**$ 4,686,460**	**$ 4,475,962**

Depreciation expense was $223.4 million in fiscal 2022 and $209.3 million in fiscal 2021. Net interest expense of $9.8 million and $31.8 million was capitalized during fiscal 2022 and fiscal 2021, 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)	2022	2021
Undergraduate and graduate programs*	$ 333,083	$ 279,831
Executive and continuing education programs	82,169	64,472
Tuition and similar revenues	**$ 415,252**	**$ 344,303**

* Undergraduate and graduate programs at published rates totaled $750,655 and $681,029 in 2022 and 2021, respectively, and financial aid applied to undergraduate and graduate programs was $417,572 and $401,198 in 2022 and 2021, 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

	2022			2021		
(in thousands of dollars)	Institute Sources	External Sponsors	Total Student Support	Institute Sources	External Sponsors	Total Student Support
Undergraduate tuition support	$ 143,516	$ 20,039	$ 163,555	$ 137,759	$ 21,447	$ 159,206
Graduate tuition support	274,056	63,451	337,507	263,439	60,742	324,181
Fellowship stipends	38,330	16,913	55,243	35,608	16,185	51,793
Student employment	58,619	90,898	149,517	53,814	86,627	140,441
Total	**$ 514,521**	**$ 191,301**	**$ 705,822**	**$ 490,620**	**$ 185,001**	**$ 675,621**

A. Accounting Policies (continued)

Sponsored Support and Advance Payments

Almost all of Lincoln and SMART sponsored revenue, and 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 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 (which are contractually authorized by the sponsor but for which costs have not yet been incurred) totaled $731.2 million and $809.5 million as of fiscal 2022 and fiscal 2021, respectively. Sponsored activities on campus (which are contractually authorized by the sponsor but for which costs have not yet been incurred) totaled $1,064.5 million and $1,048.5 million as of fiscal 2022 and fiscal 2021, 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. 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. Any adjustment in the rate is charged or credited to net assets without donor restrictions.

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 $82.6 million and $58.6 million in fiscal 2022 and fiscal 2021, 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 $0.3 million in fiscal 2022 and $1.2 million in fiscal 2021. 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 records items of collections as gifts at nominal value. They 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 of revenue. 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 roll forward 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)	2022	2021
Balance at the beginning of the year	$ 321,450	$ 232,921
Additions for new gifts	5,558	3,538
Termination and payments to beneficiaries	(27,856)	(31,550)
Net investment and actuarial (loss) gain	(12,911)	116,541
Balance at the end of the year	**$ 286,241**	**$ 321,450**

Recently Adopted Accounting Standards

On July 1, 2020, the Institute adopted ASU 2016-02 – *Leases* (Topic 842), which requires a lessee to recognize a right of use asset and a lease liability, initially measured at the present value of the lease payments, in its Consolidated Statements of Financial Position. The guidance also expands the required quantitative and qualitative disclosures surrounding leases. The effects of adopting this guidance resulted in the inclusion of the present value of operating lease payments in the Consolidated Statements of Financial Position as Operating leases—right of use assets of $313.7 million and Operating leases liabilities of $321.4 million as of the adoption date of July 1, 2020. These values as of June 30, 2022, are $236.8 million and $246.1 million, respectively. The Institute elected the package of practical expedients not to reassess: (1) whether any expired or existing contracts are or contain leases, (2) lease classification for any expired or existing leases, and (3) initial direct costs for any expired or existing leases. The Institute elected the short-term lease exemption policy as well as the practical expedient that allows lessees to treat the lease and non-lease components as a single lease component. In addition, the Institute elected to use hindsight to reassess lease terms or impairment at the adoption date. Refer to Note G for further information.

A. Accounting Policies (continued)

Non-Cash Items

Non-cash transactions excluded from the Consolidated Statements of Cash Flows include $12.7 million and $25.7 million of accrued liabilities related to plant and equipment purchases as of June 30, 2022, and 2021, 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 7, 2022, the date on which the financial statements were issued. There were no subsequent events that occurred after the balance sheet date 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 consolidated in MIT's financial statements. There are three categories of related-party entities that are not consolidated in MIT's 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 projected 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 investments at fair value in investments 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 accounting principles generally accepted 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, 2021, 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, 2022, and 2021, MIT held $236.2 million and $235.6 million, respectively, of investments that are valued using the measurement alternative. These investments are included within Level 3 of the fair value hierarchy table. 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 biannually, or more frequently as needed. Members of the Committee report annually to MIT's Risk and Audit Committee.

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 $716.4 million in fiscal 2022 and fiscal 2021, 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 on the Consolidated Statements of Financial Position and in restricted cash included in investments on the Consolidated Statements of Cash Flows.

B. Investments (continued)

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, 2022, and 2021, respectively, grouped by the valuation hierarchy described herein. All net realized and unrealized gains and losses relating 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 $2,668.0 million and $1,999.4 million as of June 30, 2022, and 2021, respectively.

TABLE 5. INVESTMENTS

(in thousands of dollars)	Level 1	Level 2	Level 3	NAV	Total Fair Value
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**
Fiscal Year 2021					
Cash and short-term investments	$ 441,646	$ -	$ -	$ -	$ 441,646
US Treasury	2,481,174	-	-	-	2,481,174
US government agency	-	77,445	-	-	77,445
Domestic bonds	10,187	888,329	119,092	-	1,017,608
Foreign bonds	676	82,445	-	-	83,121
Common equity:					
Domestic	295,858	1	234,757	-	530,616
Foreign	948,655	-	87,539	-	1,036,194
Equity:**					
Absolute return	-	-	-	5,742,657	5,742,657
Domestic	-	-	-	3,158,017	3,158,017
Foreign	-	-	-	3,848,479	3,848,479
Private	-	-	-	11,658,356	11,658,356
Real estate*	2,397	-	3,321,213	1,054,112	4,377,722
Real assets*	9,287	-	313	235,127	244,727
Split-interest agreements	-	-	89,999	-	89,999
Other	-	-	6,445	-	6,445
Derivatives, assets/(liabilities)	(84)	(684)	-	-	(768)
Investments, at fair value	**$ 4,189,796**	**$ 1,047,536**	**$ 3,859,358**	**$ 25,696,748**	**$ 34,793,438**

** 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, 2022, and 2021.

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 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**
Fiscal Year 2021							
Domestic bonds	$ 113,689	$ -	$ 12	$ 17,436	$ (12,045)	$ -	$ 119,092
Common equity:							
Domestic	234,413	58	119	225	(58)	-	234,757
Foreign	13,502	-	39,906	34,131	-	-	87,539
Real estate	2,884,164	38,501	397,440	520,286	(108,918)	(410,260)	3,321,213
Real assets	356	-	(43)	-	-	-	313
Split-interest agreements	78,322	-	13,092	58	(1,473)	-	89,999
Other	2,507	-	(62)	4,000	-	-	6,445
Investments, at fair value	**$ 3,326,953**	**$ 38,559**	**$ 450,464**	**$ 576,136**	**$ (122,494)**	**$ (410,260)**	**$ 3,859,358**

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, 2022, and 2021.

TABLE 7. LEVEL 3 VALUATION TECHNIQUES

(in thousands of dollars)	Fair Value as of June 30, 2022	Fair Value as of June 30, 2021	Valuation Technique	Unobservable Input	2022 Rates	2022 Weighted Average	2021 Rates	2021 Weighted Average
Real estate	$ 4,372,209	$ 3,019,511	Income approach	Discount Rate	4.25-7.5%	6.12%	4.5-7.75%	6.38%
				Capitalization Rate	3.75-7.05%	4.45%	3.0-6.5%	4.98%
				Terminal Capitalization Rate	4-6.5%	4.93%	4.25-7.0%	5.44%
	229,935	224,638	Market approach	Comparable Sale Transactions	$165-365/FAR	$293/FAR	$155-360/FAR	$287/FAR
Equity securities	223,585	279,321	Discounted cash flow	Discount Rate	12.50%	12.5%	12.50%	12.50%
			Last round of financing	N/A	N/A	N/A	N/A	N/A
Split-interest agreements	80,970	89,999	Net present value	Discount Rate	3.85%	3.85%	1.45%	1.45%
Real assets	317	313	Discounted cash flow	Discount Rate	25.0%	25.0%	25.0%	25.0%
Total assets	**$ 4,907,016**	**$ 3,613,782**						

Certain Level 3 investments and debt totaling ($541,767) and $245,576 as of June 30, 2022, and June 30, 2021, respectively, have been valued at cost or using unadjusted third-party quotations 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, 2022, and 2021.

TABLE 8. UNFUNDED COMMITMENTS AND REDEMPTON TERMS AND RESTRICTIONS

	2022		2021			
(in thousands of dollars)	Unfunded Commitments	Fair Value	Unfunded Commitments	Fair Value	Redemption Terms	Days Notice
Equity:						
Absolute return[1]	$ 63,678	$ 5,008,840	$ 56,999	$ 5,742,657	Range from daily to 48 months[4]	0 to 365 days
Domestic[2]	52,685	2,238,425	52,723	3,158,017	Range from 30 days to 48 months[4]	5 to 120 days
Foreign[3]	1,200	2,640,950	-	3,848,479	Range from daily to 48 months[4]	1 to 180 days
Private	3,380,446	11,028,666	2,850,260	11,658,356	Close-ended funds not available for redemption	Not Applicable
Real estate	719,327	1,374,864	795,235	1,054,112	Close-ended funds not available for redemption	Not Applicable
Real assets	35,663	237,927	64,530	235,127	37 months[4]	Lock-up provisions range from 30 days to not redeemable
Total	**$ 4,252,999**	**$ 22,529,672**	**$ 3,819,747**	**$ 25,696,748**		

[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 33 months.

[3]Foreign funds include funds that have remaining lock-up provisions up to 32 months.

[4] 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, 2022, and 2021, 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 gains related to derivatives totaled $184.9 million for the year ended June 30, 2022. Cumulative net losses related to derivatives totaled $36.7 million for the year ended June 30, 2021.

D. Pledges Receivable

Table 9 below shows the time periods in which pledges receivable as of June 30, 2022, and 2021, are expected to be realized.

TABLE 9. PLEDGES RECEIVABLE

(in thousands of dollars)	2022	2021
In one year or less	$ 325,612	$ 352,658
Between one year and five years	313,267	250,565
More than five years	61,526	89,472
Less: allowance for unfulfilled pledges	(115,402)	(121,427)
Pledges receivable, net	**$ 585,003**	**$ 571,268**

A review of pledges is periodically made with regard to 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 $78.3 million and $26.4 million in 2022 and 2021, respectively. The pledge discount rate ranged from fiscal 2022 at 2.8 percent to fiscal 2044 at 4.1 percent. MIT had gross conditional pledges, not recorded, for the promotion of education and research of $298.8 million and $353.6 million in fiscal 2022 and 2021, 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, 2022, and 2021.

TABLE 10. CONDITIONAL PLEDGES

(in thousands of dollars)	2022	2021
Building Construction	$ 124,495	$ 135,985
Fundraising Challenge	100,380	140,970
Foundation Grants	59,760	52,600
Other	14,159	23,959
Total conditional pledges	**$ 298,794**	**$ 353,514**

Table 11 below is a rollforward of pledges receivable as of June 30, 2022, and 2021.

TABLE 11. ROLLFORWARD OF PLEDGES RECEIVABLE

(in thousands of dollars)	2022	2021
Balance at beginning of the year	$ 571,268	$ 620,340
New pledges	303,056	192,190
Pledge payments received	(243,443)	(190,585)
Change in pledge discount	(51,902)	2,110
Change in allowance for unfulfilled pledges	6,024	(52,787)
Balance at the end of the year	**$ 585,003**	**$ 571,268**

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)	2022	2021
Financial assets:		
Cash and liquid operating investments	$ 3,020,767	$ 2,327,158
Accounts and notes receivable	379,812	340,265
Contributions receivable	170,826	174,392
Investments appropriated for spending in the following year	1,221,656	928,214
Total financial assets available within one year	**$ 4,793,061**	**$ 3,770,029**

As part of the 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 $387.0 million was undrawn as of both June 30, 2022, and June 30, 2021 (see Note F for further details on the line of credit).

F. Net Borrowings

MIT's outstanding borrowings as of June 30, 2022, and 2021, are shown in Table 13 below.

TABLE 13. NET BORROWINGS

(in thousands of dollars / due dates are calendar based / par values)	2022	2021
Educational plant		
Massachusetts Health and Educational Facilities Authority (MassDevelopment)		
Series I, 5.20%, due 2028, par value $30,000	$ 30,316	$ 30,374
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 2022-2032, par value $177,000	181,900	182,600
Series L, 5.0%-5.25%, due 2023-2033, par value $115,670	120,003	120,588
Series M, 5.25%, due 2022-2030, par value $68,760	71,736	84,008
Series P, 5.0%, due 2050, par value $136,055	204,932	207,392
Total MassDevelopment	858,887	874,962
Taxable		
Medium Term Notes Series A, 7.125% due 2026, par value $17,415	17,398	17,394
Medium Term Notes Series A, 7.25%, due 2096, par value $45,604	45,480	45,476
Taxable Bonds, Series B, 5.60%, due 2111, par value $750,000	747,238	747,207
Taxable Bonds, Series C, 4.678%, due 2114, par value $550,000	550,000	550,000
Taxable Bonds, Series D, 2.051-3.959%, 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 $525,000	548,225	300,000
Taxable Bonds, Series G, 2.294% due 2051, par value 350,000	350,000	350,000
Taxable Bonds, Series H, 3.067% due 2052, par value 500,000	500,000	-
Notes payable to bank, variable rate, due 2023	113,035	113,034
Total Taxable	3,827,376	3,079,111
Total borrowings*	4,686,263	3,954,073
Unamortized bond issuance costs	(29,213)	(25,039)
Total borrowings net of unamortized debt issuance costs	**$ 4,657,050**	**$ 3,929,034**

** Proceeds from recent issuances were in the process of being invested in physical assets in 2021 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)		
2023	$	55,500
2024		51,455
2025		12,385
2026		116,445
2027*		-

*Please note that there is no amount required to be paid in fiscal 2027

MIT maintains a line of credit with a major financial institution for an aggregate commitment of $500.0 million. As of June 30, 2022, $387.0 million was available under this line of credit. The line of credit expires on March 31, 2023.

Cash paid for interest on long-term debt in 2022 and 2021 was $164.9 million and $163.1 million, respectively.

Variable interest rates as of June 30, 2022, are shown in Table 15 below.

TABLE 15. VARIABLE INTEREST RATES

(in thousands of dollars)	Amount	Rate
MassDevelopment Series J-1	$ 125,000	0.21%
MassDevelopment Series J-2	125,000	0.20%
Notes payable to bank	113,035	0.79%

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, 2022, and 2021, the swap agreement had fair values of ($25.5) million and ($48.0) million, respectively, included in the accounts payable, accruals, and other liabilities line item on the Statements of Financial Position. This swap had net gains of $22.5 million and $13.0 million in 2022 and 2021, 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 $75.1 million and $37.8 million as of June 30, 2022, and 2021, respectively.

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 2020, and the audit for fiscal 2021 is in progress. ONR has completed negotiations of final rates through fiscal 2019 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 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 $40.5 million and $37.3 million in fiscal 2022 and fiscal 2021, respectively.

Future minimum lease payments and reconciliation to the Consolidated Statements of Financial Position as of June 30, 2022, are as follows:

TABLE 16. ANNUAL MINIMUM LEASE

(in thousands of dollars)

2023	$	43,353
2024		40,860
2025		38,716
2026		35,978
2027		36,918
Thereafter		60,441
Total minimum lease payments		256,266
Less: Amount representing interest		(10,183)
Present value of net minimum lease payments	$	246,083

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

TABLE 17. QUANTITATIVE DISCLOSURES

(in thousands of dollars)	2022	2021
Accretion of the Lease Liability	$ 35,957	$ 39,335
Operating Cash Flows from Operating Leases	$ 39,192	$ 36,307
Weighted Average Remaining Lease Term in Years	7.0	7.8
Weighted Average Discount Rate	1.1%	1.1%

Assets Pledged as Collateral

As of June 30, 2022, $13.4 million of assets was 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, 2022, MIT had contractual obligations of approximately $692.2 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, 2022, these commitments included approximately $81.4 million of contractual obligations related to the Kendall Square Initiative, and $47.4 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 14 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 $173.5 million and $124.5 million in fiscal 2022 and fiscal 2021, 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, 2022, and 2021, 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 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**
Fiscal Year 2021				
Compensation	$ 515,995	$ 600,591	$ 943,368	$ 2,059,954
Other operating	115,215	382,495	609,081	1,106,791
Space-related	142,597	194,350	225,033	561,980
2021 Total	**$ 773,807**	**$ 1,177,436**	**$ 1,777,482**	**$ 3,728,725**

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 for 2022 and 2021. MIT designated contributions of $2.4 million to the retiree welfare benefit plan in 2021. There were no designated contributions to the retiree welfare benefit welfare benefit plan in 2022.

For the defined contribution plan, the amounts contributed and expenses recognized during 2022 and 2021 were $71.5 million and $68.9 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) in excess of 10 percent of the greater of the projected 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. Beginning July 1, 2022, MIT will further accelerate 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, 2022, and 2021.

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)	2022	2021	2022	2021
Components of net periodic benefit cost recognized in net results:				
Service cost	$ 152,837	$ 129,749	$ 33,299	$ 33,819
Interest cost	178,186	163,467	23,700	23,562
Expected return on plan assets	(360,746)	(312,083)	(62,585)	(54,000)
Amortization of net actuarial loss (gain)	33,431	44,534	(10,269)	(1,000)
Amortization of prior service cost	347	265	-	-
Net periodic benefit cost (income) recognized in net results	4,055	25,932	(15,855)	2,381
Other amounts recognized in other revenues, gains, and losses				
Current year prior service cost	-	890	14,308	-
Current year actuarial loss (gain)	597,273	(1,484,305)	118,062	(348,077)
Amortization of actuarial (loss) gain	(33,431)	(44,534)	10,269	1,000
Amortization of prior service (cost)	(347)	(265)	-	-
Total other amounts recognized in other revenues, gains, and losses	563,495	(1,528,214)	142,639	(347,077)
Total recognized	**$ 567,550**	**$ (1,502,282)**	**$ 126,784**	**$ (344,696)**

Cumulative amounts recognized in net assets without donor restrictions are summarized in Table 20 below for the years ended June 30, 2022, and 2021.

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

	Defined Benefit Pension Plan		Retiree Welfare Benefit Plan	
(in thousands of dollars)	2022	2021	2022	2021
Amounts recognized in unrestricted net assets without donor restrictions consist of:				
Net actuarial (gain)	$ (165,162)	$ (729,003)	$ (310,417)	$ (438,748)
Prior service cost	2,597	2,943	14,308	-
Total cumulative amounts recognized in net assets without donor restrictions	**$ (162,565)**	**$ (726,060)**	**$ (296,109)**	**$ (438,748)**

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 $5,074.7 million and $5,429.6 million as of June 30, 2022, and 2021, 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 $4,878.3 million and $5,131.3 million as of June 30, 2022, and 2021, respectively.

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

TABLE 21. PROJECTED BENEFIT OBLIGATIONS AND FAIR VALUE OF ASSETS

	Defined Benefit Pension Plan		Retiree Welfare Benefit Plan	
(in thousands of dollars)	2022	2021	2022	2021
Change in projected benefit obligations:				
Projected benefit obligations at beginning of year	$ 5,429,577	$ 4,829,967	$ 663,180	$ 668,473
Service cost	152,837	129,749	33,299	33,819
Interest cost	178,186	163,467	23,700	23,562
Retiree contributions	-	-	9,966	8,949
Net benefit payments, transfers, and other expenses	(185,550)	(160,548)	(42,698)	(39,151)
Employer Group Waiver Plan (EGWP) reimbursement	-	-	10,197	9,176
Plan amendments	-	890	14,308	-
Assumption changes and actuarial net (gain) loss	(500,313)	466,052	(71,903)	(41,648)
Projected benefit obligations at end of the year	5,074,737	5,429,577	640,049	663,180
Change in plan assets:				
Fair value of plan assets at beginning of the year	6,379,991	4,278,099	1,102,330	760,546
Actual return on plan assets	(736,841)	2,262,440	(127,380)	360,429
Employer contributions	-	-	-	2,381
Employer Group Waiver Plan (EGWP) reimbursement	-	-	10,197	9,176
Retiree contributions	-	-	9,966	8,949
Net benefit payments, transfers, and other expenses	(185,550)	(160,548)	(42,698)	(39,151)
Fair value of plan assets at end of the year	5,457,600	6,379,991	952,415	1,102,330
Funded status at end of the year	**382,863**	**950,414**	**312,366**	**439,150**
Amounts recognized in the Consolidated Statements of Financial Position consist of:				
Net assets	**$ 382,863**	**$ 950,414**	**$ 312,366**	**$ 439,150**

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 a number of 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)	2022	2021	2022	2021
Assumptions used to determine benefit obligation as of June 30:				
Discount rate	4.85%	3.25%	4.96%	3.47%
Rate of compensation increase	5.75%	5.50%		
Pension increases for in-payment benefits	5.25%/2.06%	1.69%		
Assumptions used to determine net periodic benefit cost for the year ended June 30:				
Discount rate	3.25%	3.36%	3.47%	3.42%
Expected long-term return on plan assets	7.75%	7.75%	7.50%	7.50%
Rate of compensation increase*	5.50%	0.00%/5.00%		
Assumed health care cost trend rates:				
Healthcare cost trend rate assumed for next year			7.00%	6.50%
Ultimate health care cost trend rate			5.25%	5.00%
Year the rate reaches the ultimate trend rate			2026	2027

* For determining fiscal 2021 benefit cost, it was assumed that there would be no salary increase or cost-of-living adjustments through 2022; normative rates apply thereafter.

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 net assets available for benefits as of June 30, 2022, and 2021, 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
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**
Fiscal Year 2021					
Cash and short-term investments	$ 298,777	$ -	$ -	$ -	$ 298,777
US Treasury	444,454	-	-	-	444,454
US government agency	-	17,996	-	-	17,996
Common equity:					
Domestic	139,135	-	74	-	139,209
Foreign	191,030	-	4,214	-	195,244
Equity:*					
Absolute return	-	-	-	939,409	939,409
Domestic	-	-	-	623,980	623,980
Foreign	-	-	-	973,895	973,895
Private	-	-	-	2,493,529	2,493,529
Real estate*	1,755	-	-	243,970	245,725
Real assets*	-	-	-	52,532	52,532
Other	-	-	850	-	850
Derivatives	(6)	-	-	-	(6)
Total plan investments assets	$ 1,075,145	$ 17,996	$ 5,138	$ 5,327,315	$ 6,425,594
Liabilities associated with investments					
Investments sold, but not yet purchased	(53,473)	-	-	-	(53,473)
Other liabilities	(1,276)	(99)	-	-	(1,375)
Total plan investment liabilities	**(54,749)**	**(99)**	**-**	**-**	**(54,848)**
Total plan investments	**$ 1,020,396**	**$ 17,897**	**$ 5,138**	**$ 5,327,315**	**$ 6,370,746**

** 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 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**
Fiscal Year 2021					
Cash and short-term investments	$ 47,922	$ -	$ -	$ -	$ 47,922
US Treasury	139,458	-	-	-	139,458
US government agency	-	5,647	-	-	5,647
Common equity:					
Domestic	24,336	-	-	-	24,336
Foreign	33,530	-	744	-	34,274
Equity:*					
Absolute return	-	-	-	179,596	179,596
Domestic	-	-	-	107,345	107,345
Foreign	-	-	-	169,879	169,879
Private	-	-	-	356,184	356,184
Real estate*	310	-	-	35,470	35,780
Real assets*	-	-	-	6,408	6,408
Other	-	-	150	-	150
Derivatives	(2)	-	-	-	(2)
Total plan investment assets	**$ 245,554**	**$ 5,647**	**$ 894**	**$ 854,882**	**$ 1,106,977**
Liabilities associated with investments					
Investments sold, but not yet purchased	(7,597)	-	-	-	(7,597)
Other liabilities	(227)	(54)	-	-	(281)
Total plan investment liabilities	(7,824)	(54)	-	-	(7,878)
Total plan investments	**$ 237,730**	**5,593**	**$ 894**	**$ 854,882**	**1,099,099**

** 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, 2022, and 2021.

TABLE 24. UNFUNDED COMMITMENTS AND REDEMPTON TERMS AND RESTRICTIONS

	2022		2021			
(in thousands of dollars)	Unfunded Commitments	Fair Value	Unfunded Commitments	Fair Value	Redemption Terms	Days Notice
Defined Benefit Pension Plan						
Equity:						
Absolute return[1]	$ 17,579	$ 772,179	$ 16,173	$ 939,409	Range from 2 months to 48 months[4]	30 to 365 days
Domestic[2]	387	438,094	396	623,980	Range from 4 months to 48 months[4]	90 to 120 days
Foreign[3]	-	672,825	-	973,895	Range from 2 months to 48 months[4]	40 to 91 days
Private	560,217	2,108,178	485,550	2,493,529	Close-ended funds not available for redemption	Not Applicable
Real estate	166,113	298,418	187,033	243,970	Close-ended funds not available for redemption	Not Applicable
Real assets	8,194	60,838	15,180	52,532	Close-ended funds not available for redemption	Not Applicable
Total	**$ 752,490**	**$ 4,350,532**	**$ 704,332**	**$ 5,327,315**		
Retiree Welfare Benefit Plan						
Equity:						
Absolute return[1]	$ 2,468	$ 137,190	$ 2,216	$ 179,596	Range from 2 months to 48 months[4]	30 to 365 days
Domestic[2]	43	71,213	44	107,345	Range from 4 months to 48 months[4]	90 to 120 days
Foreign[3]	-	118,896	-	169,879	Range from 2 months to 48 months[4]	40 to 91 days
Private	92,935	315,005	81,572	356,184	Close-ended funds not available for redemption	Not Applicable
Real estate	26,108	47,109	29,712	35,470	Close-ended funds not available for redemption	Not Applicable
Real assets	1,382	8,316	2,503	6,408	Close-ended funds not available for redemption	Not Applicable
Total	**$ 122,936**	**$ 697,729**	**$ 116,047**	**$ 854,882**		

[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 23 months.

[3]Foreign funds include funds that have remaining lock-up provisions up to 32 months.

[4] 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, 2022, and 2021, are shown in Table 25 below.

TABLE 25. PLAN INVESTMENT ALLOCATION

	Defined Benefit Pension Plan			Retiree Welfare Benefit Plan		
	2022 Target Allocation	2022	2021	2022 Target Allocation	2022	2021
Cash and short-term investments	0-10%	3%	5%	0-10%	2%	4%
Fixed income	3-13%	10%	7%	10-20%	17%	13%
Equities	41.5-88.5%	66%	68%	34-84%	60%	62%
Marketable alternatives	12-22%	14%	15%	12.5-22.5%	15%	17%
Real assets	0-6%	1%	1%	0-5.5%	1%	1%
Real estate	0.5-10.5%	6%	4%	0-8%	5%	3%
Total		**100%**	**100%**		**100%**	**100%**

Expected Future Benefit Payments

In fiscal 2023, MIT does not expect to contribute to its defined benefit pension plan or to the retiree welfare benefit plan. These contributions assume a 7.75 percent and 7.50 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, but the projection scale has been updated from Scale MP-2020.

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, 2022.

TABLE 26. EXPECTED FUTURE BENEFIT PAYMENTS

(in thousands of dollars)	Pension Benefits	Retiree Welfare Benefits*
2023	$ 198,093	$ 30,356
2024	222,675	33,544
2025	237,759	35,557
2026	251,816	37,346
2027	265,173	39,036
2028 - 2032	1,487,834	219,113

**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, 2022, and June 30, 2021, respectively. The amounts listed in the without donor restriction 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 restriction in other funds is pledges, the majority of which will be reclassified to net assets without donor restrictions when cash is received.

TABLE 27A. 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**

J. Components of Net Assets and Endowment (continued)

TABLE 27B. 2021 TOTAL NET ASSET COMPOSITION

(in thousands of dollars)	Without Donor Restrictions	With Donor Restrictions	Total
Endowment Funds			
General purpose	$ 2,378,115	$ 2,577,284	$ 4,955,399
Departments and research	1,429,232	3,835,349	5,264,581
Library	22,323	97,900	120,223
Salaries and wages	1,064,538	6,542,497	7,607,035
Graduate general	165,405	458,401	623,806
Graduate departments	344,414	1,455,519	1,799,933
Undergraduate	440,869	2,957,116	3,397,985
Prizes	17,802	101,512	119,314
Miscellaneous	2,165,381	1,340,382	3,505,763
Endowment funds before pledges	8,028,079	19,365,960	27,394,039
Pledges	-	133,165	133,165
Total endowment funds	8,028,079	19,499,125	27,527,204
Other Funds			
Student-related loan funds	18,056	32,427	50,483
Building funds	147,047	23,031	170,078
Designated purposes:			
Departments and research	482,791	-	482,791
Other purposes	288,503	28,496	316,999
Life income funds and donor-advised funds	59,311	260,542	319,853
Pledges	-	438,103	438,103
Other funds available for current expenses	4,407,074	438,913	4,845,987
Retirement benefits overfunded	1,389,564	-	1,389,564
Funds for educational plant	905,307	-	905,307
Total other funds	7,697,653	1,221,512	8,919,165
Total net assets	**$ 15,725,732**	**$ 20,720,637**	**$ 36,446,369**

MIT's endowment consists of approximately 4,600 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 making a determination 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 as of June 30, 2022, and 2021, respectively.

TABLE 28. CHANGES IN ENDOWMENT NET ASSETS

(in thousands of dollars)	Without Donor Restriction	With Donor Restriction	Total
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**
Fiscal Year 2021			
Endowment net assets, July 1, 2020	$ 5,335,973	$ 13,159,932	$ 18,495,905
Investment return:			
Net Investment income	12,244	37,062	49,306
Realized and unrealized gains/(losses)	2,867,324	6,672,003	9,539,327
Total investment return	2,879,568	6,709,065	9,588,633
Contributions	-	106,078	106,078
Appropriation of endowment assets for expenditure	(223,791)	(525,315)	(749,106)
Other changes:			
Net asset reclassifications and transfers	36,329	49,365	85,694
Endowment net assets, June 30, 2021	**$ 8,028,079**	**$ 19,499,125**	**$ 27,527,204**

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 3.1 percent, or 4.4 percent on a three-year-average basis, and 4.2 percent, or 4.5 percent on a three-year-average basis, for fiscal 2022 and fiscal 2021, 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 $90.52 and $81.80 per Pool A unit as of fiscal 2022 and fiscal 2021, 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 new borrower defense rules 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, 2022 not already included in a previous footnote are outlined in Table 29 below.

TABLE 33. FINANCIAL ELEMENTS IN THE SUPPLEMENTAL SCHEDULE NOT READILY AVAILABLE IN THE INSTITUTE'S CONSOLIDATED FINANCIAL STATEMENTS

Financial Element		**2022**
Property, plant, and equipment- pre-implementation	$	3,333,606
Property, plant, and equipment- post-implementation with outstanding debt for original purchase		177,000
Property, plant, and equipment- post-implementation without outstanding debt for original purchase		274,810
Construction in Process		724,186
Long-term debt- for long term purposes pre-implementation		3,068,447
Long-term debt- for long term purposes post-implementation		1,588,603
Net assets with donor restrictions: restricted in perpetuity		4,204,513
Unsecured related party receivables		60,451

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Massachusetts Institute of Technology
Financial Responsibility Supplemental Schedule
June 30, 2022

(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		$ 14,295,593
Consolidated Statement of Financial Position- Net Assets with donor restrictions	Net assets with donor restrictions		18,934,938
N/A	Secured and unsecured related party receivable		-
Footnote K - Unsecured related party receivables	Unsecured related party receivables		60,451
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	$ 4,686,460	
Footnote K - Property, plant, and equipment- pre-implementation	Less: Property, plant, and equipment- pre-implementation		3,333,606
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		177,000
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		451,668
Footnote K - Construction in Process	Less: Construction in Process		724,186
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		236,823
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		695,229
Footnote K - Long-term debt- for long term purposes pre-implementation and post-implementation	Long-term debt- for long term purposes	$ 4,657,050	
Footnote K - Long-term debt- for long term purposes pre-implementation	Long-term debt- for long term purposes pre-implementation		3,068,447
Footnote K - Long-term debt- for long term purposes post-implementation	Long-term debt- for long term purposes post-implementation		1,588,603
N/A	Line of credit for construction in progress		-
N/A	Lease right-of-use asset liability, net		-
N/A	Pre-implementation right-of-use asset liability		-
Consolidated Statement of Financial Position- Operating lease liability	Post-implementation lease liability		246,083
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		256,228
Footnote K - Net assets with donor restrictions: restricted in perpetuity	Less: Net assets with donor restrictions: restricted in perpetuity:		4,204,513
	Total Expendable Net Assets:		**$ 28,114,862**
Total Expenses and Losses:			
Notes to the Consolidated Financial Statements- Footnote H, Table 18 - 2022 Total	Total expenses without donor restrictions		$ 3,993,328
Consolidated Statement of Activities- Postretirement plan changes other than net periodic benefit cost	Non-operating and net investment loss		706,134
Consolidated Statement of Activities- Net return on investments	Less: Net investment losses		2,056,207
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:		**$ 2,643,255**
	Equity Ratio		
Modified Net Assets:			
Consolidated Statement of Financial Position- Net assets without donor restrictions	Net assets without donor restrictions		$ 14,295,593
Consolidated Statement of Financial Position- Net assets with donor restrictions	Net assets with donor restrictions		18,934,938
N/A	Less: Intangible assets		-
Footnote K - Unsecured related party receivables	Less: Unsecured related party receivables		60,451
	Total Modified Net Assets:		**$ 33,170,080**
Modified Assets:			
Consolidated Statement of Financial Position- Total assets	Total assets		$ 39,883,400
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		60,451
	Total Modified Assets:		**$ 39,822,949**
	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:		$ (1,430,139)
	Total Change in Net Assets Without Donor Restrictions:		**$ (1,430,139)**
Total Revenues and Gains:			
Consolidated Statement of Activities- Total Revenues, Net return on investments, Distribution of accumulated investment gains, Other changes	Total operating revenue and other gains		$ 4,528,026
	Total Revenues and Gains:		**$ 4,528,026**

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

Massachusetts Institute of Technology
Note to Financial Responsibility Supplemental Schedule
June 30, 2022

1. Basis of Presentation

The accompanying financial responsibility ratiossupplemental schedule (the "Schedule") of the Massachusetts Institute of Technology (the "Institute") provides financial information required by the Department of Education to calculate of 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, 2022. 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 consolidated 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, 2022

Federal Grantor/ Pass Through Grantor/ Program Title	Assistance Listing Number	Total $ Amount Expended	$ Amount Passed to Subrecipients
Research and Development Cluster			
U.S. Department of Defense:	12		
Air Force		$ 383,437,366	$ 38,795,658
Army		87,029,510	7,350,470
Classified		258,307,063	14,238,491
Defense Advance Research Project Agency		52,520,714	13,973,939
Missile Defense Agency		82,673,379	-
National Security Agency		16,353,397	-
Navy		82,140,757	8,236,671
Other DOD		139,376,667	3,134,584
Passthrough		46,111,122	393,838
Total Department of Defense		$ 1,147,949,975	$ 86,123,651
U.S. Department of Commerce	11	$ 10,351,426	$ 1,540,031
U.S. Department of Commerce - Passthrough	11	1,801,581	-
U.S. Department of Energy	81	66,104,029	5,052,574
U.S. Department of Energy - Passthrough	81	23,978,751	45,098
U.S. Department of Health and Human Services	93	121,003,982	16,438,421
U.S. Department of Health and Human Services - Passthrough	93	29,770,603	154,550
U.S. Department of Homeland Security	97	19,780,804	1,136,345
U.S. Department of Homeland Security - Passthrough	97	286,995	-
U.S. Department of Transportation	20	27,225,542	378,203
U.S. Department of Transportation - Passthrough	20	239,434	-
Miscellaneous Federal Government	Various	20,802,564	1,419,725
Miscellaneous Federal Government - Passthrough	Various	2,725,637	1,176,241
National Aeronautics & Space Administration	43	51,606,127	8,221,661
National Aeronautics & Space Administration - Passthrough	43	20,051,509	462,250
National Science Foundation	47	90,004,328	8,665,193
National Science Foundation - Passthrough	47	18,350,886	1,868,406
Total Research and Development Cluster	Appendix A	$ 1,652,034,173	$ 132,682,349

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, 2022

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	$ 4,450,248	
Federal Supplemental Educational Opportunity	84.007	1,875,828	
Federal Work Study	84.033	1,385,768	
Federal Perkins Loan:	84.038		
New Loans		-	
Balance Outstanding - July 1, 2021		9,090,542	
Loan Administrative Cost Allowance		-	
William D. Ford Federal Direct Loan Program:	84.268		
Direct Subsidized and Unsubsidized Loans		8,168,807	
Direct Plus Loan for Parents and for Graduate or Professional Students		12,592,665	
Total Student Financial Assistance Cluster Expenditures		$ 37,563,858	
Other Federal Expenditures:			
U.S. Department of Commerce	Appendix B	$ 101,850	$ -
U.S. Department of Commerce - Passthrough	Appendix C	177,192	-
U.S. Department of Defense	Appendix B	3,122,520	1,160,017
U.S. Department of Defense - Passthrough	Appendix C	5,931,671	-
U.S. Department of Energy	Appendix B	199,745	20,020
U.S. Department of Energy - Passthrough	Appendix C	261,295	-
U.S. Department of Health and Human Services	Appendix B	20,454	
U.S. Department of Health and Human Services - Passthrough	Appendix C	-	-
U.S. Department of Homeland Security	Appendix B	-	-
U.S. Department of Transportation	Appendix B	(75)	-
Miscellaneous Federal Government	Appendix B	9,639,532	-
Miscellaneous Federal Government - Passthrough	Appendix C	651,620	-
National Aeronautics & Space Administration	Appendix B	2,233,324	4,617
National Aeronautics & Space Administration - Passthrough	Appendix C	425,801	-
Total Other Federal Expenditures		$ 22,764,929	$ 1,184,654
Total Federal Expenditures		$ 1,712,362,960	$ 133,867,003

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, 2022

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, 2022. 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 the 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 2020 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, 2022

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, 2022 is $7,528,440.

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.

Appendix A
Massachusetts Institute of Technology
Schedule of Expenditures of Federal Awards - Worksheet
Federal Research Support
FY 22 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	$ 27,083,823	$ 356,353,543	$ 1,412,931	$ 12,446,623	$ 397,296,920
Army	20,748,179	66,281,331	1,189,486	6,683,411	94,902,407
Classified	-	258,307,063	-	-	258,307,063
Defense Advanced Research Project Agency	22,886,656	29,634,058	69,997	11,868,103	64,458,814
Missile Defense Agency	-	82,673,379	4,558	-	82,677,937
National Security Agency	-	16,353,397	-	-	16,353,397
Navy	17,859,399	64,281,358	651,643	6,747,046	89,539,446
Other Department of Defense	1,193,870	138,182,797	468,498	4,568,826	144,413,991
Total Department of Defense	89,771,927	1,012,066,926	3,797,113	42,314,009	1,147,949,975
Department of Commerce	2,611,016	7,740,410	374,236	1,427,345	12,153,007
Department of Energy	59,937,763	6,166,266	1,794,227	22,184,524	90,082,780
Department of Health & Human Services	121,003,982	-	1,958,083	27,812,520	150,774,585
Department of Homeland Security	79,538	19,701,266	-	286,995	20,067,799
Department of Transportation	3,117,882	24,107,660	87,460	151,974	27,464,976
Miscellaneous Federal Government:					
Department of Agriculture	92,430	-	-	40,891	133,321
Department of Education	252,409	-	-	-	252,409
Department of Interior	1,070,547	-	-	569,417	1,639,964
Other	4,055,699	15,331,479	-	2,115,329	21,502,507
Total Miscellaneous Federal Government	5,471,085	15,331,479	-	2,725,637	23,528,201
Nat'l Aeronautics & Space Administration	25,645,169	25,960,958	8,024,545	12,026,964	71,657,636
National Science Foundation	90,004,328	-	755,446	17,595,440	108,355,214
Total Federal Sponsors	**$ 397,642,690**	**$ 1,111,074,965**	**$ 16,791,110**	**$ 126,525,408**	**$ 1,652,034,173**

Note for Appendices A-1, A-3, B and C details:
- Contracts without Assitance Listing ("AL") numbers were shown as ".RD" in the Assitance 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 2022 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	-14,271	-
Air Force	FA8750-17-2-0126	Human Data Interaction Project	12.300	-8,034	-
Air Force	FA8750-19-2-1000	AI Accelorator	12.300	3,376,407	-
Air Force	FA8750-19-2-1000	COVID-19: AI Accelorator	12.300	10,635,052	-
Air Force	FA8750-20-2-1007	Integration of Strong Second-order Nonlinearities with Large-Scale Silicon Photonics	12.300	165,833	-
Air Force	FA2386-20-1-4070	COVID-19: Developing graphene Josephson microwave single-photon detector for quantum information science	12.800	72,823	-
Air Force	FA2386-20-1-4070	Developing graphene Josephson microwave single-photon detector for quantum information science	12.800	13,227	-
Air Force	FA2386-21-1-4058	Novel Topological and Qubit Materials Platforms Created by Engineered hBN Substrates	12.800	58,868	-
Air Force	FA9550-14-1-0035	(MURI) Advanced Quantum Material - A New Frontier for Ultracold Atoms	12.800	956	956
Air Force	FA9550-15-1-0514	(MURI) FATE: Foldable and Adaptive Two-Dimensional Electronics	12.800	179,448	44,588
Air Force	FA9550-16-1-0324	Quantum Gas Microscopy of Strongly Correlated Fermions	12.800	80,710	-
Air Force	FA9550-16-1-0382	COVID-19: Quantum Optoelectronics and Plasmonics with Novel Van der Waals Heterostructures	12.800	8,563	-
Air Force	FA9550-17-1-0081	The Marvin Minsky Institute for Society of Mind Theory	12.800	-8,589	-
Air Force	FA9550-17-1-0165	Learning to Plan in Hybrid Spaces	12.800	300,606	-
Air Force	FA9550-17-1-0192	Spontaneous Computation in Chemical Systems	12.800	132,986	-
Air Force	FA9550-17-1-0288	(YIP) DNA-Programmed Epitaxy of Nanoparticle Superlattices	12.800	-73,699	-
Air Force	FA9550-17-1-0362	User Interaction for Teaming with Autonomous Systems	12.800	11,424	-
Air Force	FA9550-17-1-0383	DURIP grant proposal Laser system for entangled-state generation in large atomic ensembles for measurements below the standard quantum limit	12.800	-1,440	-
Air Force	FA9550-18-1-0023	Coupling in Uncertain Multi-physics Systems	12.800	14,356	-
Air Force	FA9550-18-1-0341	COVID-19: Low Bandgap, Highly Polarizable, and Intrinsically Conductive Polymers	12.800	12,866	-
Air Force	FA9550-18-1-0436	COVID-19: (MURI) Empty State Electronics	12.800	1,564,487	578,180
Air Force	FA9550-19-1-0048	(YIP) Harnessing Magnons for Hybrid Quantum Information Systems	12.800	55,934	-

Appendix A1
Massachusetts Institute of Technology
Federal Research Support - On Campus
FY 2022 Expenditures

Federal Agency	Government Contract Number	Master Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
Air Force	FA9550-19-1-0063	(YIP) Competing Orders in Nanostructured High-Tc Superconductors	12.800	116,053	-
Air Force	FA9550-19-1-0065	(YIP) On-Chip PHz Processing of Optical Fields using Nanostructured Electron Emitters	12.800	51,600	-
Air Force	FA9550-19-1-0104	Electro-Active Polymers for Robust and Flexible Electrospray Propulsion	12.800	175,588	-
Air Force	FA9550-19-1-0240	COVID-19: Scalable accelerated algorithms for exascale simulation and optimization/deep learning	12.800	226,651	-
Air Force	FA9550-19-1-0240	Scalable accelerated algorithms for exascale simulation and optimization/deep learning	12.800	143,712	-
Air Force	FA9550-19-1-0263	Building Attack Resilience into Complex Networks: Deterrence, Inspection, and Recovery	12.800	166,757	-
Air Force	FA9550-19-1-0269	Learning to Learn Concepts as Programs: Hierarchical Bayes and Amortised Inference	12.800	393,289	-
Air Force	FA9550-19-1-0319	Structured Assignment: Geometric Optimization Algorithms for Large-Scale Matching	12.800	66,892	-
Air Force	FA9550-19-1-0381	COVID-19: Physics and Management of Aerothermal-Mechanical Interactions for Enabling Robust Operation of Thermal System	12.800	95,039	-
Air Force	FA9550-19-1-0381	Physics and Management of Aerothermal-Mechanical Interactions for Enabling Robust Operation of Thermal System	12.800	52,630	-
Air Force	FA9550-19-1-0392	High Performance Area-Enhanced Hierarchical Evaporator for Extreme Thermal Management	12.800	131,322	-
Air Force	FA9550-20-1-0044	Design of robust and accurate biosensing systems in living cells	12.800	235,638	-
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	206,203	-
Air Force	FA9550-20-1-0105	Multiplexed Quantum Repeaters for High-Speed Quantum Networks	12.800	267,357	154,178
Air Force	FA9550-20-1-0113	COVID-19: Development of a Photonic Field-Programmable Gate Array (pFPGA) for Software-Controlled Photonics	12.800	68,540	-
Air Force	FA9550-20-1-0115	COVID-19: Topological photonics for enabling high-power lasers	12.800	49,863	-
Air Force	FA9550-20-1-0115	Topological photonics for enabling high-power lasers	12.800	159,004	-
Air Force	FA9550-20-1-0163	COVID-19: Short Range Order and Electronic Entropy: from Melts to Solids	12.800	30,996	-
Air Force	FA9550-20-1-0163	Short Range Order and Electronic Entropy: from Melts to Solids	12.800	60,578	-
Air Force	FA9550-20-1-0291	(PECASE) Guiding Thermal Catalytic Reactions with Interfacial Electric Fields	12.800	93,744	-
Air Force	FA9550-20-1-0402	COVID-19: Invisible Hardware Speculation: A Comprehensive and Efficient Defense Solution Against Speculative Side Channel Attacks	12.800	97,954	-

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Federal Agency	Government Contract Number	Master Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
Air Force	FA9550-20-1-0402	Invisible Hardware Speculation: A Comprehensive and Efficient Defense Solution Against Speculative Side Channel Attacks	12.800	76,822	-
Air Force	FA9550-20-1-0429	Shock Propagation through Architectured PrintCast Composites	12.800	38,440	-
Air Force	FA9550-21-1-0003	End-User Programming for Human-Machine Teaming	12.800	154,466	-
Air Force	FA9550-21-1-0014	The Marvin Minsky Institute for Society of Mind Theory	12.800	401,393	-
Air Force	FA9550-21-1-0058	(MURI) Prediction, Statistical Quantification and Mitigation of Extreme Events Caused by Exogenous Causes or Intrinsic Instabilities	12.800	111,380	52,540
Air Force	FA9550-21-1-0319	Topological Quantum Electronics and Optoelectronics in Moiré Superlattices	12.800	291,938	90,356
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	127,660	-
Air Force	FA9550-22-1-0024	Atomically precise exfoliation of single-crystalline oxide thin-films and its pyroelectric properties	12.800	14,871	-
Air Force	FA9550-22-1-0032	Ultrahigh Energy Electrochemical Power Systems Based on Safe Fluorinated Reactants	12.800	24,070	-
Air Force	FA9550-22-1-0051	New Electronic Topologies in Organic Electronic Materials	12.800	138,156	-
Air Force	FA9550-22-1-0066	Thermal transport in ultracold topological quantum matter	12.800	45,145	-
Air Force	FA9550-22-1-0166	Natural and Synthetic Non-Hermitian Quantum Materials	12.800	109,404	-
Air Force	FA9550-22-1-0207	Dissecting the physical principles that control the spatial organization of intracellular signaling	12.800	43,810	-
Air Force	FA9550-22-1-0249	Robust state estimation, information gathering, and behavior for autonomous systems in complex uncertain domains	12.800	2,628	-
Air Force	FA8650-17-1-7713	Visible Integrated Photonics Enhanced Reality (VIPER)	12.910	0	-
Air Force	FA8650-19-2-7921	Discrete Integrated Circuit Electronics	12.910	226,993	-
Air Force	FA8650-20-2-2002	COVID-19: Enhanced Computational Aircraft Prototype Syntheses (EnCAPS)	12.910	13,971	13,971
Air Force	FA8650-20-2-2002	Enhanced Computational Aircraft Prototype Syntheses (EnCAPS)	12.910	866,929	306,279
Air Force	FA8650-21-2-7120	Ingestible Transceiver-Actuatable Resident Gastrointestinal bioElectronic Therapeutic for Travelers Diarrhea (iTARGET-TD)	12.910	3,888,346	127,570
Air Force	FA8650-17-C-9113	Nanoscale X-ray Tomosynthesis for Rapid Assessment of IC Dice (NXT-RAID)	12.RD	250,751	-
Air Force	FA8750-17-C-0229	Genetic circuit design for extreme environments enabled by models extracted from petabyte-scale perturbation analyses	12.RD	598,188	217,529
Air Force	FA8750-17-C-0239	BayesDB for Data-Centric Scientific Discovery	12.RD	190,543	-
		Total for Air Force		**27,083,823**	**1,586,148**

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Federal Agency	Government Contract Number	Master Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
Army					
Army	W81XWH-14-1-0240	Extracellular Matrix Biomarkers for Diagnosis, Prognosis, Imaging and Targeting	12.420	136,413	-
Army	W81XWH-17-1-0427	Connecting Mechanical to Biomechanical Performance of Prosthetic Feet to Design Customized Passive Devices that Provide Improved Mobility	12.420	16,171	19,846
Army	W81XWH1810515	Investigating the Oligomerization of TorsinA as a Means to Develop DYT1 Dystonia Theraputics	12.420	364,666	-
Army	W81XWH-18-2-0010	Intravenous Hemostatic Nanoparticles to Stop Bleeding from Noncompressible and Unidentifiable Wounds	12.420	471,636	276,937
Army	W81XWH-19-1-0151	An Osseo-Neural Transtibial Prosthesis with Efferent-Afferent Neural Control	12.420	580,549	77,270
Army	W81XWH-19-1-0257	Leveraging rational nanoparticle design for improved treatment of pediatric and adolescent cancers (CA181202)	12.420	21,855	-
Army	W81XWH1910555	New avenues for neurofibromatosis therapy	12.420	-3,417	-
Army	W81XWH2010365	Do the changes of the mechanical environment in MS lesions affect myelin repair and responses of oligodendrocytes topro-myelinating drugs?	12.420	110,277	-
Army	W81XWH2010481	Cartilage Penetrating Nanocarrier-Drug Conjugate for Disease-Modifying Intervention in Post-Traumatic Osteoarthritis	12.420	173,126	-
Army	W81XWH2010661	Defining the Effects of the Liver Microenvironment on Metastatic Colon Cancer	12.420	318,174	-
Army	W81XWH2110089	On-demand angiogenesis for coronary microvascular disease in women: a synthetic biology approach	12.420	4,713	-
Army	W81XWH2110235	Delivery of pro-angiogenesis anti-miRs from electrostatically-assembled bandages for diabetic ulcers	12.420	63,764	-
Army	W81XWH-21-1-0245	Metabolomics to Identify Targets in ALS	12.420	268,187	-
Army	W81XWH2110283	Interrogation of requisite niche factors for leukemia cell survival at single cell resolution	12.420	302,807	-
Army	W81XWH2110439	Strain-Programmable Bioadhesive Patch for Accelerated Healing of Diabetic Ulcer	12.420	139,300	-
Army	W81XWH2110626	Rewiring suppressive tumor microenvironment signals for immune activation using T cells engineered with synthetic promoters	12.420	221,982	-
Army	W81XWH2110699	Elucidating the Mechanisms of Spotted Fever Group Rickettsia Pathogenesis	12.420	226,803	-
Army	W81XWH2110934	Partnering with patients to create a rare soft tissue sarcoma functional genomics platform as a community resource	12.420	295,737	-
Army	W911NF-11-1-0400	Multi-Qubit Enhanced Sensing and Metrology	12.431	804,129	331,507
Army	W911NF-13-D-0001, T.O. 8	ISN 3 FY'13 funding	12.431	677,301	-

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Federal Agency	Government Contract Number	Master Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
Army	W911NF-13-D-0001, T.O. 9	ISN 3 FY'13 funding	12.431	105,387	-
Army	W911NF-16-1-0034	Coupled Synthesis, Transport, and Magnetization Studies to Detect New Topological Phases	12.431	120,174	-
Army	W911NF-16-1-0440	Research Area 2.1: Fluid-Driven Sediment Transport: A first-principles approach joining geological observations and granular-fluid physics	12.431	58,470	-
Army	W911NF-17-1-0435	High-Quality Tunable Graphene Plasmonic Metamaterials	12.431	14,980	-
Army	W911NF-17-1-0508	10.1.2:10.1.1: Low Latency Wireless Networks for Mission Critical Communications	12.431	37,835	-
Army	W911NF-17-1-0521	Polymer Chemistry: Uniform chiral polymers by IEG: synthesis and assembly	12.431	-12,006	-
Army	W911NF-17-1-0527	Quantum Machine Learning	12.431	487,706	-
Army	W911NF-18-1-0116	Improving Qubit Performance with Advanced, Novel, & Emerging Materials and Architectures	12.431	426,005	-
Army	W911NF-18-1-0118	Rheological Interaction Physics of Wheeled Locomotion in Soft Substrates for Improved Mobility: MIT Component	12.431	38,316	-
Army	W911NF-18-1-0407	Towards a Theory of Large-Scale Human Interactions	12.431	53,297	-
Army	W911NF1810411	High Performance Superconducting Qubit Technology Engineering Research (HiPSTER)	12.431	612,063	140,397
Army	W911NF1810432	Ab-Initio Solid-State Quantum Materials: Design, Production, and Characterization at the Atomic Scale	12.431	1,385,295	985,139
Army	W911NF-18-2-0048	ISN 4 Collaborative Agreement Core 6.1 Funding	12.431	2,211,323	-
Army	W911NF-19-1-0057	Higher-order geometry and topology of complex networks W911NF-17-S-0002	12.431	294,692	222,897
Army	W911NF-19-1-0098	Parametrized Model Order Reduction for Engineered Coastal and Hydraulic Systems: Component Libraries and Digital Twins	12.431	62,758	-
Army	W911NF1910156	DURIP: A Wireless Networking Testbed for Low Latency Mission Critical Communications	12.431	21,169	-
Army	W911NF-19-1-0217	Foundations of Decision Making with Behavioral and Computational Constraints	12.431	1,501,145	485,504
Army	W911NF-19-1-0275	Theoretical Investigation of Mechanically Coupled Chemical Kinetics and Phase Transitions in Energetic Materials	12.431	192,613	-
Army	W911NF-19-1-0311	Research Area 7.2: Catalyzing High Potential Redox of Inert Molecules	12.431	50,059	-
Army	W911NF-19-1-0322	Computation and Statistics in High-dimensional Problems of Autonomy	12.431	197,102	-
Army	W911NF-19-1-0481	Development of Methods for Continuous-Variable Quantum Computing with Trapped-Ion	12.431	2,567	1,846

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Federal Agency	Government Contract Number	Master Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
Army	W911NF1910517	Efficient light-matter interfaces for Rydberg arrays and entanglement in topological quantum networks	12.431	174,885	134,396
Army	W911NF1920065	Understanding of non-covalent interactions at electrified interfaces for energy conversion and storage - KCI-MR-1: Materials for Soldier and Platform Power Systems	12.431	9,989	-
Army	W911NF1920098	Mechanics and Design of Triply Periodic Minimal Surfaces	12.431	99,211	-
Army	W911NF1920117	Structural Robotics	12.431	55,282	-
Army	W911NF1920124	COVID-19: More Powerful Analysis of Complex, Multiplatform, Adaptive Systems Using System Theory-- CCE-AA-6 Complex Adaptive Systems Analysis	12.431	285,177	-
Army	W911NF1920211	Expression of Recombinant Products with Butyrylcholinesterase (BChE) Activity in Pichia pastoris.	12.431	583,272	-
Army	W911NF-20-1-0037	Metastable Quibits in Multi-Ion Systems	12.431	1,038,002	774,336
Army	W911NF-20-1-0074	Investigation of Interface Exchange Coupling Between Two Quantum Systems: Research Instrumentation for Physical Property Characterizations	12.431	14,507	-
Army	W911NF2010084	Ultrafast Spatial Light Modulation by Optical Control	12.431	45,073	-
Army	W911NF2010100	Precursors for Partially Observed Systems and Applications to Unsteady Flow Separation Events	12.431	92,904	-
Army	W911NF-20-1-0168	Geometric Approaches to Near-Optimization	12.431	155,657	-
Army	W911NF2020061	Investigation of Interface Exchange Coupling Between Two Quantum Systems	12.431	137,192	-
Army	W911NF20F0026, T.O. 10	ISN 3 FY'13 funding	12.431	-828	-
Army	W911NF2110054	YIP: Elucidating the Role of Flash Heating in Ultrasonic Powder Compaction	12.431	127,287	-
Army	W911NF2110095	Geometry Processing Summer Institute 2021	12.431	22,181	-
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	146,829	-
Army	W911NF-21-1-0174	Ultrafast Ti:Sapphire amplifier for studying Floquet-Bloch states in novel quantum materials	12.431	321,254	-
Army	W911NF-21-1-0178	Listening to the Bioelectronic Signature of Cells	12.431	59,999	21,450
Army	W911NF2110293	The Geometry of Single-and MultiObjective Near-Optimization	12.431	228,379	-
Army	W911NF2110328	Rethinking Reinforcement Learning with Astrocyte-Neuron Computations	12.431	363,277	26,223
Army	W911NF2110332	The dynamic evolution of helicity and twist, and their role in vortex instabilities	12.431	91,032	-
Army	W911NF2120099	Photonics Circuits for Compact Room-temperature Nodes for Quantum Networks	12.431	101,867	-

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Federal Agency	Government Contract Number	Master Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
Army	W911NF2120109	SBIML 2.0: Synthetic Biology Inspired Machine Learning	12.431	347,900	-
Army	W911NF2120159	An integrated experimental, computational and statistical learning approach for highly reversible bulk polycrystalline shape memory ceramics	12.431	123,001	-
Army	W911NF2210023	Advanced vad der Waals Qubits and Control	12.431	23,548	-
Army	W911NF2210024	Laser systems for quantum simulations of many-body physics with ultracold atoms	12.431	48,315	-
Army	W911QY2220003	Electrochemical biosensors to detect waterborne contaminants	12.431	6,320	-
Army	W911NF1810436	Assessment of Nanoparticle Assemblies for Efficient Gene Therapy Vehicles	12.630	-14	-
Army	W911NF2120150	Semantic Scene Perception and Active Planning for Navigation through Complex Vegetation	12.630	276,847	-
Army	W911NF-16-2-0023	Automated System for Knowledge-based Continuous Organic Synthesis (ASKCOS)	12.910	-11,089	-
Army	W911NF-17-2-0043	An Osseointegrated Transfemoral Prosthesis Offering Long-Term Bi-Directional Efferent-Afferent Neural Transmission	12.910	103,405	71,284
Army	W911NF-19-1-0511	Rotating Sensing with Superfluid Quantum Gases	12.910	166,505	17,552
Army	W911NF2120041	Super Headlights: Superconducting Nanowire Detectors for Passive Infrared Sensing	12.910	1,023,708	412,815
Army	W911NF-13-D-0001, T.O. 1	ISN 3 FY'13 funding	12.RD	313,091	-
Army	W911NF-13-D-0001, T.O. 2	ISN 3 FY'13 funding	12.RD	564,099	-
Army	W911SR20C0031	Biotemplated carbon nanofibers for the broad-spectrum removal of chemical threats	12.RD	554,993	-
		Total for Army		**20,748,179**	**3,999,401**
DARPA					
DARPA	HR00111720029	Large-scale, Reconfigurable and Multifunctional 2.5-D Conformal Optics	12.910	230,607	191,683
DARPA	HR00111920025	Rethinking molecular design: Deep integration of AI, physical chemistry, and HTE	12.910	1,815,041	-
DARPA	HR00112020013	Active Learning and Regeneration of Software Components for Cybersecurity	12.910	201,741	-
DARPA	HR0011-20-2-0049	COVID-19: Oxidation of mixed plastic to dicarboxylic acids and subsequent conversion to high-value products with engineered microbes	12.910	100,133	42,103
DARPA	HR0011-20-2-0049	Oxidation of mixed plastic to dicarboxylic acids and subsequent conversion to high-value products with engineered microbes	12.910	2,143,751	1,472,183
DARPA	HR00112110002	Active learning of nonlinear operators for forecasting extreme and rare events	12.910	61,440	-

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Federal Agency	Government Contract Number	Master Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
DARPA	HR0011-21-2-0001/HR0011048983	High-performance Portable Atmospheric Water Extractor for Extreme Climates	12.910	1,496,809	661,782
DARPA	HR00112120008	GRAND: Guessing Random Additive Noise Decoding	12.910	820,370	248,156
DARPA	FA8750-20-C-0075	Performance-Driven Design Synthesis	12.RD	1,060,739	-
DARPA	HR0011-15-C-0084	The MIT-Broad Foundry: TA2	12.RD	406,779	392,779
DARPA	HR0011-18-3-0006	Revolutionizing Computing Systems through Dense and Fine-grained Monolithic 3D Integration	12.RD	10,840,084	9,838,630
DARPA	HR0011-19-9-0021	Decision Making via Hierarchy of Network Games: Algorithms, Game Theory, Artificial Intelligence, and Learning	12.RD	62,725	-
DARPA	HR00111990057	Acquiring language like children by grounding semantic parsing	12.RD	-3,339	-
DARPA	HR00112090016	PAPPA	12.RD	231,262	-
DARPA	HR00112090017	High-Performance Productivity and Portability with Domain Specific Languages	12.RD	155,850	41,757
DARPA	HR00112090081	Novel vacuum-fluctuation based light sources from visible to X-Ray frequencies	12.RD	42,326	-
DARPA	HR001120C0015	Guaranteed Robust Artificial InteLligence (GRAIL)	12.RD	1,629,602	415,251
DARPA	HR001120C0191	COVID-19: Cross-Scale Capability Runtime Monitoring and Reconfiguration	12.RD	170,084	83,644
DARPA	HR001120C0191	Cross-Scale Capability Runtime Monitoring and Reconfiguration	12.RD	599,608	341,520
DARPA	HR00112190069/HR0011152825	Quantum annealing for machine learning	12.RD	433,637	244,451
DARPA	HR00112290029 / PO# HR0011256532	Quantification of extreme weather events and their future changes using Physics-Informed DeepONet modeling and functional priors	12.RD	50,649	-
DARPA	HR00112290087	Novel Sulfidation, Separation and Recovery of Critical Metals	12.RD	63,132	-
DARPA	HR0112090066	DIM3: Discrete Inverse Methods for Multiphysics Modeling	12.RD	273,628	-
		Total for DARPA		**22,886,656**	**13,973,939**
Navy					
Navy	HQ00341910002	Investigation of Leading Indicators for Systems Engineering Effectiveness in Model-Centric Programs	12.300	12,811	-
Navy	HQ00342010008	Phase 2: Investigation of Leading Indicators for Systems Engineering Effectiveness in Model-Centric Programs	12.300	-3,992	-
Navy	N00014-15-1-2460	Computational Wave Hydromechanics in Support of Model Tests in The MASK Wave Basin	12.300	13	-
Navy	N00014-15-1-2622	Investigating flow features near abrupt topography in the Mariana Basin	12.300	-9,194	-
Navy	N00014-15-1-2626	High-Order Multi-Resolution Multi-Dynamics Modeling for FLEAT	12.300	9,353	-
Navy	N00014-16-1-2090	Time-Resolved Measurement of Physical and Chemical Evolution of Energetic Materials Under Dynamic Shock Loading	12.300	9,262	-

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Federal Agency	Government Contract Number	Master Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
Navy	N00014-16-1-2141	Design and Operation of Efficient and Secure Navigation Networks	12.300	63,400	-
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	2,301	-
Navy	N00014-16-1-2815	Quantum simulators with ultracold atoms - mapping out possibilities for new materials	12.300	1,295	-
Navy	N00014-16-1-2945	Incorporating Distributed Systems in Early-Stage Set-Based Design of Navy Ships	12.300	35,436	-
Navy	N00014-16-1-3116	Mapping the spatio-temporal dynamics of perception in the human brain	12.300	213,011	-
Navy	N00014-16-1-3163	A New Paradigm for Analysis of Complex, Networked, Social and Engineering Systems	12.300	124,250	-
Navy	N00014-17-1-2072	Context and Task-aware Active Perception for Multiagent Systems	12.300	280,969	69,636
Navy	N00014-17-1-2147	Statistical Learning Theory of Complex Causal Models	12.300	87,857	-
Navy	N00014-17-1-2186	Observational Benchmarks for BSION project	12.300	113,404	-
Navy	N00014-17-1-2197	A Unified Approach to Passive and Active Ocean Acoustic Waveguide Remote Sensing	12.300	-6,744	-
Navy	N00014-17-1-2257	Topologically Protected Quantum States in Superfluid Fermi Gases	12.300	0	-
Navy	N00014-17-1-2474	Environmentally Adaptive Acoustic Communication and Navigation in the new Arctic	12.300	-2,559	-
Navy	N00014-17-1-2609	Hierarchical Nanoscale Materials Programmed using Structured DNA Nanoparticles	12.300	-3	-
Navy	N00014-17-1-2670	Vision-based Agile Autonomous Navigation in Contested Environments using High-Performance Embedded Computing	12.300	-235,967	-
Navy	N00014-17-1-2791	High-Dimensional Causal Prediction	12.300	-1,266	-
Navy	N00014-17-1-2883	Complex Two-Dimensional Materials for Emergent Electronics	12.300	-5,847	-
Navy	N00014-17-1-2920	Multi-Sensing Multi-Active Nanocomposite Coating for Quantitatively Characterizing Foulant-Surface Interactions and Controlled Fouling Release	12.300	-484	-
Navy	N00014-17-1-2956	Computer-aided design of functional transition metal complexes	12.300	53,321	-
Navy	N00014-17-1-2977	Bridging the Nano-Macro gap for 3D Optical/Multi-functional Metamaterials	12.300	121,177	-
Navy	N00014-17-1-2985	Support Vector Machine Learning in Marine Hydrodynamic	12.300	32,447	-
Navy	N00014-18-1-2066	Optical Breakdown Acoustic Sources for Broadband Underwater Sensing	12.300	173	-
Navy	N00014-18-1-2085	ONR Graduate Traineeship Special Research Award in Ocean Acoustics Program for Daniel Michael Duane	12.300	-1	-
Navy	N00014-18-1-2122	Online Optimization and Learning in a Complex Environment	12.300	189,184	-

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Federal Agency	Government Contract Number	Master Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
Navy	N00014-18-1-2177	Fin-based Structures for Increasing Linearity in GaN Transistors	12.300	-52,686	-
Navy	N00014-18-1-2210	Mathematical Certification of Mission Success Robustness for Multi-Agent Dynamic Group Action Models with Imperfect Perception	12.300	304,117	-
Navy	N00014-18-1-2258	Epitaxial Growth of Structural Proteins into Hierarchical Mesostructured Materials	12.300	-1,603	-
Navy	N00014-18-1-2284	Tracking hydrogen: A multi-scale experimental-computational study of hydrogen influence on dislocations, plasticity, damage	12.300	81,831	-
Navy	N00014-18-1-2298	Combinatorial Statistical Inference with Mathematical Optimization	12.300	26,681	-
Navy	N00014-18-1-2378	Instrumentation To Enable Novel Real-Time Vibrational Spectroscopy Of Shocked Materials (DURIP)	12.300	45,033	-
Navy	N00014-18-1-2434	Adaptive-resolution chemical discovery strategies for precise and fast computer-aided transition metal complex design	12.300	132,411	-
Navy	N00014-18-1-2496	VAMPIRE 3: A Decentralized Platform for Acoustic Diagnostics	12.300	168,258	-
Navy	N00014-18-1-2525	An Algorithmic Theory of Robustness	12.300	-4	-
Navy	N00014-18-1-2762	Uncovering Lagrangian transport structures associated with oceanic fronts, meanders, eddies and filaments	12.300	19,760	-
Navy	N00014-18-1-2765	Robust Causal Methodology for Planning and Learning from Interventions in the Face of Uncertainty	12.300	-9,659	-
Navy	N00014-18-1-2781	Four-Dimensional Lagrangian Analysis, Numerics, and Estimation Systems (4D-LANES)	12.300	133,187	-
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	476,294	-
Navy	N00014-18-1-2832	Technical Proposal: Task-Aware Non-Gaussian Perception and Planning for Distributed Marine Autonomy	12.300	202,950	-
Navy	N00014-18-1-2847	Integration of Physical Domain Knowledge and Machine Learning	12.300	303,009	-
Navy	N00014-18-1-2878	Complex Smart Colloids	12.300	353,683	-
Navy	N00014-18-1-2894	Data-Driven Non-Line-of-Sight Imaging	12.300	13,863	-
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	526,567	79,605
Navy	N00014-19-1-2114	Synthesis Genome for Novel Oxides: Accelerating Realization of Advanced Materials	12.300	138,657	-
Navy	N00014-19-1-2180	Algorithms for Distributed and Asynchronous Load Balancing in Multi-Objective Optimization for Robot Autonomy	12.300	87,707	-
Navy	N00014-19-1-2307	Thermal Management Technologies for Low-Temperature Undersea Dive Persistence: a Novel Arctic Diving Suit	12.300	450	-

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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	89,613	-
Navy	N00014-19-1-2325	Wireless Communication through the Water-Air Interface	12.300	211,210	-
Navy	N00014-19-1-2344	DURIP: Combinatorial DNA nanoparticle libraries for structural biology and materials research	12.300	4,873	-
Navy	N00014-19-1-2359	High Current Experimental and Modeling Targeting Large Scale, Safe, Reliable and Cost-Effective Lithium Ion Battery Systems	12.300	-23,950	-
Navy	N00014-19-1-2362	Enabling Crowd-Scale Deliberation For Complex Problems	12.300	103,433	-
Navy	N00014-19-1-2375	Materials By Design: Rational Modeling, Optimization and Synthesis of Heterogeneous Materials	12.300	165,688	-
Navy	N00014-19-1-2584	Towards more biologically plausible learning in neural networks	12.300	245,157	-
Navy	N00014-19-1-2605	The Integrated Sea Ice Dynamic Experiment (SIDEx)	12.300	58,793	-
Navy	N00014-19-1-2607	The Integrated Sea Ice Dynamics Experiment (SIDEx)	12.300	27,821	-
Navy	N00014-19-1-2631	Analog Quantum Computing with a Molecular Quantum Gas Microscope	12.300	583,655	-
Navy	N00014-19-1-2664	Dynamic Environmental Estimation, Prediction, and Acoustic Inference (DEEP-AI)	12.300	181,593	-
Navy	N00014-19-1-2665	Data Driven Methods for Structure Learning in Underwater Acoustic Modeling	12.300	344,167	-
Navy	N00014-19-1-2693	Interdisciplinary Nonlinear Bayesian Data Assimilation	12.300	49,273	-
Navy	N00014-19-1-2716	Assessing Realism and Uncertainties in Navy Decision Aids	12.300	126,235	-
Navy	N00014-19-1-2724	Network Science for Time-Critical Missions: Inference, Control, Learning, and Decision Making	12.300	353,600	-
Navy	N00014-19-1-2741	Environmentally Adaptive Autonomy for Under-Ice Acoustic Navigation and Communication	12.300	168,953	6,240
Navy	N00014-20-1-2023	Machine Learning for Submesoscale Characterization, Ocean Prediction, and Exploration (ML-SCOPE)	12.300	1,395,901	866,457
Navy	N00014-20-1-2035	A Unified Approach to Passive and Active Ocean Acoustic Waveguide Remote Sensing	12.300	558,392	-
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	238,367	-
Navy	N00014-20-1-2084	Synthetic Nucleic Acid Nanoparticles for RNA Structural & Synthetic Biology	12.300	227,194	18,588
Navy	N00014-20-1-2119	Management and Control of Highly-Dynamic Tactical Networks in Disruptive Environments	12.300	247,344	-
Navy	N00014-20-1-2150	A database for functional transition metal complex discovery	12.300	185,527	-
Navy	N00014-20-1-2202	DURIP: Expansion of Combinatorial DNA Nanoparticle Libraries for Materials Research & Structural Biology	12.300	11,121	-

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Federal Agency	Government Contract Number	Master Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
Navy	N00014-20-1-2221	Searching for new aluminum/gallium and electrolyte combinations for high-energy energy generation systems	12.300	82,050	-
Navy	N00014-20-1-2280	Synthesis Genome for Inorganic Materials: Case Oriented Proposal	12.300	46,925	-
Navy	N00014-20-1-2300	Nano-Curing Embedded Heaters for Extreme Performance of Sea-based Airframe Structures	12.300	139,221	-
Navy	N00014-20-1-2306	Interface Exchange and Topology Driven Quantum Properties in 2D systems	12.300	352,476	-
Navy	N00014-20-1-2336	Mathematical Foundations of Modern Learning Problems	12.300	113,652	-
Navy	N00014-20-1-2353	Dashboard Maintenance and Tactical Decision Aid	12.300	5,325	-
Navy	N00014-20-1-2366	Physics-informed, machine learning methods for the quantification of extreme ocean events for naval vessels	12.300	31,388	-
Navy	N00014-20-1-2394	Optimization, Federated learning, and high dimensional statistics for large-scale machine learning	12.300	229,161	-
Navy	N00014-20-1-2428	Optical-transition atomic clock beyond the standard quantum limit	12.300	378,871	-
Navy	N00014-20-1-2531	Underwater Backscatter Networking	12.300	372,024	-
Navy	N00014-20-1-2532	Lightweight representations for decentralized learning in data-rich environments	12.300	288,942	-
Navy	N00014-20-1-2533	Secure and Resilient Soft Real-Time Cyber-Physical Systems	12.300	58,137	-
Navy	N00014-20-1-2561	Understanding Extreme Response and Damage of Biological Materials	12.300	173,865	-
Navy	N00014-20-1-2589	Developing next generation AI vision systems by characterizing and exploiting untapped primate visual processing circuit motifs	12.300	857,701	266,084
Navy	N00014-20-1-2647	Research Evaporator for High-Fidelity Superconducting Circuit Fabrication	12.300	86,320	-
Navy	N00014-20-1-2749	Security Monitors for Control Systems	12.300	95,592	-
Navy	N00014-20-1-2790	CyberAlloys: Computational Design of High-Toughness Steels for Additive Manufacturing	12.300	15,363	-
Navy	N00014-20-1-2807	A proposal to enhance project New Phase Change Materials for Photonics by installing chalcogen plasma gas sources for epitaxial thin film growth	12.300	1,148	-
Navy	N00014-20-1-2826	Information Flow on Networks	12.300	218,796	-
Navy	N00014-20-1-4005	Hybrid Encoding for Singed Expressions (HESE) and Direct HESE Analog-to-Digital Converters	12.300	160,036	-
Navy	N00014-21-1-2170	Computational principles of belief system change	12.300	4,030	-
Navy	N00014-21-1-2192	Thermal Management Technologies for Low-Temperature Undersea Dive Persistence: a Novel Arctic Diving Suit	12.300	104,096	-
Navy	N00014-21-1-2195	Constrained Generative Modeling for Autonomous Molecular Discovery	12.300	210,516	-

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Federal Agency	Government Contract Number	Master Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
Navy	N00014-21-1-2280	ONR Graduate Traineeship Special Research Award in Ocean Acoustics Program for Daniel Michael Duane	12.300	90,988	-
Navy	N00014-21-1-2357	Bayesian Experimental Design with Active Learning Algorithms	12.300	17,542	-
Navy	N00014-21-1-2382	Integrated Modeling-Data-Simulation for Engineering Estimation: A Heat Transfer ParAnaLyst	12.300	77,931	-
Navy	N00014-21-1-2400	Self-damping structural materials	12.300	120,372	-
Navy	N00014-21-1-2402	Design of Environmentally Responsive Hierarchical Materials	12.300	194,556	-
Navy	N00014-21-1-2497	Furthering Technology for using Lithium Ion Batteries	12.300	353,838	-
Navy	N00014-21-1-2571	Transient Corona Discharges for Ignition and Flameholding in an Afterburner Environment	12.300	149,896	-
Navy	N00014-21-1-2573	Improving Group Decision-Making for Contentious Topics	12.300	189,358	-
Navy	N00014-21-1-2591	Natural Superlattice 2D Materials	12.300	223,754	-
Navy	N00014-21-1-2666	Molecularly Precise Gas Separations Through Site-Specific Membrane Design	12.300	251,177	-
Navy	N00014-21-1-2776	Finding a Needle in a Haystack: Utilizing Structures and Predictive Information in Online Optimization	12.300	127,835	-
Navy	N00014-21-1-2807	Leveraging Causal Structure for Prediction Across Environments	12.300	89,133	-
Navy	N00014-21-1-2831	Compression and Assimilation for Resource-limited Operations	12.300	56,096	-
Navy	N00014-21-1-2841	Statistical Learning with large parameter spaces: Interpretable Nonparametrics, Conditional Computing and Beyond	12.300	82,079	-
Navy	N00014-21-1-2880	Laser system for quantum simulation and computation with array of collective Rydberg qubits	12.300	270,813	-
Navy	N00014-21-1-2960	A Scalable Architecture to Accelerate Event-Driven Simulation	12.300	231,919	-
Navy	N00014-21-1-4013	Hierarchical Nanoscale Materials Programmed using Structured DNA Nanoparticles	12.300	316,406	-
Navy	N00014-22-1-2036	Additive Manufacturing of Functionally Graded Oxide Dispersion-Strengthened Superalloys	12.300	61,766	-
Navy	N00014-22-1-2092	Dashboard MACE with Wireless Integration	12.300	7,032	-
Navy	N00014-22-1-2116	Representation Learning as a Tool for Causal Discovery	12.300	36,819	-
Navy	N00014-22-1-2148	Tailoring the Multiscale Organization of Self-Assembled Materials via a 'Systems-Level' Approach	12.300	39,400	-
Navy	N00014-22-1-2203	Long Nanofiber Reinforcement of Bulk Ceramics for Extreme Toughness, Strength, and Multifunctionality for Naval Aviation Applications	12.300	83,118	-
Navy	N00014-22-1-2304	Laser system for a network of entangled atomic clocks	12.300	87,072	-
Navy	N00014-22-1-2326	Instrumentation for Battery Research	12.300	14,787	-
Navy	N00014-22-1-2468	Optically-Controlled GaN Power Devices	12.300	6,545	-

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Federal Agency	Government Contract Number	Master Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
Navy	N660012014028 / MIPR# HR0011047345	A Paradigm Shift in the Space Enterprise via Servicing for LEO Mega Constellations	12.910	200,027	-
Navy	N0018919PZ315	Engineering Support for the Interagency Very-Long Baseline Interferometry (VLBI) Correlator	12.RD	-4,001	-
Navy	N0018921PZ142	Engineering Support for the Interagency Very-Long Baseline Interferometry (VLBI) Correlator	12.RD	64,330	-
Navy	N66001-13-C-4025	INSCyT 2: Phase II Parent	12.RD	1,137	-
Navy	N66001-13-C-4025	Integrated and Scalable Cyto-Technologies (INSCyT) for Flexible Microbial Manufacturing	12.RD	786,881	-
Navy	N66001-16-C-4039	Novel Millimeter Wave Klystron Amplifier	12.RD	17,086	16,674
		Total for Navy		**17,859,399**	**1,323,285**
Other DOD					
Other DOD	HDTRA12110013	Robust AI-driven counter-measures: screening, guiding, combining	12.351	615,526	-
Other DOD	W911NF2120206	Development of AI Algorithms to Support Human-Robot Teams of Unmanned Marine Vehicles in Shallow Water Environments	12.431	182,287	-
Other DOD	HQ00342010032	Understanding and Re-engineering Epigenetic Cell Memory: A Theory-driven Approach	12.630	-843	-
NSA	H98230-19-C-0292	MIT Center for Quantum Engineering (MIT-CQE)	12.RD	198,334	-
Other DOD	W912HQ20C0015	Retrobiosynthetic design for renewable energetic materials	12.RD	198,567	-
		Total for Other DOD		**1,193,870**	**-**
		TOTAL for Department of Defense		**89,771,927**	**20,882,772**

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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	1,997,440	414,609
DOC	NA21OAR4170389	Coordinated Ocean Energy Expertise to Northeast Coastal Stakeholders: MIT Sea Grant	11.417	7,949	-
DOC	NA22OAR4170126	2022-2023 Sea Grant OMNIBUS	11.417	184,054	-
DOC	NA16OAR4310112	Influence of atmospheric ageing on fire-derived carbonaceous particles: laboratory studies and modeling in support of FIREX	11.431	2,471	-
DOC	NA16OAR4310177	Exploring linkages between AMOC and ITCZ variability	11.431	1,326	-
DOC	NA18OAR4310110	The aging of aerosol nitrate and implications for the global nitrogen cycle	11.431	10,196	-
DOC	NA19OAR4310180	Exploring the trend in inorganic aerosol deposition	11.431	104,972	-
DOC	NA21OAR4590170	Advancing Ensemble Subseasonal Forecasting with Machine Learning	11.459	59,407	-
DOC	NA18NWS4680058	New Frameworks for Predicting Extreme Rapid Intensification	11.468	8,485	8,485
DOC	70NANB20H014	Open Materials Metrology and Modeling (OM3)	11.609	234,714	-
		Total for Department of Commerce		**2,611,016**	**423,095**
		TOTAL for Department of Commerce		**2,611,016**	**423,095**

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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		Adv Acct: Parent of AMS-02 Research	81.049	763,197	-
DOE	DE-FC02-93ER54186	Fusion Development and Technology - Parent	81.049	1,168,521	-
DOE	DE-FG02-02ER45977	Fundamental Studies on Heat Conduction in Polymers	81.049	151,734	-
DOE	DE-FG02-03ER46076	Strongly Correlated Electronic Systems: Local Moments and Conduction Electrons	81.049	125,756	-
DOE	DE-FG02-07ER46454	Probing Excitons in Confined Environments using Photon-Resolved Methods	81.049	4,985	-
DOE	DE-FG02-07ER46474	Bimolecular Interactions in Organic Semiconductors: Hot charge, Hot excitons, Efficiency Droop, and Instability	81.049	371,396	-
DOE	DE-FG02-08ER46488	Materials Exhibiting Biomimetic Carbon Fixation and Self Repair: Theory and Experiment (Renewal)	81.049	330,584	-
DOE	DE-FG02-08ER46488	Materials Exhibiting Biomimetic Carbon Fixation and Self-Repair: Theory and Experiment	81.049	4,082	-
DOE	DE-FG02-08ER46514	Novel Temperature Limited Tunneling Spectroscopy of Quantum Hall Systems	81.049	96,179	-
DOE	DE-FG02-08ER46521	Ultrafast Electronic and Structural Dynamics in Quantum Materials	81.049	454,655	-
DOE	DE-FG02-91ER54109	Theoretical Research in Advanced Physics and Technology (Renewal of 6937946)	81.049	1,149,453	-
DOE	DE-FG02-94ER40818	Research in Nuclear Physics: Medium Energy Nuclear Physics	81.049	896,376	-
DOE	DE-FG02-94ER61937	Sectoral Interactions, Compounding Influences and Stressors, and Complex Systems: Understanding Tipping Points and Non-Linear Dynamics	81.049	719,498	-
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	99,876	-
DOE	DE-SC0002633	SISGR: Chemomechanics of Far-From Equilibrium Interfaces	81.049	18,142	-
DOE	DE-SC0007106	Encoding Material Structure Into the Primary Sequence of Polymers	81.049	252,369	-
DOE	DE-SC0008739	Unconventional Metals in Strongly Correlated Systems	81.049	161,959	-
DOE	DE-SC0010492	Long Pulse High Performance Scenarios and Control in EAST	81.049	353,291	-
DOE	DE-SC0011088	MIT RELATIVISTIC HEAVY ION GROUP	81.049	1,599,704	-
DOE	DE-SC0011090	FY2020 - 2022 Task R Theoretical Nuclear Physics	81.049	1,269,584	-
DOE	DE-SC0011091	Task W - Neutrino Physics	81.049	506,944	-
DOE	DE-SC0011755	PARENT OF AMS-02 OPERATIONS	81.049	2,006,217	-
DOE	DE-SC0011848	PARENT OF AMS-02 RESEARCH	81.049	1,023,978	-

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Federal Agency	Government Contract Number	Master Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
DOE	DE-SC0011939	TASK A: PARTICLE PHYSICS COLLABORATION	81.049	1,163,443	-
DOE	DE-SC0012071	Support of US Burning Plasma Organization	81.049	7,433	-
DOE	DE-SC0012470	MDSPlus Development and Support	81.049	475,899	-
DOE	DE-SC0012567	Task C: Theoretical High Energy Physics	81.049	993,367	-
DOE	DE-SC0014229	Phase Contrast Imaging for Wendelstein 7-X	81.049	194,212	32,407
DOE	DE-SC0014251	Gas-Puff-Imaging for Diagnosis of Boundary and SOL Physics in W7-X	81.049	296,374	-
DOE	DE-SC0014264	MIT Plasma Science and Fusion Center Magnetic Confinement Fusion Experiment Research and Related Activities	81.049	1,579,283	-
DOE	DE-SC0014264	MIT Plasma Science and Fusion Center Magnetic Confinement Fusion Experiment Research and Related Activities	81.049	5,521,982	-
DOE	DE-SC0014901	Computer-Aided Construction of Chemical Kinetic Models	81.049	50,961	-
DOE	DE-SC0015566	High Frequency High Gradient Accelerator Research	81.049	330,372	-
DOE	DE-SC0016154	Measurement of Helicons and Parametric Decay Waves in DIII-D with Phase Contrast Imaging	81.049	692,707	-
DOE	DE-SC0016214	Catalysis Beyond the Active Site: Pore Engineering in Lewis Acid Zeolites for Enhanced Cycloaddition Chemistry	81.049	87,634	-
DOE	DE-SC0016285	AMS THERMAL COOLING SYSTEM	81.049	107,226	-
DOE	DE-SC0016408	Control of the Plasma-Material Interface for Long Pulse Optimization in EAST and KSTAR	81.049	54,737	-
DOE	DE-SC0017381	Electron Temperature Fluctuation and n-T Phase Angle Measurements for Validation of Gyrokinetic Transport Models at ASDEX Upgrade	81.049	-805	-
DOE	DE-SC0018090	Center for Integrated Simulation of Fusion Relevant RF Actuators	81.049	522,303	165,109
DOE	DE-SC0018091	Microparticle Supersonic Impact: A Testbed for the Exploration of Metals under Extreme Conditions	81.049	5,454	-
DOE	DE-SC0018091	New Experimental Views on the Role of Temperature in Extreme Strain Rate Mechanics	81.049	111,441	-
DOE	DE-SC0018094	Nonequilibrium Properties of Driven Electrochemical Interfaces	81.049	135,293	-
DOE	DE-SC0018096	Simultaneous mitigation of density and energy errors in approximate DFT for transition metal chemistry	81.049	27,338	-
DOE	DE-SC0018097	Spectroscopic studies of protein-protein association in model membranes	81.049	198,700	-
DOE	DE-SC0018121	Computing the Properties of Matter with Leadership Computing Resources	81.049	581,226	-
DOE	DE-SC0018229	MIT-Bates Research and Engineering Center	81.049	1,936,574	-

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Federal Agency	Government Contract Number	Master Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
DOE	DE-SC0018357	Nonequilibrium Physics of Multiphase Flow in Porous Media: Wettability and Disorder	81.049	19,212	-
DOE	DE-SC0018934	Exploring Natural Aerosol Formation from DMS Oxidation and Implications for Aerosol Forcing	81.049	139,676	-
DOE	DE-SC0018935	Interplay of Magnetism and Superconductivity in van der Waals Heterostructures	81.049	-46,595	-
DOE	DE-SC0018936	Development of an absolute polarimeter and spin-rotator for a polarized He-3 ion source source at RHIC and polarimetry for high energy He-3 beams	81.049	-29	-
DOE	DE-SC0018945	Predictive Theory of Topological States of Matter	81.049	-4,291	-
DOE	DE-SC0018947	Portable Parallel Algorithms and Frameworks for Exascale Graph Analytics	81.049	128,957	-
DOE	DE-SC0019087	Rational Sub-Nanometer Manipulation of Polymer Morphology for Efficient Chemical Separations	81.049	115,343	-
DOE	DE-SC0019089	Feasibility Study: High-k Temperature (HiT) Fluctuation Diagnostic	81.049	100,778	-
DOE	DE-SC0019112	The Center for Enhanced Nanofluidic Transport (CENT)	81.049	2,342,894	1,483,595
DOE	DE-SC0019126	Novel Terahertz-Induced Quantum States Probed with Ultrafast Coherent X-Rays	81.049	931,473	248,138
DOE	DE-SC0019345	Excitons In Low-Dimensional Perovskites	81.049	211,967	-
DOE	DE-SC0019383	Real-time Measurements of Complex Transition Metal Oxide Nanostructure Growth	81.049	30,875	-
DOE	DE-SC0019768	Advance acct: Search for a Non-Zero Value of the Electric Dipole Moment of the Neutron	81.049	9,570	-
DOE	DE-SC0019768	Search for a Non-Zero Value of the Electric Dipole Moment of the Neutron	81.049	88,389	-
DOE	DE-SC0019998	Controlling Exciton Dynamics with DNA Origami for Quantum Information Science	81.049	395,825	-
DOE	DE-SC0019999	Medium Energy Nuclear Physics: Exotic Physics & Advanced Tools at J.Lab and the EIC	81.049	165,617	-
DOE	DE-SC0020042	Novel 2D materials and Structures via Janus Manipulation	81.049	116,015	-
DOE	DE-SC0020148	Tracing the Topological Fingerprint of Weyl Semimetals Using Neutron Probes	81.049	241,651	-
DOE	DE-SC0020149	Creating and Probing Large Gap 2D Topological Insulators for Quantum Computing	81.049	1,165,684	-
DOE	DE-SC0020180	Discovery and Design of Stable Nanocrystalline Alloys: The Grain Boundary Segregation Genome	81.049	339,906	-
DOE	DE-SC0020181	Quantum Devices for Neutrino and Rare Particle Detection	81.049	237,168	50,157
DOE	DE-SC0020240	Short-Range Correlations in Nuclei and the EMC Effect	81.049	579,490	-
DOE	DE-SC0020264	Quantum algorithms for fusion-plasma dynamics	81.049	311,474	88,941

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Federal Agency	Government Contract Number	Master Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
DOE	DE-SC0020265	Study of Short-Range Correlations in Nuclei Using Electro-induced Nucleon-knockout Reactions at High Momentum-Transfer	81.049	197,465	-
DOE	DE-SC0020327	Boundrary, SOL, and Divertor Physics Studies on TCV	81.049	541,440	-
DOE	DE-SC0020973	Molecular Control of Heterogeneous Electrocatalysis	81.049	100,812	-
DOE	DE-SC0020974	Primary and Secondary Sphere Effects on the Valence Isomerism of Fe-S Clusters	81.049	297,651	-
DOE	DE-SC0020998	A multiresolution sharp-interface framework for tightly-coupled multiphysics simulations	81.049	122,747	-
DOE	DE-SC0020999	Electrocatalytic alkene epoxidation at disrupted metal ensembles in blended electrolytes	81.049	50,139	-
DOE	DE-SC0021006	The QCD structure of nucleons and light nuclei	81.049	157,425	-
DOE	DE-SC0021025	Revealing the molecular origin of interactions between nanocrystals	81.049	199,423	-
DOE	DE-SC0021120	Study of High Harmonic Fast Wave Interaction with the Scrape-Off-Layer Plasmas in NSTX-U	81.049	217,432	-
DOE	DE-SC0021176	Shedding Light on Nuclear Properties at the Limits of Existence	81.049	282,268	-
DOE	DE-SC0021178	Liquid Metal surface properties and plasma material interactions for plasma-facing component development in NSTX-U	81.049	59,862	-
DOE	DE-SC0021179	Laser Spectroscopy of Exotic Atoms and Molecules Containing Octupole-Deformed Nuclei	81.049	122,957	-
DOE	DE-SC0021180	Josephson Traveling Wave Parametric Amplifiers to Enable Future Neutrino Mass Measurements	81.049	233,642	-
DOE	DE-SC0021181	Exploring the Effects of Environmental Radiation on Superconducting Qubit Coherence	81.049	161,779	-
DOE	DE-SC0021202	Accelerating radio frequency modeling using machine learning	81.049	79,170	-
DOE	DE-SC0021225	FAIR Framework for Physics-Inspired Artificial Intelligence in High Energy Physics	81.049	75,357	-
DOE	DE-SC0021226	Frameworks, Algorithms and Scalable Technologies for Mathematics (FASTMath) SciDAC Institute	81.049	78,669	18,427
DOE	DE-SC0021580	Signatures of Reaction Mechanisms in the Vibrational Level Population Distribution of Reaction Products	81.049	150,461	-
DOE	DE-SC0021629	Role of neutrals versus transport in determining the pedestal density structure	81.049	88,489	-
DOE	DE-SC0021634	Carbonate Management to Enable Energy- and Carbon-Efficient CO2 Electrolysis	81.049	351,107	-
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	90,602	-
DOE	DE-SC0021647	Unitary Qubit Lattice Algorithms for Plasma Physics	81.049	70,713	-

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Federal Agency	Government Contract Number	Master Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
DOE	DE-SC0021650	Investigating Excitonic Properties through Photon Correlation in Quantum Optical Materials	81.049	272,014	-
DOE	DE-SC0021886	Spacetime Emergence from Quantum Gravity: Perturbative and Nonperturbative Aspects	81.049	0	-
DOE	DE-SC0021939	Resonant Coherent Diffractive Imaging of Quantum Solids	81.049	125,570	-
DOE	DE-SC0021940	Machine Learning Augmented Multimodal Neutron Scattering for Emergent Topological Materials	81.049	32,005	-
DOE	DE-SC0021943	Harnessing the Large Hadron Collider with New Insights in Real-Time Data Processing and Artificial Intelligence	81.049	97,824	-
DOE	DE-SC0022012	Collaborative Research: Enabling multi-scale studies of magnetic reconnection with interpretable data-driven models	81.049	47,206	-
DOE	DE-SC0022016	Improving bioprocess robustness by cellular noise engineering	81.049	43,314	-
DOE	DE-SC0022017	Exploring Past and Future Drivers of Biogenic SOA	81.049	123,821	-
DOE	DE-SC0022028	Incommensurate Interfaces in Intercalated Quantum Materials	81.049	189,644	-
DOE	DE-SC0022033	A Streamlined Open Source Neutronics Toolkit for Fusion Reactor Design	81.049	91,454	-
DOE	DE-SC0022054	Nanoscale Free-Electron Lasing	81.049	167,186	-
DOE	DE-SC0022340	Intelligent experiments through real-time AI: Fast Data Processing and Autonomous Detector Control for sPHENIX and future EIC detectors	81.049	55,224	-
DOE	PENDING	Adv Acct: Parent of AMS-02 Operations	81.049	1,526,767	-
DOE	DE-EE0008316	A direct process for wire production from sulfide concentrates	81.086	48,946	-
DOE	DE-EE0009096 09/01	Machine-learned processing pathways for solid state electrolytes	81.086	430,007	-
DOE	DE-EE0009165	Multifunctional Optical Outcouplers for Efficient and Stable White OLEDs	81.086	417,083	-
DOE	DE-EE0009211	Transit-Centric Smart Mobility for High-Growth Urban Activity Centers: Improving Energy Efficiency through Machine Learning	81.086	312,991	77,277
DOE	DE-EE0009679	High Energy Density Hydrogel Thermo-Adsorptive Storage	81.086	458,198	42,819
DOE	DE-EE0007535	Low Cost (CAPEX and variable): Tool design for cell and module fabrication with thin, free-standing silicon wafers	81.087	-860	-
DOE	DE-EE0007982	Rapid Construction of Validated Chemistry Models for Advanced Biofuels	81.087	2,155	2,155
DOE	DE-EE0008375	Ceramic Castable Cement Tanks and Piping for Molten Salt	81.087	0	-
DOE	DE-EE0008381	High temperature pumps and valves for molten salt	81.087	-19	-
DOE	DE-EE0008558	Low-cost, high-efficiency III-V photovoltaics enabled by remote epitaxy through graphene	81.087	17,303	132,022

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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	370,452	116,000
DOE	DE-EE0009366	Machine Learning Accelerates Innovation in Perovskite Manufacturing Scale-up	81.087	147,383	68,650
DOE	DE-EE0009512	Next-generation perovskite photovoltaics: improving, stabilizing, and lead-sealing of record-setting laboratory solar cells toward commercialization	81.087	707,795	-
DOE	DE-FE0031668	Robust highly durable solid oxide fuel cell cathodes - Improved materials compatibility & self-regulating surface chemistry	81.089	-388	-
DOE	DE-FE0031677	AOI 4 Capillary-driven Condensation for Heat Transfer Enhancement in Steam Power Plants	81.089	54,278	-
DOE	DE-FE0032082	CFoam House	81.089	169,207	-
DOE	DE-FE0032102	Improving Durability and Performance of Solid Oxide Electrolyzers by Controlling Surface Composition on Oxygen Electrodes	81.089	258,335	46,807
DOE	DE-NA0003938	High-Energy-Density Physics, Laboratory Astrophysics, and Student Training on OMEGA	81.112	33,214	-
DOE	DE-NA0003868	Center for Advanced Nuclear Diagnostics and Platforms for ICF and HED Physics at Omega, NIF, and Z	81.113	1,642,721	243,348
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	139,201	22,680
DOE	DE-NE0008752	Evaluation of Economics Benefits of Accident Tolerant Plants Through Risk-Informed Approaches	81.121	54,328	24,719
DOE	DE-NE0008871	Simultaneous Corrosion/Irradiation Testing in Lead and Lead-Bismuth Eutectic: The Radiation Decelerated Corrosion Hypothesis	81.121	73,341	38,322
DOE	DE-NE0008872	Demonstrating Reactor Autonomous Control Framework using Graphite Exponential Pile	81.121	121,152	-
DOE	DE-NE0008873	Design of risk informed autonomous operation for advanced reactor	81.121	221,780	62,176
DOE	DE-NE0008966	Flexible Siting Criteria and Staff Minimization for Micro-Reactors	81.121	256,371	-
DOE	DE-NE0008967	Highly Compact Steam Generators for Improved Economics of Small Modular Reactors	81.121	185,785	-
DOE	DE-NE0008999	Molten Salt Reactor Test Bed with Neutron Irradiation	81.121	1,171,914	463,297
DOE	DE-NE0009014	(20-20186) University Research Reactor Upgrades Infrastructure Support for MIT Research Reactor's Normal & Emergency Electrical Power Supply Systems	81.121	378,923	-

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Federal Agency	Government Contract Number	Master Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
DOE	DE-NE0009049	Horizontal Compact High Temperature Gas Reactor	81.121	574,364	267,421
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	62,647	-
DOE	DE-NE008989	Validation of Robustness in TCR Design Strategies	81.121	303,249	-
DOE	DE-OE0000920	Effcient UltRa Endpoint IoT-enabled Coordinated Architecture (EUREICA)	81.122	460,300	256,027
DOE	DE-NA0003965	CESMIX: Center for the Exascale Simulation of Material Interfaces in Extreme Environments	81.124	1,725,129	-
DOE	DE-AR0000433	Engineering high yield pathways for methane activation and conversion to liquid fuels	81.135	-4,274	-
DOE	DE-AR0001005	Thermal Energy Grid Storage (TEGS) Using Multi-Junction Photovoltaics (MPV)	81.135	162,387	-
DOE	DE-AR0001066	Multimetallic Layered Composites (MMLCs) for Rapid, Economical Advanced Reactor Deployment	81.135	554,794	258,844
DOE	DE-AR0001130	MULTISCALE POROUS HIGH-TEMPERATURE HEAT EXCHANGER USING CERAMIC COEXTRUSION	81.135	387,870	238,703
DOE	DE-AR0001133	CARBONHOUSE: A SCALABLE ALL-CARBON BUILDING LOGIC DERIVED FROM HYDROCARBON RESOURCES	81.135	366,527	128,788
DOE	DE-AR0001154	Distributed nuclear reactor core monitoring with single-crystal harsh-environment optical fibers	81.135	317,196	-
DOE	DE-AR0001218	Machine learning assisted models for understanding and optimizing boiling heat transfer on scalable random surfaces	81.135	556,550	-
DOE	DE-AR0001220	GLOBAL OPTIMIZATION OF MULTICOMPONENT OXIDE CATALYSTS FOR OER/ORR	81.135	895,636	26,632
DOE	DE-AR0001261	Radio Frequency tools for Breakthrough Fusion Concepts	81.135	223,005	87,504
DOE	DE-AR0001295	High Fidelity Digital Twins for BWRX-300 Critical	81.135	373,968	169,893
DOE	DE-AR0001298	Generation of Critical Irradiation Data to Enable Digital Twinning of Molten-Salt Reactors	81.135	231,358	-
DOE	DE-AR0001311	Power plant CO2 capture integrated with lime-based direct air capture	81.135	563,971	191,720
DOE	DE-AR0001395	ELECTROCHEMICAL MINING OF MSWI ASH	81.135	444,381	-
DOE	DE-AR0001409	ELECTROCHEMICALLY MODULATED CO2 REMOVAL FROM OCEAN WATERS	81.135	248,353	-
DOE	DE-AR0001434	Additive Manufacuring of Oxygen-Resistant Gradient Refractory Composites	81.135	323,692	-
DOE	DE-AR0001511	ZERO-CARON BIOFUELS: AN OPTIMIZED TWO-STAGE SYSTEM FOR HIGH PRODUCTIVITY CONVERSION OF CO2 TO LIQUID FUELS	81.135	260,362	-

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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	95,884	-
DOE	N000394719	Metal Microplasma Printing for Agile Electronics	81.RD	48,981	-
DOE	SC-19-487	Center for the Advancement of Topological Semimetals (CATS)	81.RD	177,364	-
		Total for Department of Energy		**59,937,763**	**5,052,574**
		TOTAL for Department of Energy		**59,937,763**	**5,052,574**

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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	99,206	-
		Total for CDC		**99,206**	**-**
Other HHS					
HHS	1-R01-FD007226-01	Flexible Platform for End-to-end Manufacturing of Gene Therapies to Advance Development of Treatments for Ultrarare Diseases	93.103	81,621	-
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	256,194	-
HHS	1-R01-FD007480-01	Continuous Production of Viral -Vectors using membraneless Perfusion Culture of Host Cells	93.103	303,867	29,467
HHS	1-U01-FD006751-01	Novel Process Analytic Technology for Continuous Bioprocessses	93.103	-8,905	-
HHS	5 U01 FD006755-03	Integrated Continuous Processing Facility for Small Molecule and Biologic Lyophilized Final Dosage Forms	93.103	402,432	-
HHS	5-R01-FD006584-02	Continuous Viral Vector Manufacturing based on Mechanistic Modeling and Novel Process Analytics	93.103	-11,797	-
HHS	5-R01-FD006584-03	Continuous Viral Vector Manufacturing based on Mechanistic Modeling and Novel Process Analytics	93.103	284,934	-
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	311,955	-
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	589,743	-
HHS	5-U01-FD006751-02	Novel Process Analytic Technology for Continuous Bioprocessses	93.103	443,284	-
HHS	5-U01-FD006751-03	Novel Process Analytic Technology for Continuous Bioprocessses	93.103	879,872	-
HHS	U01FD006755-01	Integrated Continuous Processing Facility for Small Molecule and Biologic Lyophilized Final Dosage Forms	93.103	-24,129	-
HHS	U01FD006755-02	Integrated Continuous Processing Facility for Small Molecule and Biologic Lyophilized Final Dosage Forms	93.103	610,037	-
HHS	U01FD006755-02 REVISED	Integrated Continuous Processing Facility for Small Molecule and Biologic Lyophilized Final Dosage Forms	93.103	9,591	-
HHS	75A50119C00076	3D Vaccine Printer	93.RD	89,844	-
HHS	75F40121C00090	COVID-19: Application of Smart Data Analytics to Biomanufacturing	93.RD	1,049,930	-

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Federal Agency	Government Contract Number	Master Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
HHS	75F40121C00111	Controlled Protein Capture via Continuous Crystallization and Precipitation for Monoclonal Antibody Manufacturing	93.RD	475,250	64,003
HHS	75F40121C00131	Technologies to Enable Continuous Production of rAAV from Sf9/baculovirus Culture	93.RD	312,178	900
HHS	75P00120P00168	Web-Based Accessibility Initiative	93.RD	503,445	-
		Total for Other HHS		**6,568,407**	**94,370**
NIH					
NIH	5-R01-MH107680-05	The cognitive searchlight: TRN circuit dissection in health and disease	93.077	83	-
NIH	2T32ES007020-46	Training Grant in Environmental Toxicology	93.113	-982	-
NIH	5P30ES002109-39	MIT Center for Environmental Health Sciences (YR 36-40)	93.113	-12,773	-
NIH	5P30ES002109-40	MIT Center for Environmental Health Sciences (YR 36-40)	93.113	254,149	-
NIH	5-R35-ES028303-05	Mechanism of Eukaryotic Environmental Mutagenesis	93.113	512,237	-
NIH	5-R35-ES028303-06	Mechanism of Eukaryotic Environmental Mutagenesis	93.113	67,880	-
NIH	5-R35-ES028374-05	Protein Kinase Signaling in the Genotoxic Stress Response	93.113	394,984	-
NIH	5-T32-ES007020-47	Training Grant in Environmental Toxicology	93.113	647,912	-
NIH	5-F32-DE027877-03 REVISED	Environmentally-responsive, layer-by-layer coatings for the on-demand delivery of therapeutic growth factors and antibiotics to repair craniomaxillofacial bone defects	93.121	-5,831	-
NIH	5-R01-DE013023-20	Novel Polymers for Tissue Engineering	93.121	0	-
NIH	5-R01-DE024747-02	Tunable Nanolayer-Polymer Composite Patches for Cell-Free CMF Repair	93.121	351,296	351,296
NIH	5-R01-DE024747-05	Tunable Nanolayer-Polymer Composite Patches for Cell-Free CMF Repair	93.121	3,764	-
NIH	7-R01-DE029342-02 REVISED	Identification and Validation of a Novel Central Analgesia Circuit	93.121	510,383	174,165
NIH	3-P42-ES027707-05S1	Science and Engineering for Sensors, Mechanisms, and Biomarkers of Exposures	93.143	59,604	-
NIH	5-P42-ES027707-05	Science and Engineering for Sensors, Mechanisms, and Biomarkers of Exposures	93.143	904,201	-
NIH	5-P42-ES027707-05 REVISED	Science and Engineering for Sensors, Mechanisms, and Biomarkers of Exposures	93.143	476,493	-
NIH	TBD	The MIT Superfund Research Program: A Systems Approach for the Protection of Human Health from Hazardous Chemicals	93.143	315,425	-
NIH	1-F32-HG012307-01	Connecting perturbations of RNA binding proteins to their consequences	93.172	36,149	-
NIH	1-R56-HG011857-01	RNA targeting tools with novel specific RNA-guided RNA-targeting CRISPR effectors	93.172	335,519	-

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Federal Agency	Government Contract Number	Master Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NIH	3-R01-HG008754-03S1	High-Throughput Native Context Mapping and Modeling of Regulatory DNA	93.172	6,302	6,302
NIH	5-F31-HG010818-02	Leveraging biological pathways, gene networks, and functional annotations to understand the genetic architecture of diseases and complex traits	93.172	-3,105	-
NIH	5-R01-HG002439-18 REVISED	Regulation and Function of Alternative mRNA Isoform Expression in Mammals	93.172	480,530	-
NIH	5-R01-HG008754-04	High-Throughput Native Context Mapping and Modeling of Regulatory DNA	93.172	353,100	266,212
NIH	5-R01-HG010959-02	Privacy-preserving genomic medicine at scale	93.172	989,922	90,162
NIH	3-R01-DC016607-04S1 REVISED	The neural architecture of pragmatic processing	93.173	233,616	-
NIH	5-R01-DC000238-33	Experimental - Theoretical Studies of Cochlear Mechanisms	93.173	2,710	-
NIH	5-R01-DC000238-36 REVISED	Experimental - Theoretical Studies of Cochlear Mechanisms	93.173	305,764	-
NIH	5-R01-DC014739-05	Auditory Scene Analysis with Complex Sounds	93.173	69,266	-
NIH	5-R01-DC016607-05	The neural architecture of pragmatic processing	93.173	275,362	-
NIH	5-R01DC017970-03	Computational Cognitive Neuroscience of Human Auditory Cortex	93.173	319,151	-
NIH	1-DP1-AT011991-01	Fusion of nanomagnetic and viral tools to interrogate brain-body circuits	93.213	618,139	-
NIH	1-R01-AT011460-01	Noninvasive sensory stimulation to promote glymphatic-lymphatic clearance for the treatment of Alzheimer's Disease	93.213	95,974	-
NIH	5-R01-AT011460-02	Noninvasive sensory stimulation to promote glymphatic-lymphatic clearance for the treatment of Alzheimer's Disease	93.213	496,559	-
NIH	1 RF1 MH117809-01	From Electron Microscopy to Neural Circuit Hypotheses: Bridging the Gap	93.242	259,912	179,815
NIH	1-F31-MH129112-01A1	Spatiotemporal dynamics of locus coeruleus norepinephrine release in a learned behavior	93.242	12,482	-
NIH	1-K99-MH129613-01	Thalamic regulation of prefrontal dynamics in decision making under uncertainty	93.242	63	-
NIH	1-R01-MH111872-01	Multi-Site Non-Invasive Magnetothermal Excitation and Inhibition of Deep Brain Structures	93.242	22,050	22,050
NIH	1-R01-MH111916-03	Development of an Integrated System for Monitoring Home-Cage Behavior in Non-Human Primates	93.242	-52,185	-
NIH	1-R01-MH112694-01	Simultaneous multiplexed in situ fluorescence imaging of neuronal proteins and messenger RNAs	93.242	90,058	90,058
NIH	1-R01-MH114031-01	RNA Scaffolds for Cell Specific Multiplexed Neural Observation	93.242	113,652	-
NIH	1-R21-MH130067-01	Structured light temporal focusing depth-resolved wide-field FLIM-FRET for in vivo synaptic imaging	93.242	113,859	-
NIH	1-RF1-MH120017-01	Re-engineering Rabies Virus	93.242	563,193	-

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NIH	1-RF1-MH121270-01 REVISED	Highly specific, renewable, and cost-effective antibody toolbox for 3D proteomic phenotyping of the brain	93.242	1,737,617	797,645
NIH	1-RF1-MH121885-01A1	Nobrainer: A robust and validated neural network tool suite for imagers	93.242	643,951	283,508
NIH	1-RF1-MH124606-01	Multiplexed Nanoscale Protein Mapping Through Expansion Microscopy and Immuno-SABER	93.242	750,845	285,100
NIH	1-UG3-MH126868-01	Hemogenetic imaging technology for circuit-specific analysis of primate brain function	93.242	508,777	-
NIH	1-UG3-MH126869-01	Developing cell type-specific enhancers and connectivity mapping pipelines for marmosets	93.242	951,807	318,889
NIH	2-R01-MH060379-21	Functional and anatomical characterization of the striosomal system	93.242	7,670	-
NIH	3-F32-MH115441-03S1	Development of Line-Scan Temporal Focusing for fast structural imaging of synapse assembly/disassembly in vivo	93.242	13,619	-
NIH	5-F31-MH124393-02	Exploring the role of genetic structural variation in neuropsychiatric diseases	93.242	53,946	-
NIH	5-F32-MH117933-03	Characterizing Neural Adaptation in Autism Spectrum Disorder	93.242	85,857	-
NIH	5-F32-MH122995-04	Markerless Tracking of 3D Posture to Reveal the Sensory Origins of Body Schema - PDF: K. Severson	93.242	70,996	-
NIH	5-K99-MH116100-02S1	Testing the Mechanisms, Layers, and Frequencies of Prediction Encoding and its Violation	93.242	-6,847	-
NIH	5-R01-MH060379-20	Functional and anatomical characterization of the striosomal system	93.242	362,511	-
NIH	5-R01-MH085802-12	Early developmental mechanisms of Rett Syndrome	93.242	417,079	-
NIH	5-R01-MH104536-09	Imaging Synaptic Transmission of Individual Active Zones	93.242	126,016	-
NIH	5-R01-MH109978-05	Network-based prediction and validation of causal schizophrenia genes and variants	93.242	-4,181	-
NIH	5-R01-MH111872-03	Multi-Site Non-Invasive Magnetothermal Excitation and Inhibition of Deep Brain Structures	93.242	7,048	7,048
NIH	5-R01-MH111872-04	Multi-Site Non-Invasive Magnetothermal Excitation and Inhibition of Deep Brain Structures	93.242	445	-
NIH	5-R01-MH111916-03	Development of an Integrated System for Monitoring Home-Cage Behavior in Non-Human Primates	93.242	-38,743	-
NIH	5-R01-MH112694-05	Simultaneous multiplexed in situ fluorescence imaging of neuronal proteins and messenger RNAs	93.242	206,964	-
NIH	5-R01-MH114031-04	RNA Scaffolds for Cell Specific Multiplexed Neural Observation	93.242	154,662	126,283
NIH	5-R01-MH115037-05	Elucidating neural substrates that mediate autism-like behaviors	93.242	587,473	-
NIH	5-R01-MH115592-05	Thalamocortical Dynamics and Consciousness	93.242	317,044	-

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Federal Agency	Government Contract Number	Master Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NIH	5-R01-MH120118-03 REVISED	Behavioral and mechanistic dissection of a cognitive thalamo-cortical network	93.242	487,215	-
NIH	5-R01-MH121802-03 REVISED	Mutant Shank3 macaque monkeys for neurobiological studies of ASD	93.242	268,168	-
NIH	5-R01-MH122025-04	CRCNS US-French Research Proposal : Principles of Inference through Neural Dynamics	93.242	99,147	-
NIH	5-R01-MH122270-03	Characterization of amygdalar circuits mediating suppression of innate social behaviors	93.242	555,300	-
NIH	5-R01-MH126351-02	Spatiotemporal dynamics of locus coeruleus circuits during learned behavior	93.242	530,839	-
NIH	5-R01-MH129046-02	CRCNS: Computational principles of mental simulation in the entorhinal and parietal cortex	93.242	252,572	-
NIH	5-R21-MH120440-02	Mechanisms Underlying Glial Regulation of Neuronal Excitability in Drosophila	93.242	19,485	-
NIH	5R24MH117295-04	DANDI: Distributed Archives for Neurophysiology Data Integration	93.242	1,254,738	790,819
NIH	5-R37-MH087027-10 REVISED	Cortical Circuits for Attention and Decisions	93.242	65,081	-
NIH	5-U01-MH108168-04S1 REVISED	Connectomes Related to Anxiety and Depression in Adolescents	93.242	3,762	3,762
NIH	5-U01-MH114819-03	A Molecular and Cellular Atlas of the Marmoset Brain	93.242	119,993	119,560
NIH	5-U01-MH114819-05	A Molecular and Cellular Atlas of the Marmoset Brain	93.242	1,047,249	375,921
NIH	5-U01-MH117072-03	Towards integrated 3D reconstruction of whole human brains at subcellular resolution	93.242	99,355	60,779
NIH	5-U01-MH117072-04	Towards integrated 3D reconstruction of whole human brains at subcellular resolution	93.242	1,382,740	197,402
NIH	5-K99-AA028579-02	Arousal-induced noradrenergic signaling modulates cortical astrocyte-neuron circuits during ethanol consumption	93.273	208,625	-
NIH	1-R01-DA045549-01	High-Performance Imaging Through Scattering Living Tissue	93.279	150,693	-
NIH	1-RF1-DA049005-01	Novel tools for spatiotemporal modulation of astrocytes in neuronal circuits	93.279	303,224	219,714
NIH	1-U01-DA054181-01	A Genetic Engineering Toolbox for Marmosets (GETMarm): Development and optimization of genome editing and assisted reproduction techniques for marmoset models	93.279	893,782	-
NIH	5-R01-DA029639-10	Novel Platforms for Systematic Optical Control of Complex Neural Circuits In Vivo	93.279	20,366	-
NIH	5-R01-DA029639-11 REVISED	Novel Platforms for Systematic Optical Control of Complex Neural Circuits In Vivo	93.279	759,408	278,033
NIH	5-R01-DA045549-04	High-Performance Imaging Through Scattering Living Tissue	93.279	204,894	64,180
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	28,067	-

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Federal Agency	Government Contract Number	Master Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NIH	1-K99-EB028311-01 REVISED	Engineering a diagnostic platform for rapid breath-based respiratory pathogen identification and treatment monitoring	93.286	-150	-
NIH	1-R01-EB024591-01	Synthetic Genetic Controller Circuits to Reprogram Cell Fate	93.286	-9,246	1,815
NIH	1-R01-EB025854-01	Synthetic biology-regulated RNA vaccines	93.286	28,842	-
NIH	1-R01-EB026344-01	Multivalent Nano-conjugates for Targeted Penetration of and Delivery to Dense Extracellular Matrices	93.286	372,004	-
NIH	1-R01-EB027717-01A1	Micro-invasive biochemical sampling of brain interstitial fluid for investigating neural pathology	93.286	454,321	-
NIH	1-R01-EB030946-01	Synthetic gene sensors and effectors to redirect organoid development	93.286	123,529	95,979
NIH	1-R01-EB031082-01A1	Localized immunotherapy using alum-binding therapeutics	93.286	464,541	-
NIH	1-R01-EB031957-01	Programmable gene integration and cell engineering with CRISPR-directed integrases	93.286	605,397	-
NIH	1-R21-EB028414-01A1	Mechanical Augmentation of the Diaphragm for End-Stage Respiratory Failure	93.286	260,762	-
NIH	1-U01-EB031641-01	Toward functional molecular neuroimaging using vasoactive probes in human subjects	93.286	251,273	-
NIH	2-P41-EB015871-31	MIT Laser Biomedical Research Center	93.286	655,545	264,088
NIH	2-R01-EB001965-14	Advanced Instrumentation for Dynamic Nuclear Polarization NMR Research	93.286	7,590	-
NIH	2-R01-EB004866-13	Innovative Instrumentation for High Magnetic Field DNP NMR	93.286	71,387	-
NIH	2-R01-EB017755-05	Mucin Glycans in the Regulation of Microbial Virulence	93.286	218,514	107,069
NIH	2-R01-EB024261-05	Expansion Microscopy	93.286	67,125	-
NIH	2-T32-EB001680-16	Neuroimaging Training Program	93.286	12,590	-
NIH	2T32EB019940-06A1	Neurobiological Engineering Training Program	93.286	36,311	-
NIH	3-K99-EB025254-02S1	High-throughput micro-RNA profiling of single cells and its application in leukemia	93.286	66,744	-
NIH	3-R01-EB025854-03S1	COVID-19: Synthetic biology-regulated RNA vaccines	93.286	329,066	-
NIH	3-R01-EB026344-03S1 REVISED	Multivalent Nano-conjugates for Targeted Penetration of and Delivery to Dense Extracellular Matrices	93.286	3,558	-
NIH	3-R21-EB026008-02S1 REVISED	COVID-19: Structured DNA Nanoparticles Therapeutic mRNA and CRISPR/Cas9 Delivery	93.286	264,670	173,688
NIH	5-K99EB027706-02	Developing next generation multiphoton systems to reveal cortico-thalamic interactions underlying short-term memory in behaving mice	93.286	100,341	-
NIH	5-P41-EB015871-32	MIT Laser Biomedical Research Center	93.286	0	-
NIH	5-P41-EB015871-33	MIT Laser Biomedical Research Center	93.286	-1,727	-
NIH	5-P41-EB015871-35	MIT Laser Biomedical Research Center	93.286	133,345	-

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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	474,805	474,805
NIH	5-R01-EB000244-42	A new high-throughput gastrointestinal tract explant platform for drug formulation discovery and metabolic disease modulation	93.286	334,225	27,468
NIH	5-R01-EB001965-17	Advanced Instrumentation for Dynamic Nuclear Polarization NMR Research	93.286	87,319	-
NIH	5-R01EB004866-14	Innovative Instrumentation for High Magnetic Field DNP NMR	93.286	659,884	-
NIH	5-R01-EB017205-07	Critical Care Informatics	93.286	424,881	-
NIH	5-R01-EB017755-08 REVISED	Mucin Glycans in the Regulation of Microbial Virulence	93.286	396,249	-
NIH	5-R01-EB022062-04 REVISED	Tabletop liquid-helium-free, persistent-mode 1.5-T/70-mm osteoporosis MRI magnet	93.286	151,853	-
NIH	5-R01-EB024261-04	Expansion Microscopy	93.286	21,404	-
NIH	5-R01-EB024531-03	Computational Design, Fabrication, and Evaluation of Optimized Patient-Specific Transtibial Prosthetic Sockets	93.286	1,067	-
NIH	5-R01-EB024591-04	Synthetic Genetic Controller Circuits to Reprogram Cell Fate	93.286	103,820	99,527
NIH	5-R01-EB025256-04	Programmed Differentiation Circuits for Organoids using Meso-Microfluidics	93.286	142,222	-
NIH	5R01EB025854-04	Synthetic biology-regulated RNA vaccines	93.286	108,573	-
NIH	5-R01-EB026344-04	Multivalent Nano-conjugates for Targeted Penetration of and Delivery to Dense Extracellular Matrices	93.286	255,663	-
NIH	5-R01-EB027717-03 REVISED	Micro-invasive biochemical sampling of brain interstitial fluid for investigating neural pathology	93.286	276,178	-
NIH	5-R01-EB030946-02	Synthetic gene sensors and effectors to redirect organoid development	93.286	458,530	-
NIH	5-R21-EB026008-02 REVISED	Structured DNA Nanoparticles Therapeutic mRNA and CRISPR/Cas9 Delivery	93.286	-19,706	-
NIH	5-T32-EB001680-17	Neuroimaging Training Program	93.286	162,711	-
NIH	5-U01-EB029132-02	Microvascular Permeability, Inflammation, and Lesion Physiology in Endometriosis: A Microphysiological Systems Approach	93.286	-16,433	-
NIH	5-U01-EB029132-03	Microvascular Permeability, Inflammation, and Lesion Physiology in Endometriosis: A Microphysiological Systems Approach	93.286	687,544	-
NIH	1DP2AI136597-01	Developing powerful daisy drive systems for the precise alteration of local populations	93.310	823,069	-
NIH	1DP2ES027992	Proteome-Driven Holistic Reconstruction of Organ-Wide Multi-Scale Networks	93.310	49,464	-
NIH	1DP2GM119419	"Bottom-up" Profiling of Interacting Cellular Systems	93.310	-10,956	-
NIH	1-DP2-GM140938-01	DYNAMIC BOTTOM-UP DISSECTION OF CHROMATIN LOOPING AND GENE REGULATION	93.310	419,813	-

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Federal Agency	Government Contract Number	Master Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NIH	1-DP2-GM146248-01	Late Stage Stereochemical Editing to Transform the Synthesis of Bioactive Molecules	93.310	234,628	-
NIH	1-DP2-GM146254-01	Towards fully reconstituting mammalian transcription in a test tube	93.310	321,194	-
NIH	1-R01-ES031576-01	Epigenetics of the human gut microbiome	93.310	180,793	-
NIH	1-U01-CA231079-01	Development of multifunctional probes for profiling microbial glycans	93.310	51,306	-
NIH	4-DP2-ES027992-02	Proteome-Driven Holistic Reconstruction of Organ-Wide Multi-Scale Networks	93.310	483,395	-
NIH	5-R01-ES031576-04	Epigenetics of the human gut microbiome	93.310	271,758	-
NIH	5-U01-CA231079-03	Development of multifunctional probes for profiling microbial glycans	93.310	15,725	-
NIH	5-U24-OD026638-04	Knockin marmoset reporters for non-invasive measuring of genome-editing efficiency	93.310	673,637	-
NIH	7DP5OD026369-04	Dissecting and engineering reversible cell cycle states	93.310	307,915	-
NIH	4-UH3-TR002186-03	Cartilage-Bone-Synovium MPS: Musculoskeletal Disease Biology in Space	93.350	227,027	46,831
NIH	1S10OD023513-01A1	New RF Electronics Console and Probes for 900 Mhz NMR Spectrometer	93.351	0	-
NIH	1-U01-CA250554-01	Developing high-throughput genetic perturbation strategies for single cells in cancer organoids	93.353	264,816	-
NIH	5-U01-CA250554-02	Developing high-throughput genetic perturbation strategies for single cells in cancer organoids	93.353	763,476	-
NIH	1-F99CA26404-01	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	31,104	-
NIH	1-R21-CA256081-01	Innovative Droplet Lenses for NextGen Light Sensors of Biomarkers of Inflammation	93.393	109,877	-
NIH	2-R01-CA080024-25	Intra and Extra-Chromosomal Probes for Mutagenesis by Carcinogens	93.393	364,278	-
NIH	4-K00-CA253767-03	Evaluating evolutionary dynamics in pancreatic adenocarcinoma	93.393	6,226	-
NIH	5-K00-CA245813-04	Protein Phosphatase PP2A and DNA damage in cell fate decisions of acute myeloid leukemic cells	93.393	90,955	-
NIH	5-P01-CA042063-32	Characterization of Pathways Controlling Cancer at the Level of Gene Regulation	93.393	1,191,130	-
NIH	5-R01-CA021615-42 REVISED	Mutagenesis and Repair of DNA	93.393	91,489	-
NIH	5-R01-CA080024-23	Intra and Extra-Chromosomal Probes for Mutagenesis by Carcinogens	93.393	-16,203	-

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Federal Agency	Government Contract Number	Master Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NIH	5-R21-CA256081-02	Innovative Droplet Lenses for NextGen Light Sensors of Biomarkers of Inflammation	93.393	165,641	-
NIH	1-R01-CA220468-01	Organic nanoparticles for dual MRI-guided therapeutic selection and ovarian cancer drug delivery	93.394	63,188	36,875
NIH	1-R01-CA252216-01	Omniview tethered capsule folow cost , non-endoscopic Barretts esophagus screenings in unsedated patients	93.394	69,630	-
NIH	1-R21-CA236685-01	Building microenvironment-containing organoids from patient samples with single-cell precision	93.394	18,934	18,934
NIH	1-R21-CA259840-01	High-efficiency microfluidic cell fusion for dendritic cell/tumor cell vaccine production	93.394	110,475	47,382
NIH	5-R01-CA075289-21	Optical Biopsy Using Coherence Tomography	93.394	-23,776	-
NIH	5-R01-CA178636-05	Intraoperative real time breast cancer margin assessment with nonlinear microscopy	93.394	-6,264	-
NIH	5-R01-CA218094-04	Deep learning based antibody design using high-throughput affinity testing of synthetic sequences	93.394	330,650	-
NIH	5-R01-CA220468-05	Organic nanoparticles for dual MRI-guided therapeutic selection and ovarian cancer drug delivery	93.394	508,779	-
NIH	5-R01-CA235740-04	Microengineered Technologies for Quantitative, Multiplexed and Spatially Resolved Measurement of miRNA in Tissue Sections	93.394	288,456	122,502
NIH	5-R01-CA249151-02	Increasing nerve-sparing radical prostatectomy rates using intraoperative nonlinear microscopy	93.394	310,824	-
NIH	5-R01-CA252216-02	Omniview tethered capsule folow cost , non-endoscopic Barretts esophagus screenings in unsedated patients	93.394	191,895	-
NIH	5-R21-CA236685-03	Building microenvironment-containing organoids from patient samples with single-cell precision	93.394	69,157	-
NIH	5R33CA223904-03	Advanced development and validation of microdevices for high-throughput in situ drug sensitivity testing in tumors	93.394	77,260	-
NIH	1-R01-CA226898-01A1	RNA-Binding Proteins as Molecular Integrators that Control the Response of HGSOC to Ant-Cancer Therapies	93.395	371,802	-
NIH	1-R01-CA235375-01A1	Delivery of cytokines for cancer immunotherapy using nanolayer-controlled trafficking of liposomal nanoparticles	93.395	56,418	-
NIH	1-R01-CA247632-01	Enhancing CAR-T cell activity against solid tumors by vaccine boosting through the chimeric receptor	93.395	25,914	25,914
NIH	1-R01-CA271243-01	Intratumoral Cytokine Immunotherapy Studies in Companion Canine Cancer Models	93.395	24,153	-
NIH	1-U01-CA265706-01	Immunotherapy via engineered therapeutic programs in tumors using RNA	93.395	309,013	-
NIH	5-R01-CA073808-25	Human Ribonuclease as a Cytotoxin	93.395	307,800	-
NIH	5-R01-CA235375-03	Delivery of cytokines for cancer immunotherapy using nanolayer-controlled trafficking of liposomal nanoparticles	93.395	306,198	-

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Federal Agency	Government Contract Number	Master Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NIH	5-R01-CA247632-03 REVISED	Enhancing CAR-T cell activity against solid tumors by vaccine boosting through the chimeric receptor	93.395	247,270	-
NIH	1-R01-CA245314-01A1	Impact of fasting on intestinal stem cells and cancer	93.396	87,424	-
NIH	1-R21-CA257980-01A1	A cell-cycle induced genetic recorder for simultaneous recovery of cell divisions and lineage	93.396	17,617	-
NIH	1-U01-CA253547-01A1	Identifying therapeutic pathways targeting medulloblastoma-immune cell interactions	93.396	337,950	111,573
NIH	3-U01-CA202177-05S2	Quantitative analyses of tumor cell extravasation	93.396	37,547	-
NIH	3-U01-CA238720-03S1	Identification of adaptive response mechanisms in breast cancer by information theory and proteomics	93.396	282,598	-
NIH	5-R01-CA211184-05 REVISED	Dietary control of stem cells in physiology and cancer	93.396	-320,376	-
NIH	5-R01-CA233477-03	Identifying and targeting evolutionary trajectories in cancer	93.396	258,481	-
NIH	5-R01-CA233983-03 REVISED	Development of novel metastatic mouse models that recapitulate the major immune contexts of human colon cancer	93.396	351,098	-
NIH	5-R01-CA245314-03	Impact of fasting on intestinal stem cells and cancer	93.396	560,925	-
NIH	5-R33-CA257878-02-REVISED	Super-resolution microscopy for dynamic analysis of focal enhancer amplifications in cancer	93.396	276,215	-
NIH	5-R35-CA242379-02	Understanding the role of metabolism in cancer	93.396	-130,614	-
NIH	5-R35-CA242379-03	Understanding the role of metabolism in cancer	93.396	1,055,451	-
NIH	5-U01-CA184898-06	Embryonal Brain Tumor Networks	93.396	-5	-
NIH	5-U01-CA214381-04	Development of Physiologic Tissue Models to Assess Tumor Explant Response to Immune Checkpoint Blockade	93.396	295,929	268,784
NIH	5-U01-CA214381-05	Development of Physiologic Tissue Models to Assess Tumor Explant Response to Immune Checkpoint Blockade	93.396	397,694	126,877
NIH	5U01CA215798-04	Systems approaches to understanding the relationships between genotype, signaling, and therapeutic efficacy	93.396	73,871	83,244
NIH	5-U01-CA215798-05	Systems approaches to understanding the relationships between genotype, signaling, and therapeutic efficacy	93.396	364,679	328,213
NIH	5-U01-CA238720-02	Identification of adaptive response mechanisms in breast cancer by information theory and proteomics	93.396	42,787	44,716
NIH	5-U01-CA238720-03	Identification of adaptive response mechanisms in breast cancer by information theory and proteomics	93.396	61,294	57,828
NIH	5-U01-CA253547-02	Identifying therapeutic pathways targeting medulloblastoma-immune cell interactions	93.396	34,081	-
NIH	7-R01-CA248280-03	Rapid ex vivo biosensor cultures to assess dependencies in gastroesophageal cancer	93.396	253,774	-
NIH	1U54CA261694-01	Mechanical determinants of organ-selective metastatic colonization, dormancy and outgrowth	93.397	393,456	-

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Federal Agency	Government Contract Number	Master Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NIH	5-P30-CA014051-50	Cancer Center Support (CCSG) Grant	93.397	2,969,478	-
NIH	5-P30-CA014051-51	Cancer Center Support (CCSG) Grant	93.397	586,292	-
NIH	5-U54-CA210180-05	MIT/Mayo Physical Sciences Center for Drug Delivery and Efficacy in Brain Tumors	93.397	739,730	543,320
NIH	5-U54-CA217377-04	Quantitative and functional characterization of therapeutic resistance in cancer (PARENT)	93.397	30,875	22,380
NIH	5-U54-CA217377-05	Quantitative and functional characterization of therapeutic resistance in cancer (PARENT)	93.397	1,974,576	460,668
NIH	1-F31-CA268835-01	Comprehensive modeling of tumor suppressor gene-derived neoantigens in pancreatic cancer	93.398	2,153	-
NIH	1-F31-CA271787-01	Exploiting metabolic vulnerabilities of breast cancer brain metastases for therapy	93.398	12,973	-
NIH	1-K99-CA255844-01A1	Understanding drug delivery through an integrated barcoding approach	93.398	135,286	-
NIH	1-K99-CA255928-01A1	Understanding the effects of dietary interventions on pancreatic ductal adenocarcinoma therapy	93.398	48,770	-
NIH	5-F30-CA228229-03	Elucidating the role of GATOR2 in nutrient sensing by mTORC1	93.398	-1,098	-
NIH	5-F30-CA236179-03 REVISED	Regulation by mTORC1 of the lysosomal efflux of essential amino acids	93.398	7,199	-
NIH	5F31CA232340-04	Determining the mechanism of serine sensing by the mTOR pathway	93.398	48,427	-
NIH	5-F31-CA232355-04	Defining the mechanism of starvation-induced ribophagy	93.398	43,201	-
NIH	5-F31-CA236036-03 REVISED	The Effect of Serine Source on Nucleotide Metabolism in Cancer: Manipulating Environmental Nutrient Availability to Impact Tumor Growth	93.398	5,151	-
NIH	5-F31-CA239493-03	Rebalancing protein homeostasis enhances tumor antigen presentation	93.398	45,442	-
NIH	5-F31-CA250171-02 REVISED	Characterizing the Physicochemical Properties of Estrogen Receptor-mediated Transcriptional Condensates in Breast Cancer	93.398	35,495	-
NIH	5-F31-CA254162-03	Understanding Compartmentalized Leucine Metabolism Downstream of mTORC1 Signaling	93.398	45,206	-
NIH	5-F31-CA261093-02	Investigating the impact of heterogeneous and homogenous neoantigen expression patterns on the anti-tumor immune response	93.398	49,002	-
NIH	5-F32-CA239362-03	Cytosolic Delivery of Tumor Antigens into Dendritic Cells - Postdoctoral Fellow: Nicholas Truex	93.398	61,501	-
NIH	5-F32-CA247259-02	Molecular probes for allele-specific interdiction of K-Ras G12D signaling	93.398	62,809	-
NIH	5-F32-CA247274-03	Genomic incorporation of stapled peptides for cost effective discovery and synthesis of novel therapeutics - PDF: Emma Chory	93.398	63,942	-

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NIH	5-F32-CA261012-02 REVISED	Targeting the Oncogenic Fusion Transcription Factor PAX3-FOXO1 with Small Molecules	93.398	53,509	-
NIH	5-F32-CA265042-02	Elucidating the molecular mechanisms of PRMT5i response and resistance in LUAD and PDAC	93.398	57,856	-
NIH	5-K00-CA212227-06	Imaging Cancer Angiogenesis with Acoustic Angiography Ultrasound	93.398	76,184	-
NIH	5-K99-CA234221-02S1	Understanding metabolic heterogeneity in pancreatic cancer	93.398	58,811	-
NIH	5-K99-CA237861-02	Developing multiplexed microenvironmental sensors for precision diagnostics of cancer metastasis	93.398	14,270	-
NIH	5-K99-CA241072-02	Exploring the impact of HSP90 inhibition on antigen presentation and anti-tumor immune responses	93.398	121,325	-
NIH	1-R01-HL161069-01	Personalized lesion modification optimizes atherosclerosis intervention	93.837	101,040	-
NIH	5-F32-HL154658-02	Investigating the role of NADPH oxidase 4 (Nox4) in cardiomyocyte maturation	93.837	34,015	-
NIH	5-R01-HL140471-04	Investigating the role of H2A.Z dynamics in regulating cardiac lineage commitment	93.837	240,897	-
NIH	5-R01-HL153857-02	Stretchable Hydrogel Bioinks-Enabled Microfluidic Bioprinting of Functional Small-Diameter Blood Vessels	93.837	434,247	232,029
NIH	1-R01-HL162564-01	Nonviral delivery techniques for in vivo prime editing	93.838	47,830	-
NIH	1-R01-HL158102-01	Single-cell measurement of cyclic stress on sickle blood cells by imaging-microfluidics	93.839	164,245	-
NIH	5-F30-HL156404-02	Molecular determinants of fetal hemoglobin induction by hydroxyurea to treat sickle cell disease	93.839	47,873	-
NIH	5-R01-HL158102-02	Single-cell measurement of cyclic stress on sickle blood cells by imaging-microfluidics	93.839	298,600	186,168
NIH	5-F31-AR079263-02	Chondronoids for Studying Collagen-II Homeostasis and Diseases	93.846	42,981	-
NIH	5-R01-AR071443-05	Defining and Modulating Mechanisms of Collagen Proteostasis	93.846	375,735	-
NIH	5-R56-AR044276-24	Chemistry and Biology of Collagen	93.846	233,022	-
NIH	5-F31-DK113665-04	Leucine Sensing by the mTORC1 Pathway in the Liver - PDF Cangelosi	93.847	32,091	-
NIH	5-F32-DK118785-03	Glycemic Control by Glucose-Responsive Hydrogels Based on Synthetic Lectin Mimics	93.847	2,401	-
NIH	5-F32-DK126233-02	Engineered nanoparticles to rescue complement dysfunction and vascular disease during diabetes	93.847	64,814	-
NIH	5-R01-DK115558-05	Macromolecular interactions controlling the ALA synthases, keystone enzymes that initiate heme biosynthesis	93.847	407,562	-

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NIH	1-F31-NS127420-01 REVISED	Establishing the cohort of early active zone proteins and their role in synaptic strength and maturation at the Drosophila neuromuscular junction.	93.853	9,271	-
NIH	1-F99-NS124175-01	PDF: H. Kosakowski - Function of high-level visual cortex in awake infants.	93.853	41,085	-
NIH	1-R01-NS113245-01	Functional dissection of thalamocortical interactions through genetically-defined TRN subnetworks	93.853	337,236	-
NIH	1-R01-NS115576-01	Wireless Magnetomechanical Neuromodulation of Targeted Circuits	93.853	288,096	288,096
NIH	1-R01-NS115576-01 REVISED	Wireless Magnetomechanical Neuromodulation of Targeted Circuits	93.853	182,927	-
NIH	1-R01-NS120592-01	Nanosensors for sensitive brain-wide neurochemical imaging	93.853	384,904	-
NIH	1R01NS121073-01A1	Analysis of integrated brain functions using hemogenetic imaging	93.853	62,775	-
NIH	1-R01-NS121078-01	Human 3D Neuro-Vascular Interaction and Meningeal Lymphatic Models with Application to Alzheimer’s Disease	93.853	128,925	115,150
NIH	1-R01-NS123120-01A1	Non-Human Primate Model for Developing Closed-Loop Anesthesia Delivery Systems	93.853	44,230	-
NIH	1-R21-NS120088-01A1	A high-throughput open-well system for engineering neurovascular units	93.853	21,546	-
NIH	1-R21-NS123499-01A1	Pathophysiology and treatment of fragile X and related disorders	93.853	49,346	-
NIH	1-R21-NS125396-01A1	Developing a strategy for 4-color in vivo two-photon imaging	93.853	67,526	-
NIH	1-R35-NS127327-01	Molecular Mechanisms Underlying Cell Type-Specific Vulnerability in Huntington’s Disease	93.853	117,256	-
NIH	1-U01-NS121471-01	Computational neuroscience of language processing in the human brain	93.853	21,628	-
NIH	1-UF-1NS107712-01 REVISED	Intracellular calcium sensing with molecular fMRI	93.853	4,616	-
NIH	1-UG3-NS115064-01	Construction of an integrated immune - vascular brain - chip as a platform for the study, drug screening, and treatments of Alzheimer's disease	93.853	-34,291	-
NIH	2-R01-NS089076-06	Epigenetic pathology and therapy in Huntington's disease	93.853	347,939	41,302
NIH	3-F32-NS116107-02S1	New molecular pathways that link gut microbiota to neural circuit activity and behavior	93.853	64,863	-
NIH	3-UG3-NS115064-01S1	COVID-19: Construction of an integrated immune - vascular brain - chip as a platform for the study, drug screening, and treatments of Alzheimer's disease	93.853	49,666	-
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	262,742	-
NIH	5-F31-NS113464-02	The Role of Neuronal DNA Double Strand Breaks in Neuroinflammation	93.853	40,243	-

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Federal Agency	Government Contract Number	Master Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NIH	5-F31-NS118753-02	Interferometric, acousto-optic modulated diffuse correlation spectroscopy @ 1064 nm (AOM-iDCS) toward higher sensitivity, non-invasive measurement of cerebral blood flow	93.853	39,597	-
NIH	5-F31-NS118948-02	Effect of Nanoscale Active Zone Morphology on Synaptic Vesicle Release Probability	93.853	49,947	-
NIH	5-F32-NS110481-03 REVISED	Correlation of astrocyte Ca2+ microdomain activity with motor learning and neuronal function	93.853	59,276	-
NIH	5-F32-NS114358-03	Molecular mechanism of CPG15 mediated activity-dependent synaptic plasticity	93.853	39,736	-
NIH	5-K00-NS113459-04	The development of subnetworks of the TRN	93.853	97,236	-
NIH	5K99NS118112-02	Network and dendritic mechanisms of context-dependent cortical computation	93.853	112,605	-
NIH	5-R01-NS040296-20	Characterization of the Drosophila Synaptotagmin Family	93.853	327,113	-
NIH	5-R01-NS077986-11	Pre-motor Neural Circuits for Exploratory Movement	93.853	438,516	-
NIH	5-R01-NS098505-03	Dissecting the role of thalamic inhibition in neurodevelopmental diseases	93.853	77,921	-
NIH	5-R01-NS098505-05	Dissecting the role of thalamic inhibition in neurodevelopmental diseases	93.853	64,691	-
NIH	5-R01-NS102727-02	Scalable Cell- and Circuit-Targeted Electrophysiology	93.853	0	-
NIH	5-R01-NS102727-04	Scalable Cell- and Circuit-Targeted Electrophysiology	93.853	77,414	183,969
NIH	5-R01NS102730-05	Mechanisms underlying DNA double strand break response in Alzheimer?s disease and frontal temporal dementia	93.853	304,561	-
NIH	5-R01-NS104892-05	Neuromodulatory control of collective circuit dynamics in C. elegans	93.853	366,453	-
NIH	5-R01-NS106031-05	A dendritic mechanism for cholinergic neuromodulation of cortical function	93.853	445,016	-
NIH	5-R01-NS109947-06	Cortical Signature and Modulation of Pain	93.853	809,613	375,970
NIH	5-R01-NS113079-04	Dendritic Computation and Representation of Head Direction in Retrosplenial Cortex	93.853	527,617	-
NIH	5-R01-NS113245-04	Functional dissection of thalamocortical interactions through genetically-defined TRN subnetworks	93.853	191,449	-
NIH	5-R01-NS117588-02	Molecular and Cellular Mechanisms Mediating Structural and Functional Active Zone Maturation	93.853	358,568	-
NIH	5R01NS119519-02 REVISED	Sensorimotor learning through adjustments of cortical dynamics	93.853	505,306	-
NIH	5-R01-NS121078-02	Human 3D Neuro-Vascular Interaction and Meningeal Lymphatic Models with Application to Alzheimer’s Disease	93.853	336,279	-
NIH	5-R21-NS102762-02	Improving in vitro generation of human oligodendrocyte lineage cells by mechanical stimulation	93.853	-675	-

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Federal Agency	Government Contract Number	Master Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NIH	5-R21-NS105027-02	Development of 3D vascularized model of Blood Brain Barrier and its application to Alzheimer disease research	93.853	163,426	159,306
NIH	5-R37NS051874-27	The Cdk5/35 Kinase	93.853	499,061	-
NIH	5-T32-NS105587-02	Computationally Enabled Integrative Neuroscience	93.853	10,199	-
NIH	5-T32-NS105587-03	Computationally Enabled Integrative Neuroscience	93.853	206,995	-
NIH	5-U01-NS110453-03	Single-cell transcriptional and epigenomic dissection of Alzheimer's Disease and Related Dementias	93.853	728,738	-
NIH	5-U01-NS121471-02	Computational neuroscience of language processing in the human brain	93.853	240,033	-
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	784,080	-
NIH	7-R01-NS100802-06	Determinants of cell type-specific vulnerability in Huntington's disease	93.853	365,000	-
NIH	1-DP2-AI158126-01	Repertoire-scale T cell antigen identification via peptide-MHC lentivirus display	93.855	341,105	-
NIH	1-R01-AI152209-01	Heritable immunization of the white-footed mouse reservoir of Lyme disease	93.855	171,924	145,478
NIH	1-R01-AI155489-01A1	Mechanisms of SFG Rickettsia-Host Interactions	93.855	435,510	-
NIH	1-R01-AI162307-01	Investigation of Synthetic DNA-based Viral Particles for Spatially Controlled Antigen Presentation	93.855	336,228	-
NIH	1-R21-AI158169-01	COVID-19: EVOLVING VIRUS-SPECIFIC sACE2 MIMICS FOR COMPETITIVE INHIBITION OF SARS-CoV-2	93.855	139,922	-
NIH	1-R21-AI167289-01	Identifying mucin O-glycans in the regulation of Staphylococcus aureus pathogenesis	93.855	9,366	-
NIH	1-R61-AI161297-01	Immune engineering of optimized sequential immunization strategies for HIV vaccines	93.855	343,865	330,090
NIH	1-R61-AI161805-01	Combinatorial and computational design of bnAb mRNA vaccines for HIV	93.855	36,663	-
NIH	2-R01-AI126592-07A1	Chemical Probes of Mycobacteria	93.855	41,771	-
NIH	3 DP2 AI136597-01S1	Developing powerful daisy drive systems for the precise alteration of local populations	93.855	163,356	-
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	5-F32-AI161868-02	Engineering chimeric gene therapy vectors with enhanced packaging capacity - PDF: V. Madigan	93.855	68,661	-
NIH	5-R01-AI016892-43	AAA+ proteolytic machines	93.855	445,008	-
NIH	5-R01-AI055258-18	Synthetic Ligands for Directing Immune Responses	93.855	595,359	-

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Federal Agency	Government Contract Number	Master Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NIH	5-R01-AI126592-06	The Chemistry and Biology of Galactofuranose-Containing Glycans	93.855	194,476	-
NIH	5-R01-AI141543-03	Target-specific antimalarial compound identification using phenotypic assays	93.855	382,568	-
NIH	5-R21-AI149694-02	Systematic discovery, characterization, and design of novel genome editing and delivery tools using a high-throughput metagenomic screening pipeline	93.855	130,559	-
NIH	5-R21-AI151827-02 REVISED	Dissecting the mechanism of cyclophosphamide-enhanced antibody efficacy	93.855	109,238	-
NIH	5-R21-AI156664-02	Development of an emulsion-based method for repertoire-scale paired-chain T cell receptor sequencing	93.855	182,373	-
NIH	5-R33-AI121669-04	Engineering "Phagebody" Antimicrobials for Carbapenem-Resistant Enterobacteriaceae	93.855	5,624	-
NIH	5-R61-AI161297-02	Immune engineering of optimized sequential immunization strategies for HIV vaccines	93.855	432,747	-
NIH	5-R61-AI161805-02	Combinatorial and computational design of bnAb mRNA vaccines for HIV	93.855	488,083	-
NIH	5-U19-AI131135-04 REVISED	3D Models of Engineered Human iPS Cells to Investigate Neurotropic Virus Infections	93.855	3,615	-
NIH	5-U19-AI131135-05	3D Models of Engineered Human iPS Cells to Investigate Neurotropic Virus Infections	93.855	27,781	-
NIH	5-U19-AI131135-05 REVISED	3D Models of Engineered Human iPS Cells to Investigate Neurotropic Virus Infections	93.855	1,431,232	813,393
NIH	1 T32 GM136540-01A1	Pre-doctoral Training in Fundamental Approaches to Biochemistry and Cell and Molecular Biology	93.859	1,205,804	-
NIH	1DP2GM128200-01	Nanometer distance assay to uncover protein dynamics	93.859	817,341	-
NIH	1-DP2-GM140922-01	An Evolutionary Framework For Identifying Determinants Of Colonization In Human Microbiomes	93.859	455,136	-
NIH	1-F31-GM146448-01 REVISED	Biochemical and Biophysical Studies of Human Ribonucleotide Reductase	93.859	4,349	-
NIH	1-F32-GM140548-01A1	Mechanistic dissection of dynamics of transcriptional regulation by chromatin looping	93.859	49,136	-
NIH	1-F32-GM143840-01	Structural Determination and Design of Drug Interactions with Ribonucleotide Reductase	93.859	53,549	-
NIH	1-F32-GM143865-01	Development of Nontrigonal Phosphorus Catalysts for Redox-Mediated Cross-Coupling Transformations	93.859	56,986	-
NIH	1-F32-GM143898-01	Determinants of elongation rate differences between B. subtilis and E. coli RNA polymerases	93.859	47,460	-
NIH	1-F32-GM145072-01 REVISED	Structure function investigations of radical transfer and disulfide exchange in a class Ia ribonucleotide reductase	93.859	3,809	-

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Federal Agency	Government Contract Number	Master Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NIH	1-F32-GM146391-01	Enantioselective Thioetherification of Olefins Guided by CuH Catalysis	93.859	10,282	-
NIH	1-P41-GM132079 -01	MIT Harvard Center for Magnetic Resonance-Year 1	93.859	-68,414	-
NIH	1-R01-GM137138-01	A high-resolution 1.3-GHz LTS/HTS NMR magnet (1.3G)	93.859	195,891	-
NIH	1-R01-GM139055-01A1	Diamond Rotors	93.859	314,280	-
NIH	1-R01-GM141275-01A1	Selective Catalytic Strategies for Carbohydrate Synthesis	93.859	10,880	-
NIH	1-R01-GM144542-01	Tools to determine and analyze the structures of molecular machines in motion	93.859	4,835	-
NIH	1-R01-GM145787-01	Chemical Approaches to Studying the Mechanisms and Biophysical Properties of Complex Metallocofactors	93.859	99,213	-
NIH	1-R21-GM129688-01	A 10-K REBCO 23.5-T magnet towards a tabletop liquid-helium-free 1-GHz magnet for microcoil NMR spectroscopy	93.859	0	-
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	87,212	-
NIH	1-R35-GM141517-02 REVISED	Structure and function of ClpXP	93.859	277,678	-
NIH	1-R35-GM141834-01	Structure-Function of Nucleo-Cytoplasmic Communication	93.859	364,930	-
NIH	1R35GM141861-01	Manifold representations and active learning for 21 st century biology	93.859	381,362	-
NIH	1-R35-GM143033-01	Multiscale tools and approaches for understanding and engineering cell-fate transitions	93.859	362,813	-
NIH	1-R35-GM144115-01	Tissue morphogenesis: From signals to forces	93.859	131,810	-
NIH	2 R01 GM131627-03A	Structure and function of the monotopic phosphoglycosyl transferase superfamily: Initiators of biosynthesis of complex bacterial glycoconjugates	93.859	369,676	156,262
NIH	2-R01-GM024663-44A1	Genetic Analysis of Nematode Egg Laying and Co-regulated Behavioral Systems	93.859	1,621	-
NIH	2-R01-GM039334-33	Deciphering the Principles of Membrane-Associated Glycan Assembly for Glycoconjugate Biosynthesis	93.859	91,600	-
NIH	2R01GM066976-14A1	Structures and lipid interactions of curvature-inducing membrane peptides by NMR	93.859	0	-
NIH	2-R01-GM085319-13	Function of Sequence-specific RNA Binding Proteins	93.859	9,154	-
NIH	2-R01-GM088204-11A1	Structures and Dynamics of Proton- and Cation-Dependent Channels and Transporters	93.859	102,925	-
NIH	2-R01-GM126376-05	Metallobiochemistry of innate immunity and bacterial physiology	93.859	210,123	69,097
NIH	2-R35-GM122483-06	Metal-Catalyzed Methods for Organic Synthesis	93.859	61,098	-
NIH	2-T32-GM008334-30	Interdepartmental Biotechnology Training Program	93.859	0	-

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NIH	3-F32-GM131592-02S1	Chemo- and Regio- Selective Lysine Modification on the Surface of Native Proteins: Synthetic Methods for the Improvement of Cancer Therapeutics (PDF: Dhanjee)	93.859	38,704	-
NIH	3-F32-GM137477-02S1 REVISED	Developing glycan-directed tools to investigate microbial infection	93.859	68,887	-
NIH	3-P41-GM132079-03S1	MIT Harvard Center for Magnetic Resonance-Year 1	93.859	52,147	-
NIH	3-R01-GM130936-02S1	Reagents for Chemical Oligophosphorylation, Synthesis of Oligophosphate-Organic Molecule Conjugates, and Biochemical Studies	93.859	78,248	-
NIH	3--R01-GM135413-03S1	Dissecting the functional organization of the serotonergic system in C. elegans	93.859	29,953	-
NIH	3-R35-GM122483-03S1	Metal-Catalyzed Methods for Organic Synthesis	93.859	12,453	-
NIH	3-R35-GM126982-04S1	Metalloenzyme structure, function and assembly	93.859	55,281	-
NIH	3-R35-GM136354-02S1	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	85,243	-
NIH	4R00GM126277-03	Non-cleaved Electro-Mechanical Expansion (NEME) technology for super-resolution imaging of biological samples with conventional optical microscopes	93.859	260,639	-
NIH	4-R00-GM140265-02	Understanding mechanisms of transcriptional regulation by chromatin adaptor proteins	93.859	41,418	-
NIH	5-F31-GM131648-03	Structural Basis of Metallocofactor Delivery and Repair	93.859	42,686	-
NIH	5-F32-GM129882-03 REVISED	Taming radical enzymes through directed evolution and structural analysis	93.859	43,203	-
NIH	5-F32-GM130071-03	Materials Approaches for Understanding Biological Energy Transduction and Bifurcation	93.859	3,091	-
NIH	5-F32-GM133056-03	Structural Characterization of AdoMet Radical Enzyme-Catalyzed Posttranslational Modifications in Bacterial Anaerobic Metabolism	93.859	76,927	-
NIH	5-F32-GM133116-03	Chemical probes of mycobacterial growth and persistence	93.859	65,271	-
NIH	5-F32-GM134568-02	Defining Adaptors for mRNA Degradation in Bacteria	93.859	73,749	-
NIH	5-F32-GM134576-02 REVISED	Structural and functional characterization of phosphoglycosyl transferases from human pathogens	93.859	45,257	-
NIH	5-F32-GM134577-03	Investigating mechanisms regulating cell adhesion during tissue remodeling	93.859	67,952	-
NIH	5-F32-GM136023-03 REVISED	Design and synthesis of nucleoside-based small molecules to inhibit phosphoglycosyl transferases	93.859	61,277	-
NIH	5-F32-GM136190-02	Living Additive Expansion Microscopy	93.859	66,693	-
NIH	5-F32-GM137478-02 REVISED	Primary and Secondary Sphere Effects on the Valence Isomerism of Fe-S Clusters	93.859	-3,737	-

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Federal Agency	Government Contract Number	Master Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NIH	5-F32-GM137510-02 REVISED	Investigation of the design, structure and mechanism of Mena protein interaction inhibitors	93.859	59,835	-
NIH	5-F32-GM137543-03	Developing Cyclopentadiene as a Reagent in Bioorthogonal Chemistry	93.859	60,716	-
NIH	5-F32-GM139231-02	Exploring novel mechanisms of antiviral immunity in bacteria.	93.859	63,363	-
NIH	5-F32-GM139304-02	The Structures of hVDAC-1 and hVDAC-2 by High Frequency Magic Angle Spinning Nuclear Magnetic Resonance Spectroscopy	93.859	60,628	-
NIH	5-F32-GM142152-02 REVISED	Investigating mechanisms regulating cytoskeletal dynamics and alignment during epithelial tissue folding	93.859	65,025	-
NIH	5-F32-GM142288-02	Development of Small Molecule Probes for the Selective Modification and Labeling of the Mycobacterial Cell Wall	93.859	54,629	-
NIH	5-K99-GM135536-02	In-depth characterization of the metabolic effect of the bacterial alamorne ppGpp	93.859	14,875	-
NIH	5K99GM136915-02	Investigating how mechanical connectivity yields developmental robustness	93.859	79,112	-
NIH	5-K99-GM140212-02	Evolutionary adaptation and spatial organization of signaling in the Mitotic Exit Network	93.859	89,301	-
NIH	5-P41-GM132079 -03	MIT Harvard Center for Magnetic Resonance-Year 1	93.859	68,414	-
NIH	5-P41-GM132079-02	MIT Harvard Center for Magnetic Resonance-Year 1	93.859	3,975	-
NIH	5-P41-GM132079-03	MIT Harvard Center for Magnetic Resonance-Year 1	93.859	614,884	-
NIH	5-R00-GM130896-04	Molecular Mechanisms regulating chromatin looping in time and space	93.859	105,781	-
NIH	5-R01-GM024663-43	Genetic Analysis of Nematode Egg Laying and Co-regulated Behavioral Systems	93.859	120,898	-
NIH	5-R01-GM031030-38	Molecular Genetics of Rhizobium Nodulation Plasmids	93.859	201,451	-
NIH	5-R01-GM034277-36	Regulation of mRNA Processing	93.859	474,929	-
NIH	5-R01-GM039334-32 REVISED	Deciphering Membrane-Associated Glycan Assembly and Transfer	93.859	265,311	-
NIH	5-R01-GM044783-29	Protein Chemistry	93.859	274,304	-
NIH	5-R01-GM049039-24	Endovascular Devices and Vascular Repair	93.859	-25,125	-
NIH	5-R01-GM052339-25	Initiation of DNA Replication of Yeast Chromosomes	93.859	66,342	-
NIH	5-R01-GM066976-17	Structures and lipid interactions of curvature-inducing membrane peptides by NMR	93.859	127,426	-
NIH	5-R01-GM081871-12	Structure based Prediction of the interactome	93.859	206	-
NIH	5-R01-GM082899-13	Cell cycle regulation and chromosome organization in Caulobacter crescentus	93.859	20,970	-
NIH	5-R01-GM085319-12 REVISED	Function of Sequence-specific RNA Binding Proteins	93.859	41,273	-
NIH	5-R01-GM088204-10	Solid-state NMR of the influenza M2 protein in lipid bilayers	93.859	41,438	-

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Federal Agency	Government Contract Number	Master Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NIH	5-R01-GM089732-11	Synthesis and Study of Cyclotryptamine and Diketopiperazine Alkaloids	93.859	107,719	-
NIH	5-R01-GM101988-41 REVISED	Sequence Determinants of Protein Structure and Stability	93.859	43,333	-
NIH	5-R01-GM102311-08	Environmental modulation of microbial conflict and cooperation	93.859	29,229	-
NIH	5-R01GM105984-08 REVISED	Investigating Mechanisms of Force Transmission in Tissue Morphogenesis	93.859	230,830	-
NIH	5-R01-GM108348-07	Compressive Genomics for Large Omics Data Sets: Algorithms, Applications and Tools	93.859	-8,812	-
NIH	5-R01-GM110048-06	Analysis and design of protein interactions that regulate cell death	93.859	168,401	-
NIH	5-R01-GM114190-07 REVISED	Polymer models of mitotic and interphase chromosomes	93.859	194,842	-
NIH	5-R01-GM114547-09	Synthetic Methods based on Biphilic Phosphorus Catalysts	93.859	397,917	-
NIH	5-R01-GM118695-04	Bioinorganic Explorations of Host-Defense Proteins	93.859	237,378	-
NIH	5-R01GM125646-04 REVISED	Investigating RhoA GTPase regulation in sculpting tissues	93.859	178,691	-
NIH	5-R01-GM126376-02	Metallobiochemistry of innate immunity and bacterial physiology	93.859	29,460	29,460
NIH	5-R01-GM126376-04	Metallobiochemistry of innate immunity and bacterial physiology	93.859	22,575	-
NIH	5-R01-GM129007-04	Mapping, modeling and manipulating the interactions of protein domains that bind short linear motifs	93.859	254,555	-
NIH	5-R01-GM130936-03	Reagents for Chemical Oligophosphorylation, Synthesis of Oligophosphate-Organic Molecule Conjugates, and Biochemical Studies	93.859	211,209	-
NIH	5-R01-GM131627-02 REVISED	Structure and function of the monotopic phosphoglycosyl transferase superfamily: Initiators of biosynthesis of complex bacterial glycoconjugates	93.859	59,232	49,862
NIH	5-R01-GM132997-32	High Field DNP and EPR in Biological Systems	93.859	29	-
NIH	5-R01-GM132997-34	High Field DNP and EPR in Biological Systems	93.859	413,117	-
NIH	5-R01-GM134734-04	Nuclear Organization and Dynamics of Mediator and RNA Polymerase II in Living Stem Cells	93.859	250,297	-
NIH	5-R01-GM135413-03	Dissecting the functional organization of the serotonergic system in C. elegans	93.859	290,318	-
NIH	5-R01-GM136882-03	Modeling the Organometallic Chemistry of Radical S-adenosylmethionine Enzymes	93.859	265,053	-
NIH	5-R01-GM137138-02	A high-resolution 1.3-GHz LTS/HTS NMR magnet (1.3G)	93.859	483,118	-
NIH	5-R01-GM140108-02	Mechanobiology of Vimentin Intermediate Filaments in 3D Collective Cell Migration	93.859	252,455	122,830
NIH	5-R21-GM134240-02	Inverting Coupling Selectivity with Cooperative Metal-Ligand Constructs	93.859	-3,006	-
NIH	5-R21-GM135780-02	Esterase Specificity for Pharmacology and Chemical Biology	93.859	-23,454	-

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Federal Agency	Government Contract Number	Master Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NIH	5-R21-GM140613-02	Acoustically-driven optical-interferometric microscope for cell characterization	93.859	252,779	-
NIH	5-R25-GM116705-05	IMPACT Program for Biomedical Researcher Career Development	93.859	58,474	44,545
NIH	5-R35 -GM142634-02	Mechanisms regulating ribosome assembly and function in stem cells and vertebrate development.	93.859	453,775	-
NIH	5-R35-GM118066-05	Causes and consequences of aneuploidy	93.859	-20,211	-
NIH	5-R35-GM122483-05	Metal-Catalyzed Methods for Organic Synthesis	93.859	988,039	-
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	430,281	-
NIH	5-R35-GM124732-05	Evolution and Regulation of Bacterial Proteome Composition	93.859	370,395	-
NIH	5-R35-GM126982-05	Metalloenzyme structure, function and assembly	93.859	335,732	-
NIH	5-R35-GM133580-04	From epigenome to genome and back: disentangling the relationship between epigenetic modifications and chromatin organization	93.859	449,275	-
NIH	5-R35-GM136354-03	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	447,068	-
NIH	5-R35-GM141963-02	Development of New Strategies for Chemical Synthesis and Study of Complex Natural Products	93.859	739,303	-
NIH	5-R37-GM057073-22	Structure-Function Relationship of Glycosaminoglycans	93.859	105,029	-
NIH	5-RM1-GM135102-03	A universal pipeline for functional characterization of the human microbiota at a massive scale	93.859	1,623,278	1,120,693
NIH	5-T32-GM007287-45	Pre-Doctoral Training in Biological Sciences	93.859	117	-
NIH	5-T32-GM087237-12	Graduate Training in Computational and Systems Biology	93.859	464,634	-
NIH	7F32GM134557-03 REVISED	Protein fragments as cotranslationally-acting inhibitors	93.859	53,758	-
NIH	1-R01-HD103847-01A1	How do Cortical regions selective for visual scenes develop in human infants?	93.865	222,038	-
NIH	1-R01-HD105947-01	Genetically Programmed Pancreatic Organoids with Self-Adaptive Multi-Lineage Population Control	93.865	173,543	57,789
NIH	1-R01-HD110335-01	Parsing the Interplay Between Biophysical and Biochemical Microenvironment Cues On Endometriosis Lesion Phenotypes Using Microphysiologial Systems	93.865	27,606	-
NIH	3-F32-HD100064-02S1	Neurocognitive Basis of Language Comprehension in Children with Dyslexia	93.865	2,500	-
NIH	5-DP1-HD091947-05	How Does the Functional Organization of the Human Brain Arise in Development?	93.865	423,525	-

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Federal Agency	Government Contract Number	Master Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NIH	5-F32-HD096829-04	How infants use the affiliations of their caregivers to evaluate others.	93.865	21,044	-
NIH	5-F32-HD097982-03 REVISED	Linguistic Experience and Generalization: Early Links between Sounds,Words, and Grammar	93.865	63,734	-
NIH	5-F32-HD100064-03	Neurocognitive Basis of Language Comprehension in Children with Dyslexia	93.865	60,299	-
NIH	5-F32-HD103363-02	Neural foundations of learning, reasoning, and surprise in human infants [PDF: S. Liu]	93.865	76,230	-
NIH	5-R01-HD085866-05	Mitotic exit control	93.865	8,566	-
NIH	5-R01-HD097135-04 REVISED	Agonist-Antagonist Myoneural Interface for Functional Limb Restoration after Transtibial Amputation	93.865	396,989	-
NIH	1 P30 AG064190-01	MIT Roybal Center for Translational Research to Improve Healthcare for the Aging	93.866	77,708	63,397
NIH	1-F32-AG072813-01	Engineering a Vascularized Brain-Chip for Probing and Evaluating Mechanisms of Alzheimer’s Disease	93.866	64,457	-
NIH	1-K99-AG073466-01	Impact of DNA double-strand breaks on 3D genome organization and genome stability in Alzheimer’s disease	93.866	99,536	-
NIH	1-R01-AG062335-01	Elucidating the Molecular Mechanisms of Neuropsychiatric Symptoms in Alzheimer's Disease	93.866	229,092	-
NIH	1-R01-AG069232-01A1	Manipulating Neural Oscillations with Non-Invasive Sensory Stimulation for Alzheimer's Disease Intervention	93.866	57,877	-
NIH	1-R01-AG070831-01	Mechanisms of pathology and neuronal hyperactivity in a memory circuit in Alzheimer's disease	93.866	345,229	-
NIH	1-R01-AG074003-01	Single-cell epigenomic and trancriptional dissection of sex-specific differences in Alzheimer’s Disease	93.866	239,338	-
NIH	1-R56-AG069192-01	The infectious etiology of Alzheimer's disease revealed at nanoscale precision	93.866	737,471	578,478
NIH	1-R56-AG069232-01	Manipulating neural oscillations with non-invasive sensory stimulation for Alzheimer's disease intervention	93.866	349,834	-
NIH	1-RF1-AG054012-01	Cell type specific epigenetic analysis to understand complex mechanisms underlying Alzheimer's disease phenotypes	93.866	167	-
NIH	1-RF1-AG054012-01 REVISED	Cell type specific epigenetic analysis to understand complex mechanisms underlying Alzheimer's disease phenotypes	93.866	2,051	-
NIH	1-RF1-AG054321-01 REVISED	Demystifying Microglia in Aging and Alzheimer's Disease	93.866	10,827	-
NIH	1-RF1-AG058504-01 REVISED	Solid State NMR Studies of Amyloid Proteins	93.866	722,798	-
NIH	1-RF1-AG062377-01 REVISED	Dissection of endosomal trafficking mechanisms in Alzheimers Disease	93.866	520,939	-
NIH	1-U01-AG066757-01	Development of PU.1 Inhibitory Modulators as Novel Therapeutics for Alzheimer's Disease	93.866	161,904	146,136

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Federal Agency	Government Contract Number	Master Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NIH	3-P30-AG064190-02S1	MIT Roybal Center for Translational Research to Improve Healthcare for the Aging	93.866	114,247	32,894
NIH	3-P30-AG064190-02S2	MIT Roybal Center for Translational Research to Improve Healthcare for the Aging	93.866	87,040	-
NIH	3-RF1-AG059661-01S1	Molecular structures of tau aggregates studied by solid-state NMR	93.866	526,303	-
NIH	5 P30 AG064190-02	MIT Roybal Center for Translational Research to Improve Healthcare for the Aging	93.866	228,882	-
NIH	5-F31-AG069418-02	Investigation of Seeded Alzheimer's Disease Tau Fibrils with Solid-State NMR	93.866	43,159	-
NIH	5-R00-AG050749-05	Quantitation and biochemical characterization of autophagy's role in aging	93.866	92,740	-
NIH	5-R01-AG049897-05	A Randomized Controlled Trial of Health Care Hotspotting	93.866	138,773	23,111
NIH	5-R01-AG058002-05	Epigenomic, transcriptional and cellular dissection of Alzheimer's variants	93.866	1,014,046	640,093
NIH	5-R01-AG062335-04	Elucidating the Molecular Mechanisms of Neuropsychiatric Symptoms in Alzheimer's Disease	93.866	828,464	49,855
NIH	5-R01-AG067151-02	Single-Cell Transcriptional and Epigenomic Dissection to Identify Therapeutic Targets for ALS and FTD	93.866	905,972	140,537
NIH	5-R01-AG074003-02	Single-cell epigenomic and trancriptional dissection of sex-specific differences in Alzheimer’s Disease	93.866	368,939	-
NIH	5-R37-AG032449-14	Determinants of Elderly Health: The Role of Place-Based Factors	93.866	560,071	176,613
NIH	5-U01-AG066757-02 REVISED	Development of PU.1 Inhibitory Modulators as Novel Therapeutics for Alzheimer's Disease	93.866	1,389,740	1,047,134
NIH	7-R01-AG058002-02	Epigenomic, transcriptional and cellular dissection of Alzheimer's variants	93.866	468,901	-
NIH	1-F31-EY033996-01	Elucidating the Role of Dorsal Lateral Geniculate Nucleus Burst-Mode Firing in Retinal Inactivation Induced Recovery from Monocular Deprivation	93.867	14,932	-
NIH	1F32EY032756-01A1	Visual cortex circuits mediating arousal and visual discrimination	93.867	20,090	-
NIH	1K99EY032603-01	Towards a computationally precise characterization of the human ventral visual pathway	93.867	108,964	-
NIH	1-R01-EY033638-01	CRCNS: Resolving human face perception with novel MEG source localization methods	93.867	73,226	-
NIH	2R01EY011289-34	Novel Optical Diagnostics with Optical Coherence Tomography	93.867	178,199	183,914
NIH	2-R01-EY023037-09A1	Behavioral Consequences and cellular substrates of plasticity in visual cortex	93.867	27,991	-
NIH	2-R01-EY025437-06A1	in vivo imaging of circuit remodeling in mouse visual cortex	93.867	227,170	-
NIH	5-F31-EY031259-02	Distinct long-range inputs to prefrontal cortex coordinate visual decision making	93.867	42,049	-

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Federal Agency	Government Contract Number	Master Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NIH	5-K99-EY029326-02 REVISED	Synaptic and intrinsic mechanisms underlying visual cortical enhancement following retinal inactivation	93.867	-9,584	-
NIH	5-P30-EY002621-43	Core-Vision Processes	93.867	-51,541	-
NIH	5-P30-EY002621-44	Core-Vision Processes	93.867	664,012	-
NIH	5-R01-EY011289-35	Novel Diagnostics With Optical Coherence Tomography	93.867	-27,760	-
NIH	5-R01-EY011289-36	Novel Optical Diagnostics with Optical Coherence Tomography	93.867	399,376	-
NIH	5-R01-EY020517-11	Project Prakash: Development of Object Perception After Late Sight Onset	93.867	505,341	-
NIH	5-R01-EY023037-08	Behavioral Consequences and cellular substrates of plasticity in visual cortex	93.867	61,461	-
NIH	5-R01-EY025437-03	in vivo imaging of inhibitory circuit remodeling in mouse visual cortex	93.867	95	-
NIH	5-R01-EY025437-05 REVISED	in vivo imaging of inhibitory circuit remodeling in mouse visual cortex	93.867	21,161	-
NIH	5-R01-EY028219-04	Astrocyte-neuron interactions in visual cortex circuits	93.867	154,265	-
NIH	5-R01-EY029245-04 REVISED	Using the principles of synaptic plasticity to promote recovery from amblyopia	93.867	508,934	-
NIH	5-R01-EY029666-04	Neural Mechanisms for Feature-Based Attention	93.867	641,575	-
NIH	5-R21-EY032369-02	Multimodal probes for multiscale calcium imaging	93.867	195,453	-
NIH	75N97020C00013	COVID-19: A Federated COVID-Rich ICU Database	93.RD	188,705	41,220
		Total for NIH		**114,336,369**	**16,344,051**
		TOTAL for Department of Health & Human Services		**121,003,982**	**16,438,421**

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DEPARTMENT OF HOMELAND SECURITY					
DHS	70FB7020C00000019	COVID-19: Development of alternative foundation system(s) for the SEED post-disaster housing unit for OCONUS tropical islands	97.RD	79,538	-
		Total for Department of Homeland Security		**79,538**	**-**
		TOTAL for Department of Homeland Security		**79,538**	**-**

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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	92,561	-
DOT	13-C-AJFE-046	Center of Excellence for Alternative Jet Fuels and Environment	20.109	202,447	-
DOT	13-C-AJFE-048	Center of Excellence for Alternative Jet Fuels and Environment	20.109	577,457	209,997
DOT	13-C-AJFE-MIT	Center of Excellence for Alternative Jet Fuels and Environment	20.109	970,914	-
DOT	13-C-AJFE-MIT-01	Center of Excellence for Alternative Jet Fuels and Environment	20.109	130,707	-
DOT	13-C-AJFE-MIT-045	Center of Excellence for Alternative Jet Fuels and Environment	20.109	151,165	-
DOT	13-C-AJFE-MIT-047	Center of Excellence for Alternative Jet Fuels and Environment	20.109	17,743	-
DOT	13-C-AJFE-MIT-050	Center of Excellence for Alternative Jet Fuels and Environment	20.109	196,997	39,400
DOT	13-C-AJFE-MIT-052	Center of Excellence for Alternative Jet Fuels and Environment	20.109	335,430	-
DOT	13-C-AJFE-MIT-075	Center of Excellence for Alternative Jet Fuels and Environment	20.109	98,220	-
DOT	13-C-AJFE-MIT-086	Center of Excellence for Alternative Jet Fuels and Environment	20.109	104,823	-
DOT	13-C-AJFE-MIT-091	Center of Excellence for Alternative Jet Fuels and Environment	20.109	120,476	-
DOT	693JJ618C000010	Augmented Reality for Railroad Operations Using Head-up Displays	20.RD	118,944	44,032
		Total for Department of Transportation		**3,117,882**	**293,429**
		TOTAL for Department of Transportation		**3,117,882**	**293,429**

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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	15,196	-
DOI	D18AC00037	Many-body atomic clocks based on non-equilibrium correlated quantum matter	12.910	170,444	144,752
DOI	D18AP00039	Adaptive-focus topological features for machine-learning-driven discovery of 2D coordination polymers	12.910	158,390	-
DOI	D19AP00037	Dislocation-free heteroepitaxy or IR devices by remote epitaxy	12.910	473,227	-
DOI	R18AC00109	PILOT TESTING DYNAMIC OPTIMIZED, PHOTOVOLTAIC-POWERED, TIME-VARIANT ELECTRODIALYSIS REVERSAL DESALINATION SYSTEMS	15.506	9,136	-
DOI	R19AC00104	HIGH RECOVERY PULSED ELECTRIC FIELD ELECTRODIALYSIS REVERSAL DESALINATION TO MINIMIZE BRINE AND MITIGATE SCALE AT LOW COST	15.506	53,861	-
DOI	R22AC00183-00	Multi- market pilot of low-cost, time-variant electrodialysis reversal desalination systems with optimized brine management	15.506	134,422	-
DOI	G21AP10035-00	Improving seismicity detection to map active structures in the Central Virginia Seismic Zone: Collaborative Research with Massachusetts Institute of Technology and Boston University	15.807	38,712	-
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	13,315	-
DOI	G22AP00198-00	Induced seismicity and aseismic slip on rough faults	15.807	3,845	-
		Total for Department of Interior		**1,070,547**	**144,752**
Department of Education					
ED	91990020C0105	Open Source Standard Wallet Application	84.RD	252,409	-
		Total for Department of Education		**252,409**	**-**
Department of Agriculture					
USDA	59-8042-7-007	Fluid Dynamics of Impact and Mixing for Improved Washing of Fresh and Fresh-cut Produce	10.001	13,967	-
USDA	58-6000-0-0051	Rural / Urban Cost of Living Differences	10.250	11,603	-
USDA	2021-67021-33999	Nanosensors for Measuring and Decoding Immune Signaling Waveforms In Planta	10.310	66,861	-
		Total for Department of Agriculture		**92,430**	**-**

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Federal Agency	Government Contract Number	Master Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
Other Agencies					
Misc.	LG-250130-OLS-21	Community Tracking Indicators for Open and Inclusive Scholarship	45.312	62,120	-
Misc.	83618301	The Hawaii Island Volcanic Smog Sensor Network (HI-Vog)	66.509	39,869	7,379
Misc.	84000501-0	Leveraging comprehensive organic oxidation experiments for the development of improved atmospheric chemical mechanisms	66.509	38,552	-
Misc.	EAC-20-0067	Taking Stock of American Election Administration Eight Years after the PCEA	90.RD	85,427	-
Misc.	AID-OAA-A-12-00095	CITE and IDIN	98.001	2,342,832	798,658
Misc.	7200AA21CA00009	Strengthening Development Research and Inclusive Innovation in Latin America through the Center for Innovation and Technology Network	98.012	914,678	104,471
Misc.	AID-OAA-A-16-00058	Ultra-Low Energy Drip Irrigation for MENA Countries	98.RD	572,222	74,740
		Total for Other Agencies		**4,055,699**	**985,248**
		TOTAL for Miscellaneous Federal Govt		**5,471,085**	**1,129,999**

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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		Technology maturation for a high-sensitivity and high-resolving power x-ray spectrometer	43.001	3,744	-
NASA	80NSSC17K0561	Signatures of the multiple scales of motion in shaping marine phytoplankton biogeography	43.001	8,904	-
NASA	80NSSC17K0773	Generating mare magmas by lunar magma ocean cumulate remelting: Experiments and models	43.001	8,989	-
NASA	80NSSC18K0457	Large Geodetic Array Processing and Correlation Impacts	43.001	112,221	-
NASA	80NSSC18K0553	Solar System Planetary Geodesy Research	43.001	51,350	-
NASA	80NSSC18K0682	The Design, Analysis and Research with Retro-reflector Arrays	43.001	28,291	-
NASA	80NSSC18K0849	The MIT-Hawaii-IRTF Joint Campaign for NEO Spectral Reconnaissance	43.001	74,363	-
NASA	80NSSC18K1004	Earth, Mars or YORP spinup: Isolating the mechanisms for asteroid surface refreshing	43.001	59,003	-
NASA	80NSSC18K1057	ASPECT: Active Shoreline Processes and Evolution of Coasts on Titan	43.001	173,087	-
NASA	80NSSC18K1091	Modeling extreme mass ratio inspirals: How accurate must the models be?	43.001	110,099	-
NASA	80NSSC18K1643	Plasma and Energetic Particle Archive for Jovian Magnetospheric Interactions with the Galilean Moons	43.001	20,887	-
NASA	80NSSC18K1677	Auroral Emissions Radio Observer (AERO)	43.001	710,290	232,017
NASA	80NSSC19K0078	Ionospheric Response to Super Storms and Its Role in Geospace Coupling	43.001	121,862	-
NASA	80NSSC19K0205	Designing applications to foster the health of terrestrial and wetland ecosystems in the coastal zone of West Africa	43.001	157,278	21,107
NASA	80NSSC19K0262	Ionospheric imprint of regional mesopause variability - a four dimensional study of atmospheric coupling	43.001	122,152	90,541
NASA	80NSSC19K0335	High Resolution and High Efficiency X-ray Transmission Grating Spectrometer	43.001	698,012	-
NASA	80NSSC19K0464	The Thermal Maturity of Neoproterozoic Strata: Carbonate Clumped Isotope Thermometry and Biomarker Analyses	43.001	71,373	-
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	101,305	48,937
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	147,199	-
NASA	80NSSC19K0617	Vector Interferometry Space Technology using AERO (VISTA)	43.001	559,677	54,855

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NASA	80NSSC19K0834	Can gravity wave generation in the mesospheric polar vortex drive traveling ionospheric disturbances?	43.001	308,917	224,959
NASA	80NSSC19K0943	Quantifying the Effect of Contrail Cirrus on Climate, Atmospheric Composition, and Air Quality Through Coordinated Modeling and Observation	43.001	186,528	-
NASA	80NSSC19K1277	Swath Mapping Lidar Science and Requirements	43.001	36,887	-
NASA	80NSSC19K1287	NICER (Continuation) - Detector Team Support and Legacy Science	43.001	359,906	27,566
NASA	80NSSC19K1448	CONSTRAINING THE ORBIT AND CHARACTERIZING THE ACCRETION STRUCTURE OF 4U 1626-67 (NICER 2116)	43.001	198	-
NASA	80NSSC19M0224	Surface Deformation and Change with Small Satellite Crosslink Communications and Precision Time Transfer Systems	43.001	-2,019	-2,019
NASA	80NSSC20K0037	PROBING THE ORIGIN OF SLOW PULSATIONS IN 4U 0114+65 (NuSTAR 5134)	43.001	30,105	-
NASA	80NSSC20K0234	Guiding the search for signals of biological and prebiotic processes by the NASA Mars 2020 Rover mission	43.001	254,284	-
NASA	80NSSC20K0238	Enabling Magnetic Studies of Returned Samples with the Mars 2020 Rover	43.001	187,825	-
NASA	80NSSC20K0382	The Impact of Titan's Impacts	43.001	160,391	42,330
NASA	80NSSC20K0400	Demonstration of Pointing Stability to Enable Astrophysics with Rotating Synthetic Aperture Telescopes	43.001	136,231	-
NASA	80NSSC20K0401	Toward Fast, Low-Noise, Radiation-Tolerant X-ray Imaging Arrays for Lynx: Raising Technology Readiness Further	43.001	515,140	292,627
NASA	80NSSC20K0470	SIMULTANEOUS DISC AND CORONA REVERBERATION MAPPING IN AGN MRK 335 (SWIFT 1518037)	43.001	-108	-
NASA	80NSSC20K0484	Delta T: Dynamics and Detectability of Deltas on Titan	43.001	177,151	46,555
NASA	80NSSC20K0499	Confronting Lyman-alpha radiation pressure in galaxy formation simulations	43.001	139,433	-
NASA	80NSSC20K0575	COOLEST CORONA IN EDDINGTON-LIMITED AGN ARK 564 (NuStar)	43.001	-1,831	-
NASA	80NSSC20K0733	XARM observations of black hole accretion flows	43.001	16,006	-
NASA	80NSSC20K0737	MIT Participation in Calibration and Ground Software Development for XRISM	43.001	156,254	-
NASA	80NSSC20K0802	Simultaneous Disc and Corona Reverberation Mapping in AGN Mrk 335 (XMM 84276)	43.001	46,659	-
NASA	80NSSC20K0851	JOINT NUSTAR AND XMM TOO OBSERVATIONS TO CONSTRAIN THE SPINS OF SUPERMASSIVE BLACK HOLES IN TIDAL DISRUPTION FLARES (XMM 5210)	43.001	3,396	-
NASA	80NSSC20K0907	Development of sub-arcsecond x-ray telescope optics	43.001	819,356	112,327

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NASA	80NSSC20K1012	Continuing Development of Bragg Reflector Optics and Gratings for Polarimetry	43.001	107,439	-
NASA	80NSSC20K1084	Mapping the evolution of the accretion flow in Tidal Disruption Events (XMM 82381)	43.001	46,617	-
NASA	80NSSC20K1085	Testing the origin of the X-ray Emission in Gamma-ray Loud NLSI 1H0323+342 (XMM 82378)	43.001	-1,149	-
NASA	80NSSC20K1092	Bubble-based Ocean-worlds Organics Sample Trap (BOOST)	43.001	330,176	112,641
NASA	80NSSC20K1157	Assessing the Impact of Glacial Melt on the Coupled Climate	43.001	-6,620	-
NASA	80NSSC20K1248	A Constellation of Small Satellites to Search for a Transiting Earth-Size Planet in an Earth-like Orbit about a Bright Sun-Like Star	43.001	16,192	-
NASA	80NSSC20K1249	Globe Orbiting Soft X-ray Polarimeter (GOSoX),	43.001	39,380	-
NASA	80NSSC20K1417	Material Mixing on the Moon from Impacts	43.001	132,976	-
NASA	80NSSC20K1584	DO SUPERGIANT FAST X-RAY TRANSIENTS LAUNCH JETS? A MULTIWAVELENGTH STUDY (FERMI 131162)	43.001	25,409	-
NASA	80NSSC20K1785	Model-Data Exploration of Hemispherical Asymmetries in the Magnetosphere/Ionosphere System	43.001	111,662	28,202
NASA	80NSSC20K1846	Lunar Orbiter Laser Altimeter Investigation and Associated Science	43.001	105,265	-
NASA	80NSSC20M0071	RESOURCE: Resource Exploration and Science of OUR Cosmic Environment	43.001	196,682	-
NASA	80NSSC21K0090	LEVERAGING THE SYNERGY BETWEEN TESS AND SPECULOOS: HUNTING FOR EXOPLANETS AROUND THE NEAREST LATE M DWARFS (TESS GI 3279)	43.001	3,626	-
NASA	80NSSC21K0102	TOO OBSERVATIONS TO CONSTRAIN THE SPINS OF SUPERMASSIVE BLACK HOLES IN TIDAL DISRUPTION EVENTS (NICER 3139)	43.001	13,151	-
NASA	80NSSC21K0108	ESTABLISHING THE TESS MISSION'S LEGACY OF LONG-PERIOD PLANETS (TESS 3188)	43.001	25,391	25,391
NASA	80NSSC21K0133	LONG-TERM SYSTEMATIC MONITORING OF HMXB PULSAR OAO 1657-415 (NICER 3149)	43.001	3,683	-
NASA	80NSSC21K0154	Investigating the Intensity of the Early Lunar Dynamo	43.001	178,492	-
NASA	80NSSC21K0216	SPECTRAL/TIMING STUDY OF RXJ0019.8+2156, A SURFACE-NUCLEAR-BURNING WHITE DWARF (NICER 3090)	43.001	20,106	-
NASA	80NSSC21K0354	A SYSTEMATIC STUDY OF TESS ORBITAL PHASE CURVES (TESS GI 3232)	43.001	39,124	-
NASA	80NSSC21K0550	Gravitational-Wave Instrumentation Subject Matter Expert for the NASA LISA Study Office	43.001	141,915	-
NASA	80NSSC21K0557	Response of the seasonal ice zone in the Southern Ocean to changes in the wind	43.001	197,955	-

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NASA	80NSSC21K0660	RELATIVISTIC REFLECTION AND REVERBERATION MAPPING IN A BLACK HOLE BINARY (NICER 3058)	43.001	14,368	-
NASA	80NSSC21K0661	NICER FOLLOW-UP OF AN EXTREME NUCLEAR TRANSIENT (NICER 3146)	43.001	20,353	-
NASA	80NSSC21K0835	Black Hole Spin and Mapping Accretion Flow Evolution in Tidal Disruption Flares (XMM 86365)	43.001	12,715	-
NASA	80NSSC21K0849	T-Rex: Time-resolved Radiation Environment of planet forming disks with XMM-Newton (XMM 86504)	43.001	17,407	-
NASA	80NSSC21K0871	An unprecedented view of high-frequency QPO phenomena in accreting black holes (XMM 86501)	43.001	14,250	-
NASA	80NSSC21K0872	Investigating the vertical structure of the accretion disc wind in Hercules X-1 (XMM 86544)	43.001	69,214	-
NASA	80NSSC21K0874	The interplay between slow slip, fault coupling, and crustal earthquakes	43.001	194,680	11,499
NASA	80NSSC21K1304	MIT–GISS collaborations in Oceans and Climate	43.001	305,861	-
NASA	80NSSC21K1310	The Influence of Traveling Ionospheric Disturbances on Ionospheric Irregularities	43.001	145,215	-
NASA	80NSSC21K1369	Advanced Global Atmospheric Gases Experiment (AGAGE) Collaborative Project: MIT Component	43.001	95,558	-
NASA	80NSSC21K1775	2021 Antarctic Solar Eclipse: Ionospheric response in the southern and northern hemispheres	43.001	44,314	-
NASA	80NSSC21K1802	Tidal Evolution of the Satellite Systems of the Outer Planets	43.001	139,053	-
NASA	80NSSC21M0012	MIT Media Lab: Supporting NASA's SciAct Portfolio	43.001	311,676	-
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	26,184	-
NASA	80NSSC22K0105	Testing whether impact plasmas and a core dynamo magnetized the Moon and Mercury	43.001	5,878	-
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	61,832	-
NASA	80NSSC22K0164	Hunting For Black Holes With Tess (TESS 4190)	43.001	3,918	-
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	12,526	-
NASA	80NSSC22K0179	A Systematic Study To Characterize Rapid Optical Variability Of Agn And Search For Quasi-Periodic Oscillations (TESS 4215)	43.001	8,987	-
NASA	80NSSC22K0459	Teasing out the hidden complexities of slow slip from the geodetic record in Cascadia	43.001	35,006	-

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Federal Agency	Government Contract Number	Master Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NASA	80NSSC22K0961	Identifying Newborn Compact Objects in Fast, Blue Optical Transients Using NICER's Superior Timing Observations (NICER 4156)	43.001	18,513	-
NASA	NNX15AF85G	The Search for Extra-Terrestrial Genomes (SETG)	43.001	390	390
NASA	NNX15AL48G	ROSES: Cassini Data Analysis and Participating Scientists	43.001	9,354	8,355
NASA	NNX16AC98G	Advanced Global Atmospheric Gases Experiment [AGAGE] Collaborative Project: MIT Component	43.001	772,327	245,045
NASA	80NSSC19K1607	Traffic Management Paradigms for Autonomous Environments using Control Theory	43.002	6,405	-
NASA	80NSSC20M0080	Modeling and Analysis of Safety in New Human-Automation Teaming	43.002	184,095	-
NASA	80NSSC21M0108	Combined Experimental and First Principles Tool Development of Interface Analysis in An All Solid-State Battery	43.002	81,075	-
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	108,591	-
NASA	80NSSC22K0193	Investigation of Higher-order Adaptive Methods for Sonic Boom Propagation	43.002	133,377	-
NASA	NNX15AU66A	Swept time-space domain decomposition rule for breaking the latency barrier	43.002	16,373	16,373
NASA	80NSSC21M0181	Motion Planning Algorithms for Automated Assembly of Digital Composites	43.009	73,206	-
NASA	80NSSC18K1579	CLICK mission	43.012	462,527	121,463
NASA	80NSSC18M0042	SPRINT: Scheduling Planning Routing Intersatellite Network Tool	43.012	19,033	-
NASA	80NSSC19K0211	Simulating the Operational Local Volume for Electrospray ion Thrusters (SOLVEiT)	43.012	145,579	49,068
NASA	80NSSC19K0217	MOSAIC: Miniature Optical Steered Antenna for Intersatellite Communication	43.012	75,828	-
NASA	80NSSC20K1019	Dynamic Orbital Slingshot for Redezvous with Interstellar Objects	43.012	-2,405	-
NASA	80NSSC21K0219	Advanced Space Technology Roadmapping Architecture (ASTRA)	43.012	200,346	-
NASA	80NSSC21K0221	Development of New Technologies for Modified Collins Cycle Expanders	43.012	116,066	-
NASA	80NSSC21K0345	REDUCED GRAVITY EXPERIMENTS TO ADVANCE CFD BOILING MODELS FOR CRYOGENIC FLUID MANAGEMENT SYSTEMS	43.012	324,308	-
NASA	80NSSC21K0353	Autonomous Robot Swarms for Lunar Orbit Servicing and Space Asset Assembly	43.012	429,125	98,106
NASA	80NSSC21K0541	A Suborbital Evaluation of Paraffin and Beeswax Formation in Microgravity for Low-Earth-Orbit Propulsion Applications	43.012	198,461	-

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Federal Agency	Government Contract Number	Master Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NASA	80GSFC20C0078	Advancing VGOS from a Budding Concept to a High-Accuracy Global Geodetic Observatory	43.RD	1,529,690	-
NASA	80MSFC17C0012	Imaging X-ray Polarimetry Explorer - Main Project (Phase B - D)	43.RD	158,431	-
NASA	80MSFC19C0050	Thermally stable nanocrystalline Nickel alloys by powder metallurgy	43.RD	262,213	-
NASA	80NSSC21P0025	Autonomous multifunctional sensor platform	43.RD	49,182	-
NASA	80NSSC21P2456 / PO#4200778315	NASA-MIT Optics Development for the Joint Augmented Visual Informatics System Project	43.RD	131,806	-
NASA	80NSSC22PA615	Autonomous multifunctional sensor platform	43.RD	21,169	-
NASA	NNG14FC03C	Transiting Exoplanet Survey Satellite	43.RD	8,641,071	2,810,695
NASA	NNH17CH01C	The Mars Oxygen Isru Experiment (MOXIE) Continuation	43.RD	1,341,771	94,874
		Total for National Aeronautics and Space Administration		**25,645,169**	**4,813,901**
		TOTAL for National Aeronautics and Space Administration		**25,645,169**	**4,813,901**

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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	1,496,244	1,066,821
NSF	CBET-1554398	CAREER: NANO-PARTICLE SELF-ASSEMBLY OUT OF EQUILIBRIUM	47.041	28,144	-
NSF	CBET-1605406	NSF/CBET-BSF: Effect of Sunlight Intensity on Functional Inhomogeneity and Stability of Organic-Inorganic Perovskite Solar Cells	47.041	-103	-
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	44,121	-
NSF	CBET-1704266	Enabling high-throughput computational discovery of stable and active single-site oxidation catalysts	47.041	1,373	-
NSF	CBET-1705923	Engineering a new family of consensus repeat proteins based on nucleoporins	47.041	61,338	-
NSF	CBET-1706193	Collaborative Research: Hybrid Discrete-Continuum Numerical Simulation of Granular Materials	47.041	-28,475	-
NSF	CBET-1729397	DMREF: Computational Design of Next-generation Nanoscale DNA-based Materials	47.041	392,786	245,550
NSF	CBET-1751925	CAREER: Holistic Assessment of the Potential of Byproduct-Derived Alkali-Activated Materials	47.041	47,170	-
NSF	CBET-1804241	Collaborative Research: Dynamic Manipulation of Micro-scale Liquid-Liquid Interfaces within Complex Droplets for Tunable Optics	47.041	9,203	-
NSF	CBET-1804247	Chemical and structural design of inorganic-organic layers for stabilized Li anodes	47.041	7,713	-
NSF	CBET-1805566	Collaborative Research: Establishing Design Principles for Molecular Engineering of High Concentration Redox Electrolytes	47.041	-2,404	-
NSF	CBET-1846426	CAREER: Revealing spin-state-dependent reactivity in open-shell single atom catalysts with systematically-improvable computational tools	47.041	142,448	-
NSF	CBET-1847541	CAREER: Hybrid Biorobotic Matrices to Simulate Diaphragmatic and Myocardial Biomechanics	47.041	171,789	-
NSF	CBET-1907716	Understanding Gas Transport through Nanopores in Graphene Membranes	47.041	52,991	-
NSF	CBET-1936696	Single Molecule Studies of Topologically Complex Polymers	47.041	125,739	-
NSF	CBET-1944007	CAREER: Engineering interphases on omniphobic electrodes for selective electrosynthesis	47.041	3,828	-

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Federal Agency	Government Contract Number	Master Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NSF	CBET-2001231	Flexible Optoelectronic Systems for Chronic Bi-Directional Neural Interfacing	47.041	176,810	-
NSF	CBET-2006299	CAREER: Engineering Heat Conduction Through Alloys and Interfaces	47.041	1,449	-
NSF	CBET-2019245	Collaborative Research: Scale-free continuum percolation of bubbles as a universal mechanism of the boiling crisis	47.041	107,497	-
NSF	CBET-2026225	RAPID: Multiphase flow physics driving respiratory infectious disease transmission	47.041	53,799	-
NSF	CBET-2027870	Collaborative Research: Unraveling the Spatiotemporal Dynamics of Inertio-Elastic Turbulence using Measurements and Data-Infused Simulations	47.041	91,136	-
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	48,353	-
NSF	CBET-2034902	Collaborative Research: Creep-enabled 3D solid-state lithium metal batteries	47.041	158,716	-
NSF	CBET-2045868	CAREER: Elucidation and Development of Electrolyte and Interface Mechanisms Governing Calcium Redox in Nonaqueous Environments	47.041	17,422	-
NSF	CBET-2124194	Developing Nanosensor Chemical Cytometry (NCC) to Support the Development of Cellular Therapeutics	47.041	120,024	-
NSF	CBET-2140775	Career: Information-Theoretic Approach to Turbulence: Causality, Modeling & Control	47.041	18,949	-
NSF	CBET-2146422	CAREER: Systematic Design of Polymers to Reveal the Anomalous Role of Fluorine on Membrane-based Separations	47.041	6,314	-
NSF	CMMI-1634259	Revenue Management For Enterprise Users of Cloud Infrastructure	47.041	1,686	-
NSF	CMMI-1644558	CM/Collaborative Research: A Computational Approach to Customizing Design	47.041	86,387	-
NSF	CMMI-1702689	Collaborative Research: Multiscale modeling and measurement of clay aggregate behavior	47.041	-4,228	-
NSF	CMMI-1727239	An Optimization Framework for Optimal A-B Testing	47.041	38,750	-
NSF	CMMI-1727565	Boundary interactions in pilot-wave hydrodynamics	47.041	66,997	-
NSF	CMMI-1729304	DMREF:GOALI: Discovery and Design of Additives for Novel Polymer Morphology and Performance	47.041	346,384	-
NSF	CMMI-1752172	CAREER: Directed Epitaxial Assembly of Structural Biopolymers in Hierarchical Mesostructures for Enhanced Mechanical Behavior, Mass Transport and Heat Transfer.	47.041	73,796	-
NSF	CMMI-1760025	Electrochemical separation and recovery of metals from liquid alloys	47.041	162,167	-

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Federal Agency	Government Contract Number	Master Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NSF	CMMI-1824297	AN INTEGRATED EXPERIMENTAL AND COMPUTATIONAL PLATFORM FOR DISCOVERY AND PROCESSING OF FUNCTIONAL NANO-EMULSIONS	47.041	219,554	-
NSF	CMMI-1826097	Collaborative Research: Learning to Control Dynamically Complex Objects	47.041	87,139	-
NSF	CMMI-1854833	Hybrid Intelligence for Design: Bridging Human and Machine Intelligences for Collaborative Design of Engineering Systems and Infrastructure	47.041	323,845	-
NSF	CMMI-1922206	DMREF: Collaborative Research: Fundamentals of short-range order-assisted alloy design: Thermodynamics, kinetics, mechanics	47.041	312,918	-
NSF	CMMI-1933416	Collaborative Research: Wettability Control on the Mechanics of Hydrocapillary Fracture	47.041	164,631	-
NSF	CMMI-1942016	Career: Shear Shock Propagation and Damage in Soft Materials	47.041	177,033	-
NSF	CMMI-2021625	NSF CMMI: Dual Faceted Linearization and Its Application to Nonlinear MPC	47.041	126,433	-
NSF	CMMI-2026444	FW-HTF-P Shaping Technology and Institutions for the Work of the Future	47.041	-3,593	-
NSF	CMMI-2039771	D-ISN: TRACK 1: Supply Chain Analysis to Thwart Illegal Logging: Machine Learning-based Monitoring and Strategic Network Inspection	47.041	102,272	-
NSF	CMMI-2045417	CAREER: Integrated Design and Digital Fabrication using Topology Optimization and Material Extrusion 3D Printing	47.041	71,769	-
NSF	CMMI-2114343	Collaborative Research: Interfacial Photopolymerization (IPP): A Method For High-Resolution Digital Printing of Thermoplastics	47.041	16,752	-
NSF	CMMI-2135846	EAGER – Transfer by Contact using Adhesion Engineering for Integration of Two-Dimensional Materials into Functional Devices	47.041	145,339	-
NSF	CMMI-2142460	COVID-19: CAREER: Performance through Curvature-Mechanics of 3D Self-Architected Materials	47.041	24,098	-
NSF	CMMI-2154151	Hydrodynamic quantum analogs	47.041	35,530	-
NSF	ECCS-1653100	CAREER: On-Chip Terahertz Electronic Frequency Combs	47.041	46,053	-
NSF	ECCS-1653553	CAREER: Spin-Orbit Interaction based Spintronics in Superconductors	47.041	84,784	-
NSF	ECCS-1702716	Spectroscopy with Quantum Sensors at the Nanoscale	47.041	10,004	-
NSF	ECCS-1711027	CCSS: Small : Universal Feature Selection in Integrated Monitoring of Large Networks	47.041	-11	-
NSF	ECCS-1808692	Model Reduction of High Dimensional Hidden Markov Models and Markov Decision Processes	47.041	188,471	-
NSF	ECCS-1808828	Electrical switching of magnetic devices by voltage-controlled proton insertion for low-power, high-performance data storage and computing	47.041	-341	-

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Federal Agency	Government Contract Number	Master Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NSF	ECCS-1809314	Collaborative Research: Stability, security and emergency control for reconfigurable networked microgrids	47.041	2,931	-
NSF	ECCS-1809917	CMOS THz Molecular Clock With Enhanced Stability And Energy Efficiency	47.041	5,523	-
NSF	ECCS-1824360	Tag-of-Everything: Secured Wireless Powering and Communication Using THz Spectrum for Ultra-Small, Package-Less ID Chips	47.041	67,316	-
NSF	ECCS-1933556	Collaborative Research: Quantum Communication with Loss-Protected Photonic Encoding	47.041	93,574	-
NSF	ECCS-2000743	Collaborative Research: Kinetic Inductance in Superconducting Nanowire Microwave Devices	47.041	120,575	-
NSF	ECCS-2002570	EAGER: Fundamentals of Modeling and Control for the Evolving Electric Power System Architectures	47.041	1,780	-
NSF	ECCS-2012258	Development of Room Temperature Terahertz Quantum Cascade Lasers	47.041	122,086	-
NSF	ECCS-2023468	Collaborative Research: Scaling Distributed AI Systems based on Universal Optical I/O	47.041	184,890	-
NSF	ECCS-2023987	Collaborative Research: Tellurene mid-infrared integrated photonics	47.041	109,504	-
NSF	ECCS-2026344	Conformable systems for spatiotemporal decoding of facial strains	47.041	154,333	-
NSF	ECCS-2028199	PIC: CMOS-compatible, monolithic, and high-performance optical isolators on silicon	47.041	207,258	-
NSF	ECCS-2028824	EAGER SARE: Physical-Layer Security of THz Communication Using Orbital Angular Momentum and Rapid Frequency Hopping	47.041	102,290	-
NSF	ECCS-2029670	SWIFT: LARGE: Adaptive Radio Frequency Interference Cancellation for Radio Science Observatories	47.041	356,342	-
NSF	ECCS-2044688	CAREER: Conformable Piezoelectrics for Soft Tissue Imaging	47.041	48,094	-
NSF	ECCS-2114439	EAGER: Modeling and Control of COVID-19 Transmission in Indoor Environments	47.041	130,080	-
NSF	ECCS-2128555	2128555 - Collaborative Research: SWIFT:Facilitating Spectrum Access by Noise Guessing	47.041	154,439	-
NSF	ECCS-2132929	ASCENT: PROWESS: Phase-change Reconfigurable Optical WavEfront Synthesis System	47.041	205,373	55,805
NSF	EEC-1936981	Planning Grant: Engineering Research Center for Technologies and Design for Sustainable Offshore Aquaculture (SOA)	47.041	91,388	-
NSF	EEC-2124319	Planning Grant: Engineering Research Center for Connected Eldercare	47.041	36,693	12,500
NSF	EFMA-1641064	EFRI ACQUIRE: Scalable Quantum Communications with Error-Corrected Semiconductor Qubits	47.041	28,122	-

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Federal Agency	Government Contract Number	Master Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NSF	EFMA-1830901	EFRI C3 SoRo: Soft, Strong, and Safe Configurable Robots for Diverse Manipulation Tasks	47.041	551,164	464,129
NSF	EFMA-1935291	EFRI C3 SoRo: Functional-Domain Soft Robots (FunDo SoRo) Precisely Controlled by Quantitative Dynamic Models and Data	47.041	409,178	27,837
NSF	IIP-1717362	PFI:BIC - Development, Deployment and Evaluation of an Intelligent Service System for Personalized Early Literacy Learning Using Mobile Devices	47.041	45,322	9,606
NSF	IIP-1735671	Type II: MIT Innovation Corps Site	47.041	33,961	-
NSF	IIP-1818795	I-Corps Teams: Improving the Energy Efficiency of Transport Refrigeration Units	47.041	197	-
NSF	IIP-1832931	I-Corps New England Regional Innovation Node (NERIN)	47.041	1,164,104	30,845
NSF	IIP-1928909	I-Corps Teams: Robust Filtration Membranes For Harsh Environment Separations	47.041	5,187	-
NSF	IIP-1929013	I-Corps Teams: Synthetic Matrix Solutions for Neurodegenerative Disease Platforms	47.041	701	-
NSF	IIP-1931623	I-Corps Teams: Reducing Exercise-Related Injuries with Fabric-Based Technologiees	47.041	155	-
NSF	IIP-1949121	I-Corps: Ultra-clear, transparent aerogel material developed to enable the next generation of energy efficient windows	47.041	18,846	-
NSF	IIP-1951872	I-Corps Teams: Novel, heat-stable binding proteins for diverse diagnostic applications	47.041	2,222	-
NSF	IIP-2026063	I-Corps Teams: Aquaculture Diagnostics	47.041	8,483	-
NSF	IIP-2029983	I-Corps: Autonomous Robotic Instructor for Workforce Training	47.041	46,593	-
NSF	IIP-2037748	I-Corps Teams: A physicochemical method for improving microorganism viability during manufacturing and storage	47.041	5,054	-
NSF	IIP-2043000	I-Corps: Low carbon method of hydrogen gas production from hydrogen sulfide	47.041	4,585	-
NSF	IIP-2044424	Partnerships for Innovation-Research Partnerships (PFI-TT): The TACO Sparse Tensor Algebra Compiler	47.041	152,568	983
NSF	IIP-2044711	PFI-TT: Bridging the Information Gap in Supply Chain using Internet of Things (IoT)	47.041	172,183	-
NSF	IIP-2103773	I-Corps Teams: Non-Invasive Neurotech for Tactile Stimulation	47.041	1,583	-
NSF	IIP-2110076	I-Corps: Micro-Logistics IoT: Bridging the Information Gap in Supply Chain	47.041	12,107	-
NSF	IIP-2122581	PFI-RP: A high-performance, low-cost chip-scale platform for medical imaging	47.041	76,169	-
NSF	IIP-2123323	I-Corps Teams: Membrane Materials for Efficient Gas and Vapor Separations	47.041	32,181	-

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Federal Agency	Government Contract Number	Master Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NSF	IIP-2131399	I-Corps: Digital Phenotyping to Predict and Prevent Burnout in the Workplace	47.041	52,032	-
NSF	IIP-2133778	I-Corps Teams: Digital twin technology via synthetic data generation	47.041	32,903	-
NSF	IIP-2137197	I-Corps: Application of deep generative models for simulating biological systems	47.041	28,322	-
NSF	SMA-2022413	Innovation Dynamics of Emerging Co-Creation Practices: What are the impacts on Inclusion?	47.041	98,941	-
NSF	TI-2141118	Programmable lithography mask for accelerated innovation and advanced manufacturing of microchips	47.041	24,241	-
NSF	AST-1614868	Shaping the Narrow Jets of Material from Supermassive Black Holes	47.049	7,651	-
NSF	AST-1716251	Establishing the properties of the first stars and supernovae and the origins of the heaviest elements with stellar archaeology	47.049	129,895	-
NSF	AST-1751096	CAREER: Tracing the Birth and Growth of Galaxy Clusters with the South Pole Telescope 3rd Generation Survey	47.049	76,972	-
NSF	AST-1814053	Collaborative Research: Exploring the physics of galaxy clusters with comprehensive cosmological simulations	47.049	47,849	-
NSF	AST-1814259	Simulating galaxy formation with cosmic dust	47.049	-21,399	-
NSF	AST-1828470	MRI [WINTER]: Development of a Wide-Field Infrared Camera for Robotic Surveys of the Dynamic Astronomical Sky	47.049	353,492	-
NSF	AST-1836002	LLAMAS: A Facility Integral Field Spectrograph for the Magellan Telescopes	47.049	1,395,073	-
NSF	AST-1909097	Exploring the LEGO Legacy Survey: Relating Galaxies observed by ALMA to the Milky Way	47.049	175,509	-
NSF	AST-1909307	Collaborative Research: EDGES-3: Validating and Refining Global 21cm Measurements of Cosmic Dawn	47.049	216,683	-
NSF	AST-1909831	Collaborative Research: The impacts of massive BH formation and evolution pathways on GW sources	47.049	18,606	-
NSF	AST-1950348	REU/RET Site: Radio Science in Astronomy, Geodesy, and Geospace Science at MIT Haystack Observatory	47.049	96,975	-
NSF	AST-2007355	Collaborative Research: Discriminating Between Galactic Feedback Models with Next Generation Observations	47.049	133,733	-
NSF	AST-2008031	Collaborative Research: Cosmology with CHIME	47.049	116,385	-
NSF	AST-2107681	Imaging the Dynamic Atmospheres of Evolved Stars at Radio Wavelengths	47.049	30,831	-
NSF	AST-2107724	Collaborative Research: Constraining Fuzzy Dark Matter with Cosmological Simulations	47.049	25,867	-
NSF	CHE-1629358	DMREF: Analysis and Optimization of Polymer Networks for Emerging Applications	47.049	53,555	-

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Federal Agency	Government Contract Number	Master Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NSF	CHE-1653289	CAREER: Nanocomposite Structure Control via Nanoparticle Self-Assembly	47.049	-23,599	-
NSF	CHE-1654415	CAREER: Characterizing Water's Response to Hydrophilic Surfaces	47.049	74,327	-
NSF	CHE-1665383	Coherent Spectroscopy and Coherent Control of Molecules and Materials	47.049	422	-
NSF	CHE-1709993	Collaborative Research: Multiphase Reactivity of Atmospheric Organic Radicals: Gas- vs. Liquid- vs. Particle-phase Chemistry	47.049	4,195	-
NSF	CHE-1800301	Stochastic Path Integral Formalism and Applications to Coherent Energy Transfer	47.049	59,669	-
NSF	CHE-1800410	Molecular Rydberg Spectra Encode Intramolecular Dynamics	47.049	122,909	-
NSF	CHE-1828570	MRI: Development of a broadband THz electron paramagnetic resonance spectrometer	47.049	0	-
NSF	CHE-1836913	EAGER: Analog Quantum Simulation of Dissipative Quantum Dynamics in Condensed-Phase Chemical Systems	47.049	32,068	-
NSF	CHE-1839155	RAISE- TAQS: Room-Temperature Quantum Sensing and Computation using DNA-based Excitonic Circuits	47.049	185,264	-
NSF	CHE-1845464	CAREER: Reprogramming Transcriptional Regulation by Chemical Stabilization of Repressive Homodimers	47.049	263,289	-
NSF	CHE-1900060	Main Group Catalysts for N-H and O-H Activation Chemistry	47.049	145,269	-
NSF	CHE-1900109	Exploration of Non-Equilibrium Interfacial Phenomena in Spin Forbidden Oxidation	47.049	175,722	-
NSF	CHE-1900358	Fragment Embedding for Photochemical Electronic Structure Simulations	47.049	219,270	-
NSF	CHE-1900391	New Cycloaddition and Annulation Strategies for Organic Synthesis	47.049	204,142	-
NSF	CHE-1904453	Collaborative Proposal: Investigation of Fundamental Properties and Electrical Control of Neurotransmitter Flow through Single-Walled Carbon Nanotubes	47.049	24,187	-
NSF	CHE-1904867	Expanding N-Heterocyclic Carbene Surface Chemistry	47.049	32,627	-
NSF	CHE-1945500	CAREER: Fundamentals of conformational and surface water dynamics in supramolecular nanofibers	47.049	159,671	-
NSF	CHE-1955612	Synthesis of d- and p-Block Element Molecules, Reagents, and Precursors	47.049	156,232	-
NSF	CHE-1955628	Sustainable Carboxylation with Carbon Dioxide at Tailored Heterogeneous Electrocatalysts	47.049	23,371	-
NSF	CHE-2029751	COVID-19: Collaborative Research: RAPID: Augmenting Mucosal Gels with Associating Brush Polymers to Prevent COVID19 Infection	47.049	21,943	-
NSF	CHE-2102669	Electrosynthesis via Electrochemical Hydrogen Permeation	47.049	315,651	-

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Federal Agency	Government Contract Number	Master Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NSF	CHE-2108357	Designing Bright and Fast Fluorophores with Large Stokes' Shifts Based on Superradiant Molecular J-Aggregates	47.049	233,186	-
NSF	CHE-2108811	Reactivity of organic radicals in the atmospheric aqueous phase	47.049	167,203	-
NSF	CHE-2144153	CAREER: Development of Novel Domain-Tailored Machine Learning Tools for Organic Reaction Development and Discovery	47.049	909	-
NSF	CHE-2154938	Bootstrap Embedding for Molecules, Materials and Electrocatalysis	47.049	15,396	-
NSF	DMR-1419807	NSF Materials Research Science and Engineering Centers (MRSEC) - Full Proposal	47.049	803,884	27,699
NSF	DMR-1554891	CAREER: Geometrical Frustration in Spin Orbit Systems	47.049	3,829	-
NSF	DMR-1645232	2016 Alan T. Waterman Award	47.049	315,227	-
NSF	DMR-1654548	CAREER: Quantifying Radiation Damage in Metals with Wigner Energy Spectral Fingerprints	47.049	59,857	-
NSF	DMR-1700137	Surface/Interface Phenomena and Topological Order in Emerging Quantum Materials	47.049	105,938	-
NSF	DMR-1708280	FORCES & FLUCTUATIONS OUT OF EQUILIBRIUM	47.049	89,936	-
NSF	DMR-1709315	Dynamics of Associative Polymers Revealed by Self-Diffusion	47.049	27,336	-
NSF	DMR-1743059	Convergence QL: NSF/DOE Quantum Science Summer School	47.049	14,165	-
NSF	DMR-1751736	CAREER: Fundamentals of complex chalcogenide electronic materials	47.049	6,298	-
NSF	DMR-1751739	CAREER: FRACTAL ELECTRONIC TEXTURES IN QUANTUM CRITICAL SOLIDS	47.049	88,787	-
NSF	DMR-1808190	Rare earth garnets for spintronics	47.049	79,807	-
NSF	DMR-1809740	Synthesis and Applications of Functional Carbon Nanomaterials	47.049	217,814	-
NSF	DMR-1809802	Tuning the Electronic and Topological Properties of Twisted van der Waals Heterostructures	47.049	111,110	-
NSF	DMR-1809815	Probing Chiral Fermion Dynamics in Topological Semimetals	47.049	90,896	-
NSF	DMR-1847861	CAREER: Strongly correlated systems through the lens of topological phases	47.049	142,076	-
NSF	DMR-1905164	Scalable Quantum Emitters Enabled through Rational Bottom-Up Synthesis	47.049	8,154	-
NSF	DMR-1911666	Novel Phases of Electronic Insulators and Quantum Hall Systems	47.049	121,858	-
NSF	DMR-1911792	Epitaxial Ceramic Nanocomposites by Design	47.049	146,041	-
NSF	DMR-1922311	DMREF: Collaborative Research: The Synthesis Genome: Data Mining for Synthesis of New Materials	47.049	124,092	-
NSF	DMR-1923976	Collaborative Research: Traversals in Transformation Strain Space and Microstructure Design for High Performance Ferroelastic Materials	47.049	225,706	-

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Federal Agency	Government Contract Number	Master Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NSF	DMR-2002860	Entropy and Phase Transformations in Stable Nanocrystalline Alloys	47.049	95,097	-
NSF	DMR-2004556	Collaborative Research: Improving contact fatigue and wear properties using graded nanostructured surfaces in metallic materials	47.049	30,566	-
NSF	DMR-2004913	GOALI: Frictional Ignition of Metals in High-Pressure Oxygen Environments	47.049	149,023	-
NSF	DMR-2022428	Entanglement and emergence in quantum states of matter	47.049	96,440	-
NSF	DMR-2104912	Interactions between spin wave and magnetic domain structures	47.049	6,545	-
NSF	DMR-2104964	NSF-BSF: Development and Study of Lattice-Derived Flat Band States	47.049	85,443	-
NSF	DMR-2105495	Singlet Fission, Triplet Upconversion, and Thermally-Activated Delayed Fluorescence: Controlling Exciton Dynamics with Metal-Organic Frameworks	47.049	34,070	-
NSF	DMR-2118448	Collaborative Research: DMREF: Symmetry-Guided Machine Learning for the Discovery of Topological Phononic Materials	47.049	68,283	-
NSF	DMR-2118678	Collaborative Research: DMREF: Designer Mesoscale Materials Synthesized in the Self-Assembly Foundry	47.049	96,102	-
NSF	DMR-2119076	Collaborative Research: DMREF: Developing Damage Resistant Materials for Hydrogen Storage and Large-scale Transport.	47.049	23,309	-
NSF	DMR-2132623	Ferroelectricity emerging from antisite defects in complex oxides	47.049	43,669	-
NSF	DMR-2132647	EAGER: SUPER: Electrochemical Protonation to Achieve Superconducting Matter	47.049	89,045	-
NSF	DMR-2204222	Brush Particle-Based Building Blocks for High Refractive Index Composites	47.049	1,380	-
NSF	DMR-2220706	High-Pressure Synthesis of Missing Pnictide Superconductors	47.049	74,850	-
NSF	DMS-1502244	Tensor categories and representation theory	47.049	4,454	-
NSF	DMS-1601946	Topics in arithmetic geometry	47.049	33,053	-
NSF	DMS-1601953	Wall-crossing and dualities in representation theory	47.049	0	-
NSF	DMS-1623977	2017-2019 Talbot Workshops	47.049	3,565	-
NSF	DMS-1651995	CAREER: Gaussian Graphical Models: Theory, Computation, and Applications	47.049	27,275	-
NSF	DMS-1664619	FRG: Collaborative Research: Integrable Probability	47.049	26,917	-
NSF	DMS-1707270	Mean Curvature Flow and Nonlinear Heat Equations	47.049	18,642	-
NSF	DMS-1712862	Universal randomness in 2D	47.049	161,729	-
NSF	DMS-1719637	Collaborative Research: Overcoming order reduction and stability restrictions in high-order time-stepping	47.049	5,158	-

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Federal Agency	Government Contract Number	Master Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NSF	DMS-1723011	Collaborative Research: CDS&E-MSS: Stochastic Approximations for the Solution and Uncertainty Analysis of Data-Intensive Inverse Problems	47.049	-7	-
NSF	DMS-1737944	Algorithms for anomaly detection using graphical models	47.049	40,317	-
NSF	DMS-1749858	CAREER: Classical and quantum chaos	47.049	102,155	-
NSF	DMS-1760264	FRG: Collaborative Research: Algebra and geometry behind link homology	47.049	55,464	-
NSF	DMS-1764176	Graph Theory and Additive Combinatorics	47.049	4,019	-
NSF	DMS-1764370	Combinatorics in Algebra, Geometry, and Physics	47.049	101,395	-
NSF	DMS-1764403	Collaborative Research: Dynamics of Nonlinear PDE: Integrating Deterministic and Probabilistic Methods	47.049	6,934	-
NSF	DMS-1812142	Evolution equations in geometry	47.049	197,742	-
NSF	DMS-1853981	Colored Stochastic Vertex Models	47.049	105,054	-
NSF	DMS-1855773	Mathematical Sciences:Geometric methods in the representation theory of affine Hecke algebras, finite reductive groups and character sheaves	47.049	106,612	-
NSF	DMS-1901642-001	Algebraic cycles and L-values	47.049	136,192	-
NSF	DMS-1904997	Lefschetz fibrations, their noncommutative counterparts, and formal groups	47.049	139,007	-
NSF	DMS-1906072	Classical methods in motivic homotopy theory	47.049	49,017	-
NSF	DMS-1916120	PRIMES, MathROOTS, and CrowdMath: Expanding Opportunities for High School Students	47.049	87,924	-
NSF	DMS-1940092	CAREER: Phase Transitions in Randomized Combinatorial Search and Optimization Problems	47.049	70,549	-
NSF	DMS-1944952	CAREER: Differential Equations, Algebraic Geometry and String Theory	47.049	77,601	-
NSF	DMS-1952706	Collaborative Research: Optimal-complexity spectral methods for complex fluids	47.049	20,249	-
NSF	DMS-1953945	Probabilistic and analytic aspects of the Loewner energy	47.049	62,819	-
NSF	DMS-1953947	2020 - 2022 Talbot Workshops	47.049	15,559	-
NSF	DMS-1954455	Soliton dynamics for nonlinear wave equations	47.049	71,495	-
NSF	DMS-1955614	Microlocal Analysis in General Relativity	47.049	0	-
NSF	DMS-2001318	Tensor categories and representations of quantized algebras	47.049	105,933	-
NSF	DMS-2002579	Relative aspects of the Langlands program, L-functions and Beyond Endoscopy	47.049	935	-
NSF	DMS-2004589	Nonlinear Analysis of Three-Dimensional Water-Wave Patterns via Exponential Asymptotics	47.049	83,193	-
NSF	DMS-2005345	Dynamics and singularities of geometric flows	47.049	190,010	-

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Federal Agency	Government Contract Number	Master Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NSF	DMS-2015517	Inference in High-Dimensional Statistical Models. Algorithmic Tractability and Computational Barriers	47.049	88,743	-
NSF	DMS-2022448	Collaborative Research: National Institute for Foundations of Data Science	47.049	687,691	120,415
NSF	DMS-2044606	CAREER: Analytic and Spectral Methods in Combinatorics	47.049	39,725	-
NSF	DMS-2052651	FRG Collaborative: New challenges in the derivation and dynamics of quantum systems	47.049	117,750	-
NSF	DMS-2054129	Combinatorics and its Applications	47.049	10,612	-
NSF	DMS-2055531	K-STABILITY AND BIRATIONAL GEOMETRY OF FANO VARIETIES	47.049	55,225	-
NSF	DMS-2100157	Algebraic and Probabilistic Methods in Extremal Combinatorics	47.049	76,210	-
NSF	DMS-2101507	Sheaves, representations and dualities	47.049	75,898	-
NSF	DMS-2103933	Geometry Processing Summer Institute 2021	47.049	48,067	-
NSF	DMS-2104349	Evolution equations in geometry and related fields	47.049	62,405	-
NSF	DMS-2105512	New tools for gauge theory in dimensions 3 and 4	47.049	168,973	-
NSF	DMS-2133851	Collaboration Research: Probabilistic, Geometric, and Topological Analysis of Neural Networks, From Theory to Applications	47.049	37,300	-
NSF	DMS-2134108	Collaborative Research: Foundations of Deep Learning: Theory, Robustness, and the Brain	47.049	54,502	-
NSF	DMS-2153742	Random Surfaces and Related Questions	47.049	12,116	-
NSF	DMS-2206085	Mean-field and Singular Limits of Deterministic and Stochastic Interacting Particle Systems	47.049	1,904	-
NSF	OMA-1936263	QII-TAQS Characterizing and Utilizing 2D Van der Wals Materials with Superconducting Quibits	47.049	442,801	127,008
NSF	PHY_2126806	38th International Symposium on Lattice Field Theory	47.049	10,000	-
NSF	PHY-1506369	A Program in Ultralow-Temperature Atomic Physics	47.049	287,159	-
NSF	PHY-1541160	INSPIRE: Testing Bell's Inequality with Astrophysical Observations	47.049	112,570	98,570
NSF	PHY-1626069	MRI: Development of the IsoDAR Front-End	47.049	365,891	-
NSF	PHY-1654168	CAREER: Magnetogenesis Revisited: The First Self-consistent Plasma Dynamo	47.049	64,621	-
NSF	PHY-1707549	Studies of strong-gravity binaries and their gravitational waves	47.049	62,867	-
NSF	PHY-1707999	Inferring the Physics of mRNA Trafficking in Neuronal Systems	47.049	214,959	-
NSF	PHY-1720311	Dynamical decoupling, error mitigation and noise correlations in multi-qubit systems	47.049	-1,068	-
NSF	PHY-1734011	Center for Ultracold Atoms	47.049	2,753,681	1,458,874
NSF	PHY-1743900	RAISE: A phase separation model for transcriptional control in mammals	47.049	-1	-

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Federal Agency	Government Contract Number	Master Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NSF	PHY-1801996	The EPP-Supported Neutrino Program at MIT	47.049	-30,162	-
NSF	PHY-1806251	New Experimental Techniques for Neutrino Physics	47.049	161,525	-
NSF	PHY-1806440	Rare Event Searches at MIT	47.049	35,821	-
NSF	PHY-1806765	Many-body entanglement for precision measurement	47.049	25,742	-
NSF	PHY-1836814	Collaborative Proposal: The Next Generation of Gravitational Wave Detectors	47.049	411,161	-
NSF	PHY-1848247	CAREER: Symmetry and Geometry in Biological Active Matter	47.049	147,639	-
NSF	PHY-1904160	LHCb operations and computing	47.049	302,563	-
NSF	PHY-1904160-001	LHCb operations and computing	47.049	187,318	38,616
NSF	PHY-1912764	The PA-Supported Neutrino Program at MIT	47.049	411,209	-
NSF	PHY-1912836	SEARCHING FOR PHYSICS BEYOND THE STANDARD Model AT THE LHCB EXPERIMENT	47.049	214,583	-
NSF	PHY-1914418 000	WoU-MMA: Collaborative Research: A Next-Generation SuperNova Early Warning System for Multimessenger Astronomy	47.049	51,298	-
NSF	PHY-1915218	Quantum simulation of out-of-equilibrium spin models	47.049	45,799	-
NSF	PHY-2010136	The Dynamic Onset of Magnetic Reconnection	47.049	105,557	-
NSF	PHY-2011905	Cosmic Censorship from Gauge/Gravity Duality	47.049	38,439	-
NSF	PHY-2012088	Quantum optomechanics: from fundamental tests to quantum tools of the future	47.049	233,760	-
NSF	PHY-2012110	Strongly interacting quantum mixtures of ultracold atoms	47.049	213,671	-
NSF	PHY-2019786	AI Institute: AI Research Institute for Fundamental Interactions	47.049	3,346,627	1,192,646
NSF	PHY-2026995	RAPID Immunogenicity of SARS-CoV2 to Human T Cells	47.049	11,295	-
NSF	PHY-2028125	Composable Next Generation Software Framework for Space Weather Data Assimilation and Uncertainty Quantification	47.049	848,224	191,123
NSF	PHY-2033046	COVID-19: RAPID: Identifying the role of mucus in COVID-19 pathogenesis	47.049	4,407	1,451
NSF	PHY-2033046	RAPID: Identifying the role of mucus in COVID-19 pathogenesis	47.049	39,228	-
NSF	PHY-2035015	EAGER: QSA: Accelerating lattice quantum field theory calculations via interpolator optimization using NISQ-era quantum computing	47.049	146,066	-
NSF	PHY-2045740	CAREER: Populations and systematic uncertainties in the era of the advanced gravitational-wave detectors	47.049	45,779	-
NSF	PHY-2108050	Developing Pulsed Power Driven Turbulent Reconnection Platforms	47.049	231,999	-
NSF	PHY-2110384	Studies of strong-gravity binaries and their gravitational waves	47.049	128,679	-
NSF	PHY-2110535	Collaborative Research: Quantum-Coherent Interactions between Free and Guided Electrons and Photons	47.049	93,310	-

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Federal Agency	Government Contract Number	Master Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NSF	PHY-2110569	New Experimental Techniques For Neutrino Physics	47.049	81,221	-
NSF	PHY-2110720	Rare Event Searches at MIT	47.049	150,071	-
NSF	PHY-2213898	EAGER: Radiatively Cooled Magnetic Reconnection on Z	47.049	23,150	-
NSF	AGS-1520825	Hazards SEES: Uncovering the hidden skeleton of environmental flows: advanced Langrangian methods for hazards prediction, mitigation and response	47.050	62,779	56,599
NSF	AGS-1638672	Collaborative Research: Comprehensive Characterization of Atmospheric Organic Carbon over Multiple Generations of Oxidation	47.050	-217	-
NSF	AGS-1740533	Collaborative Research: Convection and rainfall enhancement over mountainous tropical islands	47.050	238	-
NSF	AGS-1749986	Improved understanding of changes in convective available potential energy and links to the large-scale circulation	47.050	11,222	-
NSF	AGS-1804512	Collaborative Research: P2C2: Reconstructing Northeast Mexico Hydroclimate since the Last Interglacial Period	47.050	-20	-
NSF	AGS-1835576	Collaborative Research: Framework: Software: HDR: Data-Driven Earth System Modeling	47.050	194,128	-
NSF	AGS-1848863	Collaborative Research: Understanding the role of coupled chemistry-climate interactions in internal climate variability	47.050	68,081	-
NSF	AGS-1850089	Collaborative Research: Design of a Nanosat Constellation for Measuring Internal Gravity Wave Fluxes in the Earth's Stratosphere	47.050	121,523	-
NSF	AGS-1906719	Advancing the Understanding of the Impacts of Wave-Induced Temperature Fluctuations On Atmospheric Chemistry	47.050	153,883	-
NSF	AGS-1906768	Collaborative Research: Physics of and Climate Regulation by Convective Aggregation	47.050	238,334	-
NSF	AGS-1914920	Collaborative Research: Integrating GEOS-Chem atmospheric chemistry into the NCAR Community Earth System Model (CESM)	47.050	67,557	-
NSF	AGS-1933005	Collaborative Research: DASI Track 1: Development of a Distributed MIMO Meteor Radar Network for Space Weather Research	47.050	123,676	-
NSF	AGS-1936642	Integrating Observational Constraints and Modeling of Atmospheric Reactive Organic Carbon	47.050	258,459	-
NSF	AGS-1945871	The Global Circuits Paradox	47.050	68,070	-
NSF	AGS-1952737	Scientific and Technical Discovery at the Millstone Hill Geospace Facility	47.050	1,836,627	-
NSF	AGS-2031472	Improved understanding of the moist dynamics of the extratropical storm tracks and their response to climate change	47.050	125,818	-
NSF	AGS-2031999	Geospace Facilities: Improving Millstone Geospace Radar Performance and Lifetime	47.050	2,381	-

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Federal Agency	Government Contract Number	Master Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
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	62,610	-
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	22,451	-
NSF	AGS-2102976	Collaborative Research: P2C2: Speleothem constraints on seasonal hydroclimate variability in Mainland Southeast Asia since the late Pleistocene	47.050	25,253	-
NSF	AGS-2128617	Improving the Understanding of Halocarbon Lifetimes and Emissions	47.050	70,470	-
NSF	AGS-2129835	Collaborative Research: Laboratory Studies of the Role of RO2 Chemistry on the Evolution of Atmospheric Organic Carbon	47.050	87,820	-
NSF	EAR-1520825	Hazards SEES: Uncovering the hidden skeleton of environmental flows: advanced Langrangian methods for hazards prediction, mitigation and response	47.050	1,917	-
NSF	EAR-1615426	Collaborative Research: Integrating the geological and genomic records: time-calibrating Earth's dynamic biogeochemical history	47.050	6,129	-
NSF	EAR-1659923	Predictive Models for Wave Damping by Flexible Aquatic Vegetation	47.050	40,173	-
NSF	EAR-1702588	Collaborative Research: Quantifying precipitation changes in the South American subtropics over the late Pleistocene	47.050	767	-
NSF	EAR-1722935	Collaborative Research: Relating bulk composition to seismic properties in crustal rocks	47.050	20,668	-
NSF	EAR-1753482	Melt Network Geometry in Stressed, Partially Molten Mantle Rocks: Implications for Seismic Anisotropy	47.050	50,114	-
NSF	EAR-1827715	Collaborative Research: Calibrating the end-Ediacaran extinction at a new boundary site with U-Pb Geochronology & Chemostratigraphy	47.050	22,026	-
NSF	EAR-1843686	Community Facility Support for GNSS Data Analysis with GAMIT/GLOBK	47.050	85,259	-
NSF	EAR-1852946	Methane isotopologue fractionation during microbial methanogenesis and methonotrophy by pure and mixed laboratory cultures	47.050	45,356	-
NSF	EAR-1854564	Impact of vegetation geometry and distribution on bedload transport	47.050	88,006	-
NSF	EAR-1902179	Constraining the Nature and Formation Age of the Shyok Suture Zone in Ladakh, NE India	47.050	99,899	-
NSF	EAR-1903544	Collaborative Research: Regional hydrologic and vegetation changes over the last 150 kyr in the Searles and Death Valley basins	47.050	48,871	-

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Federal Agency	Government Contract Number	Master Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NSF	EAR-1905733	Collaborative Research: Development of a turnkey SQUID microscope platform for paleomagnetism and installation in a National Multi-User Facility	47.050	79,950	-
NSF	EAR-1923491	Collaborative Research: Hydrologic Disturbance in Tropical Peatlands: Linking Drainage, Soil Moisture, Flammability, and Carbon Fluxes	47.050	52,765	-
NSF	EAR-1925863	Collaborative Research: Do arc-continent collisions in the tropics set the Earth's climate state?	47.050	53,286	-
NSF	EAR-1948453	Laboratory Acquisition Protocols and Standards: A Standardized Digital Data System for Experimental Results	47.050	114,065	-
NSF	EAR-2021677	Collaborative Research: Modes of melt extraction in silicic mushes: processes, efficiency and timescales	47.050	78,406	-
NSF	EAR-2022928	Collaborative Research: Blueschist Rheology: Experimental Constraints On Glaucophane Strength And Deformation Mechanisms	47.050	65,831	-
NSF	EAR-2044806	Collaborative Research: High temporal resolution paleomagnetism of speleothems	47.050	119,708	-
NSF	EAR-2054414	Collaborative Research: Community Facility Support: Facilitating Access and Innovation through a Collaborative Organization for Rock Deformation (CORD)	47.050	70,537	-
NSF	EAR-2103408	Collaborative Research: What makes Low-Frequency Earthquakes low frequency?	47.050	140,497	-
NSF	EAR-2123254	Collaborative Research: The role of subducting seamounts in fault stability and slip behavior throughout the seismic cycle	47.050	14,236	-
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	44,696	-
NSF	ICER-1854929	PREEVENTS Track 2: Collaborative Research: Predicting Hurricane Risk along the United States East Coast in a Changing Climate	47.050	72,219	-
NSF	OAC-1835618	Collaborative Research: Framework: Data: Toward Exascale Community Ocean Circulation Modeling	47.050	129,972	-
NSF	OCE-1536515	Collaborative Research: An Ocean Tale of Two Climates: Modern and Last Glacial Maximum	47.050	112	-
NSF	OCE-1736109	Collaborative Research: Deep Circulation over the Flanks of a Mid-Ocean Ridge	47.050	61,395	-
NSF	OCE-1736996	Collaborative Research: US GEOTRACES PMT: Pb and Cr isotopes	47.050	41,579	-
NSF	OCE-1756324	Collaborative Research: Bottom Boundary Layer Turbulent and Abyssal Recipes	47.050	136,383	-

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Federal Agency	Government Contract Number	Master Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NSF	OCE-1923312	Improving Accuracy and Precision of Marine Inorganic Carbon Measurements	47.050	113,718	-
NSF	OCE-1924050	Cr Isotope Oceanography of the Eastern Tropical North Pacific Ocean	47.050	102,017	-
NSF	OCE-2023520	Collaborative Research: Coupling of Trade Winds with the Ocean's Subtropical Cells	47.050	37,321	-
NSF	OCE-2048470	Features and implications of nitrogen assimilation trait variability in populations of Prochlorococcus	47.050	171,760	-
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	25,357	-
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	15,141	-
NSF	OCE-2140206	EAGER: Characteristic Disruptions of the Marine Carbon Cycle	47.050	82,913	-
NSF	OCE-2142998	CAREER: Carbon, nitrogen, and oxygen biogeochemistry at the scale of a sinking marine particle	47.050	29,769	-
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	109,520	-
NSF	OCE-2148916	Collaborative Research: US GEOTRACES GP17-OCE and GP17-ANT: Pb Isotopes	47.050	18,327	-
NSF	OPP-1837646	NNA: Collaborative Research: Navigating the New Arctic--Persistent, Long-Range, Autonomous Under-Ice Observations of Arctic Change	47.050	3,754	-
NSF	CCF-1231216	A Center for Brains, Minds, and Machines: The Science and the Technology of Intelligence	47.070	3,625,476	1,081,716
NSF	CCF-1453261	CAREER: Algorithmic Aspects of Machine Learning	47.070	-70,224	-
NSF	CCF-1521759	Collaborative Research: Evolvable Living Computing - Understanding and Quantifying Synthetic Biological Systems' Applicability, Performance, and Limits	47.070	427	-
NSF	CCF-1521925	Collaborative Research: Evolable Living Computing: Understanding and Quantifying Synthetic Biological Systems' Applicability, Performance and Limits	47.070	26,205	-
NSF	CCF-1525705	CIF:Small: Cooperative Interference Engineering for Network Secrecy	47.070	4,612	-
NSF	CCF-1533644	XPS: FULL: FP: A profile-centric IDE for science-based performance engineering in the cloud	47.070	478,413	-
NSF	CCF-1533753	XPS: FULL: DSD: Scalable High Performance with Halide and Simit Domain Specific Languages	47.070	-48,269	-
NSF	CCF-1553428	CAREER: Fast Graph Algorithms and Continuous Optimization	47.070	67,936	-

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Federal Agency	Government Contract Number	Master Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NSF	CCF-1563880	Title: SHF: Medium: Collaborative Research: Run-Time Support for Scalable Concurrent Programming	47.070	2,492	-
NSF	CCF-1565235	AF:Large:Collaborative Research: Algebraic Proof Systems, Convexity, and Algorithms	47.070	132,866	-
NSF	CCF-1651838	CAREER:Matrix Products: Algorithms and Applications	47.070	-20,904	-
NSF	CCF-1717610	CIF:Small:Submodular Optimization Techniques for Sensor and Signal Processing	47.070	109,173	-
NSF	CCF-1717842	CIF: Small: Fundamental limits and coding for massive wireless random-access	47.070	193,062	-
NSF	CCF-1723344	AitF: Collaborative Research: Algorithms for Probabilistic Inference in the Real World	47.070	104,894	-
NSF	CCF-1729369	Collaborative Research: EPiQC: Enabling Practical-Scale Quantum Computation	47.070	221,475	-
NSF	CCF-1740751	MIT Institute for Foundations of Data Science	47.070	158,806	-
NSF	CCF-1741615	CAREER: Common Links in Algorithms and Complexity	47.070	6,157	-
NSF	CCF-1751011	CAREER: A Programming Language for Developing Software to Execute Reliably on Unreliable Hardware	47.070	47,249	-
NSF	CCF-1807575	SemiSynBio:Collaborative Research:Very large-scale genetic circuit design automation	47.070	62,100	-
NSF	CCF-1810758	NSF-BSF: AF: Small: An Algorithmic Theory of Brain Networks	47.070	130,115	-
NSF	CCF-1814969	SHF: Small: A Scalable Architecture for Ubiquitous Parallelism	47.070	106,457	-
NSF	CCF-1816209	CIF: Small: Occlusion-Based Computational Imaging and Scene Analysis: Theory, Methods and Applications	47.070	248,548	-
NSF	CCF-1836712	FMitF: Verifying concurrent system software with Cspec	47.070	150,139	-
NSF	CCF-1845763	CAREER: Parallel Algorithms and Frameworks for Graph and Hypergraph Processing	47.070	20,591	-
NSF	CCF-1901292	AF: Medium: Collaborative Research: Theoretical Foundations of Deep Generative Models and High-Dimensional Distributions	47.070	18,850	-
NSF	CCF-1909429	AF:Small Average-Case Fine-Grained Complexity	47.070	59,329	-
NSF	CCF-1918421	Expeditions: Collaborative Research: Global Pervasive Computational Epidemiology	47.070	71,147	-
NSF	CCF-1918839	Expeditions:Understanding the World Through Code	47.070	831,535	-
NSF	CCF-1937501	RTML: Large: Co-design of Hardware and Algorithms for Energy-efficient Robot Learning	47.070	281,268	-
NSF	CCF-1940205	CAREER: Reducibility among high-dimensional statistics problems: information preserving mappings, algorithms, and complexity.	47.070	217,350	-
NSF	CCF-1941841	Workshop: Systems and Control Theory for Synthetic Biology	47.070	29,697	-

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NSF	CCF-1955217	Collaborative Research: AF : Medium: Foundations of Structured Optimization	47.070	146,968	-
NSF	CCF-1955864	Collaborative Research: CNS: Occlusion and directional resolution in computational imaging	47.070	181,722	-
NSF	CCF-1956054	AF Medium: DNA-based Data Storage and Computing Materials	47.070	271,129	-
NSF	CCF-1956211	Collaborative Research: FET: Medium: Quantum Localization and Synchronization Networks	47.070	197,741	-
NSF	CCF-2003830	AF: Small: Distributed Algorithms for Dynamic, Noisy Platforms: Wireless Networks, Robot Swarms, and Insect Colonies	47.070	48,067	-
NSF	CCF-2006664	AF: Small: Sparsity in Local Computation	47.070	78,818	-
NSF	CCF-2006798	Collaborative Research: AF: Small: Fine-grained complexity of approximate problems	47.070	44,246	-
NSF	CCF-2007674	FET: Small: Robust and modular CRISPR/dCas9 transcriptional programs through regulated dCas9 generators	47.070	101,865	-
NSF	CCF-2028888	Collaborative Research: PPoSS: Planning: Principles for Edge Sensing and Computing for Personalized, Precision Healthcare at National Scale	47.070	1,365	-
NSF	CCF-2029016	Collaborative Research: PPoSS: Planning: Scalable Systems for Probabilistic Programming	47.070	77,404	-
NSF	CCF-2107244	Collaborative Research: SHF: Medium: Spatial Multi-Tenant Neural Acceleration for Next Generation Datacenters	47.070	180,521	-
NSF	CCF-2107373	Collaborative Research:SHF: Medium : Analog EDA Algorithmic Perspectives for Efficient and Robust Neural Network Design	47.070	26,818	-
NSF	CCF-2123864	Collaborative Research: FMitF: Track I:Composable Verification of Crash-Safe Distributed Systems with Grove	47.070	344,910	-
NSF	CCF-2127597	Lower Bounds in Complexity Theory Via Algorithms	47.070	205,820	-
NSF	CCF-2129139	AF: Small: Shortest Paths and Distance Parameters:Faster, Fault-Tolerant and More Accurate	47.070	328,158	-
NSF	CCF-2131541	Collaborative Research: DASS: Legally Accountable Cryptographic Computing Systems (LAChS)	47.070	98,145	-
NSF	CCF-217878	CAPA: Collaborative Research: ARION: Taming Heterogeneity with DSLs, Approximation, and Synthesis	47.070	30,045	-
NSF	CCR-1822920	SPX: Collaborative Research: Distributed Database Management with Logical Leases and Hardware Transactional Memory	47.070	121,888	-
NSF	CNS-1407470	NeTS:Medium:Collaborative Research:An App-Centric Transport Architecture for the Internet	47.070	-8,505	-
NSF	CNS-1526791	NeTS: Small: A Programmable Network Data Plane for Resource Management in Datacenters	47.070	-1,660	-
NSF	CNS-1563763	CSR:Medium: A high-performance certified file system and applications	47.070	-19,716	-

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NSF	CNS-1563826	NeTS: Medium: Collaborative Research: Language and Hardware Primitives for Programming the Data Plane in High-Speed Networks	47.070	81,372	-
NSF	CNS-1704172	CSR: Medium: Collaborative Research: Soup: Flexible Storage and Processing for On-Line Applications	47.070	21,345	-
NSF	CNS-1713725	NeTS: Small: Optimizing Information Freshness in Wireless Networks	47.070	157,976	-
NSF	CNS-1717199	NeTS: Small: Cognitive Management and Control of Agile Dynamic Optical Networks	47.070	16,803	-
NSF	CNS-1735463	CRISP Type 2: Collaborative Research: Understanding the benefits and mitigating the risks of interdependence in critical infrastructure systems	47.070	255,749	-
NSF	CNS-1751009	CAREER: Data-Driven Network Resource Management Systems	47.070	115,694	-
NSF	CNS-1801399	SaTC: CORE: Medium: Collaborative: Bridging the Gap between Protocol Design and Implementation through Automated Mapping	47.070	118,348	-
NSF	CNS-1812522	SaTC:CORE:Small: verifying security for data non-interference	47.070	150,295	-
NSF	CNS-1813087	SaTC: CORE: Small: Design of Efficient, Horizontally-Scaling, and Strongly Anonymous Communication Networks	47.070	85,589	-
NSF	CNS-1815221	SaTC: CORE: Small: Towards Adversarially Robust Machine Learning	47.070	140,222	-
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	213,428	-
NSF	CNS-1844280	CAREER: Wirelesss Sensing for In Vivo Medical Devices	47.070	106,643	-
NSF	CNS-1907905	CNS Core: Small: Wireless Network Control in Uncooperative and Adversarial Environments	47.070	57,739	-
NSF	CNS-1910676	CNS Core: Small: Network Architecture and Routing Protocols for Payment Channel Networks	47.070	82,845	-
NSF	CNS-1923130	CSforAll: RPP: Pathways for Advancing Computing Education	47.070	198,054	-
NSF	CNS-1925583	CCRI: Planning: Algorithmically Updating Repository of Reductions in Fine-Grained Complexity	47.070	-9	-
NSF	CNS-1925609	CCRI: Medium: Cilk Infrastructure for Next-Generation Parallel-Programming Research	47.070	285,827	-
NSF	CNS-1946976	EAGER: Scalable Photonic AI Accelerators Based on Photoelectric Multiplication	47.070	108,747	-
NSF	CNS-1955270	Collaborative Research: SaTC: CORE: Medium: Hardening Off-the-Shelf Software Against Side Channel Attacks	47.070	13,325	-
NSF	CNS-1955370	Collaborative Research: CNS Core: Medium: Learning to Cache and Caching to Learn in High Performance Caching Systems	47.070	68,779	-

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Federal Agency	Government Contract Number	Master Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NSF	CNS-2002908	Collaborative Research: MLWiNS: Deep Neural Networks Meet Physical Layer Communications -- Learning with Knowledge of Structure	47.070	98,493	-
NSF	CNS-2006827	Collaborative Research: CNS Core: Small: Understanding Per-Hop Flow Control	47.070	114,511	-
NSF	CNS-2008624	Collaborative Research: CNS Core: Small: A Principled Framework for Workload Distribution Techniques in Large-Scale Networks	47.070	127,347	-
NSF	CNS-2031115	RAPID: Coordination and summarization of studies of cyberspace during COVID-19 pandemic	47.070	751	-
NSF	CNS-2032704	COVID-19: RAPID: Wireless Positioning for Mitigating COVID19 Surface Transmissions	47.070	16,512	-
NSF	CNS-2043385	SCC-CIVIC-PG Track A: Enhancing Transit Flexibility to Improve Post-Pandemic Sustainability	47.070	26,356	10,000
NSF	CNS-2044973	CAREER: Certifiable Perception for Autonomous Cyber-Physical Systems	47.070	99,818	-
NSF	CNS-2046359	CAREER: A Quantitative Framework for Analyzing and Mitigating Microarchitectural Side Channels	47.070	27,228	-
NSF	CNS-2054869	SaTC: CORE: Small: Practical private information retrieval	47.070	29,064	-
NSF	CNS-2104398	Collaborative: NGSDI: Foundations of Clean and Balanced Datacenters: Treehouse	47.070	148,116	-
NSF	CNS-2115149	RAPID: Decentralization and Privacy for Secure Vaccination Coordination	47.070	16,024	-
NSF	CNS-2115587	SaTC: CORE: Medium: Provably Secure, Usable, and Performant Enclaves in Multicore Processors	47.070	288,746	-
NSF	CNS-2129970	Collaborative Research: Workshop to Develop a Roadmap for Greater Public Use of Privacy-Sensitive Government Data	47.070	376	-
NSF	CNS-2130671	SaTC: CORE: Small: Scaling Correct-by-Construction Code Generation for Cryptography	47.070	59,759	-
NSF	CNS-2144766	COVID-19: CAREER: Large-scale Dynamic Reconfigurable Networks	47.070	6,562	-
NSF	CNS-2148132	RINGS: Coding over High-Frequency for Absolute Post-Quantum Security (CHAPS)	47.070	6,842	-
NSF	CNS-2148251	RINGS: Resilient and Low-Latency Networks for Situation Awareness in the Factory of the Future	47.070	21,463	-
NSF	DMS-1839258	TRIPODS+X:RES:Collaborative Research: Learning with expert-in-the-loop for multimodal weakly labeled data: with application to massive scale medical imaging	47.070	9,502	-
NSF	DRL-1734443	NRI: INT: COLLAB: Development, Deployment and Evaluation of Personalized Learning Companion Robots for Early Literacy and Language Learning	47.070	17,721	-

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Federal Agency	Government Contract Number	Master Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
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	51,793	-
NSF	IIS -2002324	CHS: Small: Collaborative Research: Catalyzing Youth Civic Engagement Through Innovations in Social Computing	47.070	9,418	-
NSF	IIS-1553284	CAREER: Scalable learning with combinatorial structure	47.070	12,349	-
NSF	IIS-1607189	US-Israel Research Proposal: IIS: CRCNS: Collaborative: New Tools for Extracting Neuronal Phenotypes from a Volumetric Set of Cerebral Cortex Images	47.070	206	-
NSF	IIS-1607486	US-German Research Proposal: Neurocomputation in the Visual Periphery: Experiments and Models	47.070	53,365	-
NSF	IIS-1716413	CHS: Small: An Integrated Editing Environment for 3D Printing	47.070	165	-
NSF	IIS-1718258	III:Small:A New Perspective on Grouped Variable Selection via Modern Optimization	47.070	65,869	-
NSF	IIS-1723381	S&AS:INT: Integrated Reasoning, Planning and Acting for Household Robots	47.070	186,046	-
NSF	IIS-1723943	S&AS: INT: COLLAB: Autonomy as a Service	47.070	27,924	-
NSF	IIS-1729931	Collaborative Research: Computational Photo-Scatterography: Unraveling Scattered Photons for Bio-imaging	47.070	83,487	-
NSF	IIS-1741341	BIGDATA: F: Collaborative Research: Towards automating data analysis: interpretable, interactive, and scalable learning via discrete probability	47.070	155,306	-
NSF	IIS-1750286	CAREER: Robust, scalable, reliable machine learning	47.070	31,069	-
NSF	IIS-1763434	III: Medium: Massively Parallel Data Analytics on Heterogeneous Architectures	47.070	200,812	-
NSF	IIS-1815372	CHS: Small: Collaborative Research: Computational Acoustic Design for Digital Manufacturing	47.070	32,173	-
NSF	IIS-1815529	RI:Small:Computational analysis of eye movements in reading: reader characteristics, cognitive state, and natural language processing	47.070	14,652	-
NSF	IIS-1815585	CHS: Small: Collaborative Research: Computational Fine Art Reproduction	47.070	6,971	-
NSF	IIS-1830282	NRI:INT:COLLAB: Collaborative Task Planning and Learning through Language Communication in a Human-Robot Team	47.070	42,374	-
NSF	IIS-1838071	BIGDATA:F: Statistical and Computational Optimal Transport for Geometric Data Analysis	47.070	147,899	-
NSF	IIS-1844406	CAREER: Adaptive Physical User Interfaces	47.070	109,401	-
NSF	IIS-1846088	CAREER: Modern nonconvex optimization for machine learning: foundations of geometric and scalable techniques	47.070	105,146	-

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Federal Agency	Government Contract Number	Master Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NSF	IIS-1900933	III: Medium: Learning-based Synthesis of Data Processing Engines	47.070	210,010	-
NSF	IIS-1900991	III: Large: Collaborative Research: Analysis Engineering for Robust End-to-End Data Science	47.070	114,319	-
NSF	IIS-1926930	EAGER: AI-DCL: Collaborative Research: Understanding and Overcoming Biases in STEM Education Using Machine Learning	47.070	9,268	-
NSF	IIS-1942659	CAREER: Effective Interaction Design for Data Visualization	47.070	87,667	-
NSF	IIS-1954886	CHS: Medium: Collaborative Research: Increasing Communication Rates through a Haptic Display of Speech	47.070	73,141	-
NSF	IIS-1955697	Collaborative Research: CHS: Medium: Discovery and Exploration of Design Trade-Offs	47.070	108,656	-
NSF	IIS-2006152	CHS:Small:Capturing Multisensory Interactions in Cutaneous Displays	47.070	206,229	-
NSF	IIS-2008116	Collaborative Research: CHS: Small: Learning Maker Skills By Building Game Props	47.070	70,565	-
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	10,930	-
NSF	IIS-2027266	COVID-19: RAPID: Preventing the Spread of Coronavirus with Efficient Deep Learning	47.070	-3,078	-
NSF	IIS-2033792	Quantifying the Unknown Unknowns for Data Integration	47.070	111,129	-
NSF	IIS-2035018	EAGER: Neural Behavioral Analysis (NBA) Pipeline for Behavior and Neural Activity Analysis in Autism	47.070	114,861	-
NSF	IIS-2105819	Collaborative Research: HCC: Medium: Differentiable Rendering for Computer Graphic	47.070	120,002	-
NSF	IIS-2106962	Collaborative Research: HCC: Medium: Computational Design of Complex Fluidic Systems	47.070	80,374	-
NSF	IIS-2133072	Collaborative Research: NRI: Remotely Operated Reconfigurable Walker Robots for Eldercare	47.070	8,757	-
NSF	OAC-1636766	BD Spokes: SPOKE: NORTHEAST: Collaborative: A Licensing Model and Ecosystem for Data Sharing	47.070	18,038	13,836
NSF	OAC-1835443	Framework: Software: Next-Generation Cyberinfrastructure for Large-Scale Computer-Based Scientific Analysis and Discovery	47.070	1,019,767	112,295
NSF	OAC-1839159	RAISE TAQS: Very Large Scale Integrated Electronics and Photonics Platform for Scalable Quantum Information Processing	47.070	280,543	-
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	197,447	-

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Federal Agency	Government Contract Number	Master Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NSF	OAC-1931469	Collaborative Research: Frameworks: Machine learning and FPGA computing for real-time applications in big-data physics experiments	47.070	221,816	-
NSF	OAC-1934700	Collaborative Research: Advancing Science with Accelerated Machine Learning	47.070	230,480	-
NSF	OAC-1940231	Collaborative Research: Autonomous Computing Materials	47.070	41,270	-
NSF	OAC-1947440	BD Spokes: SPOKE: NORTHEAST: Collaborative: A Licensing Model and Ecosystem for Data Sharing	47.070	52,802	-
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	96,470	-
NSF	OAC-2041897	EAGER: Computer Progress and Economic Prosperity	47.070	186,155	-
NSF	OAC-2053626	Collaborative Research: From Brains to Society: Neural Underpinnings of Collective Behaviors Via Massive Data and Experiments	47.070	145,831	-
NSF	OAC-2103799	Collaborative Research: Elements: A Self-tuning Anomaly Detection Service	47.070	276,228	-
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	247,177	-
NSF	OAC-2140453	The Technical foundations of prosperity	47.070	9,195	-
NSF	DEB-1924148	CNH2-S: Mercury Pollution and Human-Technical-Environmental Interactions in Artisanal Mining	47.074	176,513	57,849
NSF	DEB-2024349	EAGER: Bioforecasting: understanding and predicting species persistence in ecological communities under changing environments	47.074	79,661	-
NSF	DEB-2114529	Collaborative Research: A Workshop on Pre-emergence and the Predictions of Rare Events in Multiscale, Complex, Dynamical Systems	47.074	9,999	-
NSF	EF-2125118	Collaborative Research: MIM: Partners in slime: Learning how mucus shapes and maintains microbiomes	47.074	104,981	-
NSF	IOS-1645061	IOS EDGE: Development of genetic tools for the dominant phototroph in the sea	47.074	28,202	-
NSF	IOS-1845663	CAREER: Dissecting Neural Mechanisms of Behavioral State Control in C. elegans	47.074	121,108	-
NSF	IOS-2035181	EDGE-FGT: Genetic Tools for Picocyanobacteria that Dominate the Oceans	47.074	225,679	66,999
NSF	MCB-1652390	CAREER: Integrating Chem. Biology Methods & RNA Virus Models to Elucidate How the Metazoan Proteostasis Ntwk Modulates Protein Evolutionary Landscapes	47.074	129,744	-
NSF	MCB-1817708	Multiplexing Autonomous Metabolite Valves	47.074	89,849	-

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NSF	MCB-1840257	RoL:FELS:RAISE: Principles of Modular Organization in Resource-Limited Biological Circuits	47.074	166,599	-
NSF	MCB-1844668	CAREER: Cracking the Cleavage Code of RNase Y and Its Associated Y-Complex in Firmicutes	47.074	160,711	-
NSF	MCB-1943141	CAREER: Towards open and community-responsive ecological editing	47.074	42,903	-
NSF	MCB-2027165	Programmable Abiotic-Biotic Interface With planar DNA Nanopore Electrodes	47.074	317,974	61,911
NSF	MCB-2027949	Collaborative Research: MODULUS: Uncovering and re-engineering chromatin modification circuits that dictate epigenetic cell memory	47.074	264,529	-
NSF	MCB-2036037	PROTEIN REGULATORS OF 3D GENOME ARCHITECTURE: DYNAMICS, MECHANISM AND FUNCTION	47.074	180,146	-
NSF	MCB-2041555	Collaborative Research: Multidimensional single-cell phenotyping for elucidating genome to phenome relationships	47.074	21,380	-
NSF	MCB-2042362	CAREER: Chromatin Folding from the Bottom-up	47.074	257,018	-
NSF	MCB-2044895	Biophysics of Nuclear Condensates	47.074	403,055	147,465
NSF	MCB-2046778	CAREER: Developing novel structural techniques to untangle bacterial ribosome biogenesis	47.074	263,518	-
NSF	MCB-2116037	NSF-BSF: Sentinels: Viral First Responder Cells (VFRCs) for COVID-19 and Future Rapidly Emerging Infectious Diseases	47.074	145,686	-
NSF	MCB-2130687	BBSRC-NSF/BIO: Quantum-enhanced long-range energy capture	47.074	7,484	-
NSF	BCS-1724135	CRCNS US-German-Israeli Collaborative Research Proposal: Hierarchical Coordination of Complex Actions	47.075	57,180	-
NSF	BCS-1823919	Expanding Access to Webcam-based online data collection for developmental research	47.075	140,811	-
NSF	BCS-1826757	CompCog: Advancing Understanding of Visual Crowding	47.075	104,689	-
NSF	BCS-1827598	Collaborative research: An integrated model of phonetic analysis and lexical access based on individual acoustic cues to features	47.075	30,669	-
NSF	BCS-1841673 000	Doctoral Dissertation Research: Investigating the Universality of the Subject Requirement through a Language With Overt Correspondents for Postulated Null Subjects	47.075	1,939	-
NSF	BCS-1921501	Computational auditory scene analysis as causal inference	47.075	227,725	-
NSF	BCS-2016404	Doctoral Dissertation Research: Cultures of North American Cannabis Cultivation in an Age of Legalization	47.075	19,384	-
NSF	BCS-2016895	Collaborative Research: Cross-Categorical Context Dependence: Bridging Developmental , Experimental, and Theoretical Perspectives	47.075	74,256	-
NSF	BCS-2020840	Evaluating Meaning-based explanations of syntactic island effects cross-linguistically	47.075	32,874	-

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NSF	BCS-2042748	Collaborative Research: Exploring Variation in English Intonational Acoustic Phonetics from Grammatical Perspectives	47.075	12,853	-
NSF	BCS-2116918	COVID-19: Doctoral Dissertation Research: Developing a scalable theory of alternatives in pragmatics	47.075	7,049	-
NSF	BCS-2118103	Collaborative Research: Loopholes as a window into the learning of meaning	47.075	10,041	-
NSF	BCS-2121009	Collaborative Research: CompCog: Adversarial Collaborative Research on Intuitive Physical Reasoning	47.075	41,403	-
NSF	BCS-2121074	CompCog: Noisy-channel processing in human language understanding	47.075	21,400	-
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	238,889	-
NSF	BCS-2140399	Doctoral Dissertation Research: Presupposition projection in conditionals and conjunctions : Developmental and psycholinguistic evidence	47.075	931	-
NSF	SES-1528487	Collaborative Research: A New Design for Identifying Persuasion Effects and Selection in Media Exposure Experiments via Patient Preference Trials	47.075	93,990	-
NSF	SES-1555071	CAREER: Dynamic Games and Institutions	47.075	80,111	-
NSF	SES-1559367	Experimental Evidence of the Effectiveness of Mechanisms Designed to Increase Tax Compliance	47.075	2,089	-
NSF	SES-1757199	Inferences in Factor Pricing Models with Many Assets	47.075	2,147	-
NSF	SES-1848857	Risk Markets Imbalances and Macroeconomics	47.075	72,511	-
NSF	SES-1919437	Collaborative Research: The Tax Administration Production Function: Evidence from Indonesia	47.075	35,395	-
NSF	SES-1941577	Doctoral Dissertation Research: Sensing the World: The Development of Tactile Information Systems	47.075	6,739	-
NSF	SES-1944138	CAREER: Information Frictions in Consumer Credit Markets: Evidence on Policy, Practice, and Beliefs	47.075	167,102	-
NSF	SES-1946917	Dissertation Grant: Antibiotic Resistance, Planetary Crisis, and Bacteriophage Futures in the 21st Century	47.075	7,649	-
NSF	SES-1947087	Standard Grant: Genetown: Tracing the History of the Biotechnology Industry in the Greater Boston Area, 1973-2000	47.075	98,086	-
NSF	SES-1948692	Collaborative Research: The economics of social data	47.075	50,539	-
NSF	SES-1951056	Apprenticeship, Cooperation and Choice	47.075	147,556	-
NSF	SES-2017315	Strategic Links Between Campaign Donations and Lobbying: Evidence from the LobbyView Database of Money in Politics	47.075	108,235	-
NSF	SES-2047152	Integrating Political Science and Cognitive Science to Meet the Challenge of Promoting Accurate Information on Social Media	47.075	207,991	-

Appendix A1
Massachusetts Institute of Technology
Federal Research Support - On Campus
FY 2022 Expenditures

Federal Agency	Government Contract Number	Master Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NSF	SES-2047513	CAREER: Toward A Framework for Intersectional Antiracism in Technology Development, Design and Distribution	47.075	102,944	-
NSF	SES-2049263	NSF-BSF: Collaborative Research: Market Conduct in Technology Adoption in the Automobile Industry	47.075	6,296	-
NSF	SES-2049744	Collaborative Research: Information and Markets	47.075	133,906	-
NSF	SES-2049895	Firm Relocation as Environmental Policy: Impacts on Agglomeration and the Environment	47.075	144,641	62,590
NSF	SMA-1757344	Mapping the Inventor Gender Gap: Analyzing Regional & Organization Variation in the Inclusivity of the Innovation Economy	47.075	78,638	-
NSF	DGE-1122374	Graduate Research Fellowship Program	47.076	-7,584	-
NSF	DGE-1745302	Graduate Research Fellowship Program (GRFP)	47.076	12,042,314	-
NSF	DGE-1806815	IGE: Enhancing Graduate Education in Systems Thinking and Multi-Stakeholder Design through a Co-Creation Toolkit	47.076	44,306	-
NSF	DGE-2141064	Graduate Research Fellowship Program (GRFP)	47.076	4,427,751	-
NSF	DRL_2005702	Collaborative Research: Facilitating Computational Tinkering: Design-Based Strategies to Engage Children and Families in Creating with Code	47.076	252,235	-
NSF	DRL-1644540	Neurocognitive underpinnings of dyslexia and dyscalculia	47.076	21,781	-
NSF	DRL-1906636	Outsmarting Artificial Intelligence	47.076	240,131	-
NSF	DRL-1934126	Made with Math	47.076	381,045	-
NSF	DRL-2024679	Collaborative Research:NCS-FO: How cognitive maps potentiate newlearning: constraining a computational model by decoding the thoughtsof superior memorists	47.076	89,720	-
NSF	DRL-2048746	Developing and Testing Innovations [DTI]: Everyday AI for Youth	47.076	440,861	41,552
NSF	DRL-2124052	Collaborative Research: NCS-FO: Studying language in the brain in the modern machine learning era	47.076	130,259	-
NSF	DUE-1839921	FW-HTF Theme 2: Collaborative Research: Designing Future Reality Today: Physical-Reality Simulation Platform for Future Factories	47.076	203,527	-
NSF	IIS-1917668	Supporting Teachers with Interaction Tools for Challenging Happenings (STITCH)	47.076	190,039	26,752
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	284,481	-
NSF	OPP-1931131	A New Instrument and Measurement Approach to Cryo-Seismogeodesy: Monitoring Antarctic Ice Shelf Stability Using Ice Penetrators	47.078	191,139	-
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	44	-

Appendix A1
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	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	51,112	-
NSF	OIA-2021069	GCR: Collaborative Research: Fine-grain generation of multiscale patterns in programmable organoids using microrobots	47.083	87,085	-
NSF	OIA-2035143	NSF Convergence Accelerator: Future of Oceans: Innovation, Exploration, and Utilization	47.083	17,764	-
NSF	OIA-2035215	NSF Convergence Accelerator: Socioresilient Infrastructure: Precision Materials, Assemblages, and Systems	47.083	13,355	-
NSF	OIA-2040620	NSF Convergence Accelerator Track C: Synergistic thrusts towards practical topological quantum computing	47.083	246,430	52,011
NSF	OIA-2040636	NSF Convergence Accelerator Track D: A Community Resource for Innovation in Polymer Materials	47.083	406,551	136,577
NSF	OIA-2122039	Election Science: Convergence Accelerator Workshop Proposal	47.083	15,502	-
NSF	OIA-2132318	A1: Knowledge Network Development Infrastructure with Application to COVID-19 Science and Economics	47.083	1,994,648	1,444,461
NSF	OIA-2134795	NSF Convergence Accelerator Track D: A Community Resource for Innovation in Polymer Technology (CRIPT)	47.083	678,866	-
NSF	OIA-2137530	NSF Convergence Accelerator Track F: Adapting and Scaling Existing Educational Programs to Combat Inauthenticity and Instill Trust in Information	47.083	291,174	122,102
NSF	CMMI-1825731	Collaborative Research: Nanomanufacturing of Wafer-Scale 2D Materials: From multilayer precisely into monolayers	47.RD	-33,133	-
NSF	CMMI-1826216	Manufacturing USA: Fundamentals and Applications of High-Resolution Flexographic Printing Using Nanoporous Stamps	47.RD	101,642	-
NSF	CMMI-1917891	Trinity: Tradable Mobility Credits for Efficient Transportation	47.RD	119,422	-
NSF	CNS-1739505	CPS: Small: Recover Algorithms for Dynamic Infrastructure Networks	47.RD	58,259	-
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	66,764	-
NSF	ECCS-1808826	Magnetic Memory Devices Based on Antiferromagnet	47.RD	-4,688	-
NSF	ECCS-1954606	Collaborative Research: Energy Efficient Voltage Controlled Non-volatile Domain Wall Devices for Neural Networks	47.RD	20,800	-
NSF	IIP-2011473	I-Corps Teams: IoT Sensor Networks Detecting User Behavior in Architectural Space	47.RD	-723	-
NSF	IIP-2016398	I-Corps Teams: Machine Learning (ML)-powered Data Analyzer for Radio Frequency Integrated Circuits (RFIC) Design	47.RD	-71	-
NSF	SES-2001208	Advancing Methods for Analyzing Coordination: New Developments in Global Game Theory	47.RD	5,660	-

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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
		Total for National Science Foundation		**90,004,328**	**8,665,193**
		TOTAL for National Science Foundation		**90,004,328**	**8,665,193**
		TOTAL Federal Research Support - On Campus		**397,642,690**	**57,699,383**

Appendix A-2
Massachusetts Institue of Technology
Schedule of Expenditures of Federal Awards - Lincoln Laboratory
By Sponsor & Contract - FY 2022

Sponsor	Contract Number	Program Name	AL #	Total $ Amount Expended	$ Amount Passed to Subrecipients
DEPARTMENT OF DEFENSE					
AIR FORCE	FA8721-05-C-0002		12.RD	$ 34,803	$ 34,828
	FA8702-15-D-0001		12.RD	356,318,740	37,174,682
ARMY	FA8702-15-D-0001		12.RD	66,281,331	3,351,069
CLASSIFIED	FA8702-15-D-0001		12.RD	258,307,063	14,238,491
DEFENSE ADVANCED RESEARCH PROJECT AGENCY	FA8702-15-D-0001		12.RD	29,634,058	-
MISSILE DEFENSE AGENCY	FA8702-15-D-0001		12.RD	82,673,379	-
NATIONAL SECURITY AGENCY	FA8702-15-D-0001		12.RD	16,353,397	-
NAVY	FA8702-15-D-0001		12.RD	64,281,358	6,913,386
OTHER DEPARTMENT OF DEFENSE	FA8702-15-D-0001		12.RD	138,182,797	3,134,584
TOTAL DEPARTMENT OF DEFENSE				**$ 1,012,066,926**	**$ 64,847,040**
NON DEPARTMENT OF DEFENSE					
DEPARTMENT OF ENERGY	FA8702-15-D-0001		81.RD	$ 6,166,266	$ -
DEPARTMENT OF HOMELAND SECURITY	FA8702-15-D-0001		97.RD	19,701,266	1,136,345
FEDERAL AVIATION AUTHORITY	FA8702-15-D-0001		20.RD	24,107,660	84,774
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	FA8702-15-D-0001		43.RD	25,960,958	3,407,760
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION	FA8702-15-D-0001		11.RD	7,740,410	1,116,936
OTHER NON DOD	FA8702-15-D-0001		99.RD	15,331,479	289,726
TOTAL NON-DEPARTMENT OF DEFENSE				**$ 99,008,039**	**$ 6,035,541**
TOTAL DIRECT AWARDS				**$ 1,111,074,965**	**$ 70,882,581**

Appendix A-2
Massachusetts Institue of Technology
Schedule of Expenditures of Federal Awards - Lincoln Laboratory
By Sponsor & Contract - FY 2022 Continued

Prime Sponsor and Sponsor	Passthrough Contract Number	Program Name	AL #	Total	$ Amount Passed to Subrecipients
DEPARTMENT OF DEFENSE					
AIR FORCE					
ASTRA, LLC	FA8750-18-C-0119	Sun-Tracking Millimeter-Wave Radiometer	12.RD	50,276	-
RedShred, LLC	FA864922P0093	Air Force Data Hub	12.RD	17,127	-
Target Arm, Inc.	FA864922P0882	AF Arsenal Aircraft	12.RD	12,940	-
Vescent Photonics	FA864921P0956	SBS Lasers for Quantum Timing	12.RD	534,640	-
MIT Campus	FA8750-19-2-1000	AI for Personalized Foreign Language Education	12.RD	26,216	-
MIT Campus	FA8750-19-2-1000	COVID-19: AI for Personalized Foreign Language Education	12.RD	26,323	-
MIT Campus	FA8750-19-2-1000	Explainable Machine Learning for Decision	12.RD	22,614	-
MIT Campus	FA8750-19-2-1000	COVID-19: Explainable Machine Learning for Decision	12.RD	143,016	-
MIT Campus	FA8750-19-2-1000	AI-Enhanced Spectral Awareness	12.RD	10,677	-
MIT Campus	FA8750-19-2-1000	COVID-19: AI-Enhanced Spectral Awareness	12.RD	59,187	-
MIT Campus	FA8750-19-2-1000	Objective Performance Prediction & Optimization	12.RD	96,384	-
MIT Campus	FA8750-19-2-1000	COVID-19: Objective Performance Prediction & Optimization	12.RD	289,561	-
MIT Campus	FA8750-19-2-1000	AI-Enhanced Spectral Awareness	12.RD	27,690	-
MIT Campus	FA8750-19-2-1000	COVID-19: AI-Enhanced Spectral Awareness	12.RD	58,083	-
MIT Campus	FA8750-19-2-1000	AI-Robust Neural Differential Models	12.RD	15,689	-
MIT Campus	FA8750-19-2-1000	COVID-19: AI-Robust Neural Differential Models	12.RD	19,255	-
MIT Campus	FA8750-19-2-1000	COVID-19: AI-Automation in Space Domain Aware	12.RD	3,253	-
ARMY					
Advanced Functional Fabrics of America	W15QKN-16-3-0001	Controlled Reflectivity Fabrics	12.RD	325,181	66,620
Kumu Networks, Inc.	W56KGU-21-0035	SF-STAR Tactical Radios	12.RD	253,187	-
Si2 Technologies	W911QX-18-P-0178	Additive Manufacturing for RF Materials	12.RD	60,861	-
Synoptic, Inc.	W56KGU21C0013	Distributed Tactical Communications	12.RD	(73)	-
MIT Campus	W911NF-13-D-0001	Diamond Electronics	12.RD	7,169	-
MIT Campus	W911NF-20-F0026	High Performance Micropropulsion System	12.RD	7,360	-
MIT Campus	W911NF-13-D-0001	Q-Diamond	12.RD	490,815	-
MIT Campus	W911NF-20-1-0037	Metastable Qubits Multi-Ion Systems	12.RD	44,986	-
DEFENSE ADVANCED RESEARCH PROJECT AGENCY					
Geegah, LLC	HR001121C0231	Ultracompact CMOS Integrated Ultrasonic	12.RD	69,997	-
MISSILE DEFENSE AGENCY					
S12 Technologies, Inc.	HQ0860-21-C-7035	Additive Manufacturing of RF Devices	12.RD	4,558	-
NAVY					
Ohio State University	N00014-17-1-2440	Low Excess-Noise Avalanche Photodetector	12.RD	42,821	-
Science Research Laboratory, Inc.	N68335-18-C-0509	Efficient Compact Diode-Pumped High-Power Fiber Coupled Laser Modules	12.RD	18,284	-
Vescent Photonics LLC	N68335-19-C-0642	Diamond Deployed Devices	12.RD	108,204	-
The Innovation Laboratory	N68335-20-F-0566	Aircraft Threat Intent Estimation	12.RD	135,098	-
Triton Systems, Inc.	N68335-20-C-0704	Retractable Antenna for Improved Communications in Satellite-denied Environmer	12.RD	216,625	-
Irradiant Technologies Inc.	N68335-21-C-0569	3D Patterned Beam Steering Device	12.RD	39,180	-
MIT Campus	N00014-20-1-2533	Secure and Resiliant Soft Real-Time	12.RD	91,431	-
OUSD A&S					
Johns Hopkins University Applied Physics Laboratory	HQ003419D0006 (WHSI)	Cyber Resillience Assessments	12.RD	448,292	-
SOCOM					
Mission Solutions Group	H92405-20-F-0003-P00001	API and Data Framework for Tactical AI	12.RD	20,206	-
		Total Department of Defense		**$ 3,797,113**	**$ 66,620**
NON DEPARTMENT OF DEFENSE					

Appendix A-2
Massachusetts Institue of Technology
Schedule of Expenditures of Federal Awards - Lincoln Laboratory
By Sponsor & Contract - FY 2022 Continued (DRAFT)

Prime Sponsor and Sponsor	Passthrough Contract Number	Program Name	AL #	Total	$ Amount Passed to Subrecipients
DEPARTMENT OF ENERGY					
Lawrence Berkeley National Laboratory	DE-AC02-05CH11231	Advanced Quantum Testbed	81.RD	1,380,442	-
Telluric Labs, LLC	DE-SC0019581	Rad-Hard Terabit Data Links for Particle Physics	81.RD	160,119	45,098
UT-Battelle, LLC	DE-AC05-00OR22725	Smokey-X: Cyber-Physical Systems Research	81.RD	54,407	-
Triton Systems, Inc.	DE-SC0021947	Fiber Based Heat Exchangers for HVAC	81.RD	78,017	-
MIT Campus	499232	Phonon-Coupling in Qubits	81.RD	41,856	-
MIT Campus	C00069059-2	GaN Vertical Fin Power Transistor Epi	81.RD	3,434	-
MIT Campus	N000394719	Microplasma Sputtering for 3D Printing	81.RD	32,861	-
MIT Campus	N000428947	Atmospheric Microplasma Sputtering	81.RD	43,091	-
FEDERAL AVIATION AUTHORITY					
MIT Campus	13-C-AJFE-MIT-047	Ascent Project 46	12.RD	87,460	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION					
Jet Propulsion Laboratory	NNN12AA01C	Psyche Deep-Space Optical Communications	43.RD	64,570	-
Jet Propulsion Laboratory	NNN12AA01C	Europa Lander Ladar Design Study	43.RD	6,391,444	84,010
Jet Propulsion Laboratory	NNN12AA01C	Uplink Laser Transmitter Study	43.RD	89,350	-
AdvR Inc.	80NSSC20C0643	High-purity, High-rate, Photon Pair Sour	43.RD	33,904	-
George Washington University	80NSSC21M0087	Autonomous Air Traffic Mgt Adv Air Mobil	43.RD	164,729	-
Vescent Photonics, LLC	80NSSC21C0091	SBS Lasers for Quantum Timing	43.RD	26,976	-
The Tomorrow Companies, Inc.	80NSSC21C0158	Urban Air Mobility Weather Testbed	43.RD	35,503	-
MIT Campus	80NSSC18K1677	Auroral Emissions Radio Explorer	43.RD	669,680	-
MIT Campus	80NSSC19K0617	LL Vista	43.RD	43,369	-
MIT Campus	SV0-09008	Readying X-Ray Grating	43.RD	7,239	-
MIT Campus	80NSSC20K0401	Toward Fast, Low-Noise, Radiation-Tolerant	43.RD	440,546	-
MIT Campus	62467927-176172	Safe Aviation Autonomy	43.RD	35,723	-
MIT Campus	NNG14FC03C	Faint Object Detection in TESS Data	43.RD	21,512	-
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION					
NOAA Collaboration Agreement	NA21OAR4590385	Development and Deployment of a Sea Clutter Class within the Operational WSR-	11.RD	136,251	-
NOAA Collaboration Agreement	NA21OAR4590395	Development and Demonstration of a Low-Cost, Standalone Mode S EHS Aircraft	11.RD	237,985	-
NATIONAL INSTITUTE OF HEALTH					
Massachusetts General Hospital	1-R01-DK119860-01	Diagnostic Assistant for Fatty Liver Disease	93.RD	114,632	-
Massachusetts General Hospital	1-U01-EB028660-01	Diffuse Correlation Spectroscopy for Functional Imaging of the Human Brain	93.RD	956,539	154,550
Massachusetts General Hospital	3U54HL119145-07S1	MIRACLE	93.RD	180,438	-
Massachusetts General Hospital	HHSN272201400008C	Characterizing COVID-19 Aerosols	93.RD	69,154	-
University of Florida	2RF1AG049722-06	Functional Connectivity Mapping	93.RD	97,291	-
MBF Bioscience	IR43MH128076	Meso-Scale Brain Mapping	93.RD	19,716	-
MIT Campus	1-R01-MH111916-01A1	Development of an Integrated Multimodal	93.RD	44,662	-
MIT Campus	1-R01-EB025256-01A1	Programmable Multi-Step Genetic Difference	93.RD	191,136	-
MIT Campus	230321	Treatment of Vocal Hyperfunction	93.RD	90,148	-
MIT Campus	5-U01-MH117072-03	Integrated Cell Type Brain Mapping	93.RD	194,367	-
NATIONAL SCIENCE FOUNDATION					
University of Illinois Urbana-Champagne	FAIN 2016244	Quantum Leap Challenge Institute	47.070	275,949	-
MIT Campus	CCF-1521759	Evolvable Living Computing	47.070	(33,821)	-
MIT Campus	AST-1836002	LLAMAS Optical System Integration	47.070	1,338	-
Regents of the University of Michigan	1952279	Improving Human-Exoskeleton through Dyna	47.070	110,438	-
The Regents of the University of Colorado	(FAIN) 2016244	Quantum Leap Challenge Institute	47.070	10,332	-
MIT Campus	AGS-1952737	Millstone Hill Geospace Facility: Vector Sensor Meteor	47.070	391,210	-
		Total Non Department of Defense		**$ 12,993,997**	**$ 283,658**
Total Passthrough Awards				**$ 16,791,110**	**$ 350,278**
Total Federal Awards				**$ 1,127,866,075**	**$ 71,232,859**

Appendix A3
Massachusetts Institute of Technology
Federal Research Support - Passthrough - On Campus
FY 2022 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						
NextGen Imaging Technologies, Inc.						
DEPARTMENT OF DEFENSE	6946521		Tethered Drone for Long Range Surveillance	12.RD	13,859	-
			Total for NextGen Imaging Technologies, Inc.		**13,859**	**-**
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	155,792	-
			Total for Raytheon Technologies Corporation		**155,792**	**-**
Purdue University						
DEPARTMENT OF DEFENSE	6946173	13001075-011	Topological plasma structures for control of electromagnetic interactions	12.800	71,580	-
			Total for Purdue University		**71,580**	**-**
ARCTOS Technology Solutions, LLC.						
DEPARTMENT OF DEFENSE	6936095	17-S8401-05-C1 / PO# SUBK-00150	Adaptive Flight Control for Hypersonic Vehicles with Integrated Loops Using High Fidelity Models	12.RD	141,736	-
			Total for ARCTOS Technology Solutions, LLC.		**141,736**	**-**
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	518,615	-
DEPARTMENT OF DEFENSE	6943120	G14463	TRAUMAS: Treatment and recovery augmented with electrical and ultrasound- mediated actuation and sensing	12.910	246,213	-
DEPARTMENT OF DEFENSE	6943003	SUB# 5(GG015670) / PO# SAPOG14463	TRAUMAS: Treatment and recovery augmented with electrical and ultrasound- mediated actuation and sensing	12.910	341,115	-
			Total for Columbia University		**1,105,943**	**-**
University of Texas at Arlington						
DEPARTMENT OF DEFENSE	6941202	2016GC5246	(MURI) Next Generation Advances in Ionosphere Thermosphere Coupling at Multiple Scales for Environmental Specification and Prediction	12.800	71,738	32,647

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Massachusetts Institute of Technology
Federal Research Support - Passthrough - On Campus
FY 2022 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	6941202	2016GC5246	COVID-19: (MURI) Next Generation Advances in Ionosphere Thermosphere Coupling at Multiple Scales for Environmental Specification and Prediction	12.800	78,688	1,974
			Total for University of Texas at Arlington		**150,426**	**34,620**
Azimuth Corporation						
DEPARTMENT OF DEFENSE	6945195	238-013	Active Metasurface	12.RD	105,976	-
			Total for Azimuth Corporation		**105,976**	**-**
University of Maryland						
DEPARTMENT OF DEFENSE	6935254	43830-Z8183003	MURI: Photonic Quantum Matter	12.800	134,903	-
			Total for University of Maryland		**134,903**	**-**
Stanford University						
DEPARTMENT OF DEFENSE	6944571	62455258-159327	ANSRE: Analysis and Synthesis of Rare Events	12.800	184,937	-
DEPARTMENT OF DEFENSE	6944571	62455258-159327	COVID-19: ANSRE: Analysis and Synthesis of Rare Events	12.800	98,328	-
DEPARTMENT OF DEFENSE	6944526	62459355-155611	COVID-19: Engineering native human skin commensals to eliminate attractants and introduce repellents and mosquito tracking using millisecond device apparati	12.910	6,723	-
DEPARTMENT OF DEFENSE	6945687	62459355-155611	Engineering native human skin commensals to eliminate attractants and introduce repellents and mosquito tracking using millisecond device apparati	12.910	100,520	-
DEPARTMENT OF DEFENSE	6944528	62459356-155611	COVID-19: Engineering native human skin commensals to eliminate attractants and introduce repellents and mosquito tracking using millisecond device apparati	12.910	9,177	-
DEPARTMENT OF DEFENSE	6945689	62459356-155611	Engineering native human skin commensals to eliminate attractants and introduce repellents and mosquito tracking using millisecond device apparati	12.910	107,140	-
DEPARTMENT OF DEFENSE	6944527	62459358-155611	COVID-19: Engineering native human skin commensals to eliminate attractants and introduce repellents and mosquito tracking using millisecond device apparati	12.910	-83,568	-
DEPARTMENT OF DEFENSE	6945688	62459358-155611	Engineering native human skin commensals to eliminate attractants and introduce repellents and mosquito tracking using millisecond device apparati	12.910	118,525	-
DEPARTMENT OF DEFENSE	6944524	62459359-155611	COVID-19: Engineering native human skin commensals to eliminate attractants and introduce repellents and mosquito tracking using millisecond device apparati	12.910	-12,271	-
DEPARTMENT OF DEFENSE	6945667	62459359-155611	Engineering native human skin commensals to eliminate attractants and introduce repellents and mosquito tracking using millisecond device apparati	12.910	98,195	-

Appendix A3
Massachusetts Institute of Technology
Federal Research Support - Passthrough - On Campus
FY 2022 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	6944525	62459360-155611	COVID-19: Engineering native human skin commensals to eliminate attractants and introduce repellents and mosquito tracking using millisecond device apparati	12.910	-11,161	-
DEPARTMENT OF DEFENSE	6945686	62459360-155611	Engineering native human skin commensals to eliminate attractants and introduce repellents and mosquito tracking using millisecond device apparati	12.910	100,392	-
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	36,520	-
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	101,200	-
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	3,250	-
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	54,715	-
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	32,667	-
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	52,207	-
DEPARTMENT OF DEFENSE	6944098	MULTIPLE	Engineering native human skin commensals to eliminate attractants and introduce repellents and mosquito tracking using millisecond device apparati	12.910	-612	-
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	99,315	-
DEPARTMENT OF DEFENSE	6931094	60744752-114407	Role of Bidirectional Computation in Visual Scene Analysis	12.300	158,107	-
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	158,139	-
			Total for Stanford University		**1,412,445**	**-**
Lincoln Laboratory						
DEPARTMENT OF DEFENSE	6941920	7000469159	A Safe and High-Energy-Density Electrochemical Power System Using Liquid Fluorinated Reactants	12.RD	117,218	-
DEPARTMENT OF DEFENSE	6945792	7000510281	Wearable stem cell scaffolds for expedited tissue regeneration	12.RD	82,188	-

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DEPARTMENT OF DEFENSE	6945165	7000511601	Aluminum-Water Buoyancy Engine for Fast Vertical Underwater Glider	12.RD	82,363	-
DEPARTMENT OF DEFENSE	6945494	7000515469	Cold-Source Steep-Slope Field Effect Transistor	12.RD	139,399	-
DEPARTMENT OF DEFENSE	6945787	7000519719	Autonomous Surface Vehicle Deployment with Inter- and Intra-Team Coordination from High-level Specifications (IITCHS)	12.RD	90,371	-
DEPARTMENT OF DEFENSE	6943900	PO # 7000493110	3D Hetero-integrated Image Sensor via Remote Epitaxy and 2D Layer Transfer	12.RD	67,622	-
DEPARTMENT OF DEFENSE	6946653	PO 7000533287	Heteroepitaxial Integrated Photonics (HIP)	12.800	48,181	-
DEPARTMENT OF DEFENSE	6947091	PO 7000540807	Project Tandem - Advance Open Autonomy for AUVs	12.RD	27,413	-
DEPARTMENT OF DEFENSE	6947440	PO 7000545061	Line-funded SNSPD-array Program	12.RD	11,565	-
DEPARTMENT OF DEFENSE	6947693	PO 7000548323	Automated learning of action sequences from many hours of video description	12.RD	39,674	-
DEPARTMENT OF DEFENSE	6943164	PO# 7000290592	Coherent Spin Qubits for Quantum-Enhanced Optimization	12.RD	200,575	-
DEPARTMENT OF DEFENSE	6935235	PO# 7000370657	Phase Change Metamaterials	12.RD	8,634	-
DEPARTMENT OF DEFENSE	6935965	PO# 7000381569	Demonstration of Logical Qubits using 3D Integration	12.RD	164,679	-
DEPARTMENT OF DEFENSE	6936301	PO# 7000385936	Design and Characterization of JTWPAs	12.RD	110,707	-
DEPARTMENT OF DEFENSE	6936468	PO# 7000386377	Time-Resolved Observations of Precipitation structure and storm Intensity with a Constellation of Smallsats (TROPICS)	12.RD	83,122	-
DEPARTMENT OF DEFENSE	6942362	PO# 7000398589 / LETTER NO. 16-C-17-0691	Alternatives for FEMA Disaster-Related Housing Assistance	12.RD	126,686	-
DEPARTMENT OF DEFENSE	6946692	PO# 7000399771	MIT Haystack Observatory Engineering Support for The Lincoln Space Surveillance Complex (LSSC)	12.RD	2,549,015	-
DEPARTMENT OF DEFENSE	6937581	PO# 7000403560	Secure Processing Engine for Self-configuring Autonomous Systems	12.RD	26,092	-
DEPARTMENT OF DEFENSE	6937963	PO# 7000409620	Unhackable Mission Computer	12.RD	96,912	-
DEPARTMENT OF DEFENSE	6939172	PO# 7000424794	Support of the Westford 9M Remote Antenna - Group 64	12.RD	6,976	-
DEPARTMENT OF DEFENSE	6939164	PO# 7000427652	Secure Multi-Party Computation	12.RD	-8,741	-
DEPARTMENT OF DEFENSE	6940197	PO# 7000441730	Miniature Cryocooler as a Platform for Quantum Sensors	12.RD	49,137	-
DEPARTMENT OF DEFENSE	6945067	PO# 7000442717	Quantum Memory Technology Development for Quantum Network Testbed Demonstration	12.RD	102,104	-
DEPARTMENT OF DEFENSE	6940223	PO# 7000443135	Task Execution with Semantic Segmentation	12.RD	78,093	-
DEPARTMENT OF DEFENSE	6940307	PO# 7000444597	Wide Area Ocean Floor Mapping	12.RD	75,095	-
DEPARTMENT OF DEFENSE	6940956	PO# 7000455589	Wallace Observatory Support in Mustang Program	12.RD	3,309	-
DEPARTMENT OF DEFENSE	6941416	PO# 7000462136	Dry-X Adhesive Tape for Instant Surgical-Strength Tissue Sealing	12.RD	9,289	-

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DEPARTMENT OF DEFENSE	6942091	PO# 7000470769	Technologies for Reliable Assured Autonomy in Challenging Environments (TRAACE)	12.RD	126,759	-
DEPARTMENT OF DEFENSE	6942563	PO# 7000471328	Superconducting Sensors for Neutrino Detection	12.RD	85,003	-
DEPARTMENT OF DEFENSE	6942397	PO# 7000474480	Design of kirigami airfoils with tunable drag to lift ratio	12.RD	-4,004	-
DEPARTMENT OF DEFENSE	6942724	PO# 7000478792	USAID Humanitarian Supply Chains	12.RD	108,633	-
DEPARTMENT OF DEFENSE	6943010	PO# 7000482739	Super-DICE Superconducting Discrete Integrated Electronics	12.RD	6,590	-
DEPARTMENT OF DEFENSE	6943134	PO# 7000483190	Sequence Representation Learning in Low Resource, Complex Task Regimes (SERT).	12.RD	7,396	-
DEPARTMENT OF DEFENSE	6943126	PO# 7000483598	System Analysis and Prototype Development for Undersea Exploration Platforms	12.RD	26,764	-
DEPARTMENT OF DEFENSE	6943512	PO# 7000488488	Tunable Infrared Detector and Spectrometer Based on Bilayer Graphene	12.RD	-1,155	-
DEPARTMENT OF DEFENSE	6943655	PO# 7000490935	Capabilities Development Group	12.RD	-430	-
DEPARTMENT OF DEFENSE	6944072	PO# 7000494927	Embedded ICS Security Module	12.RD	83,797	-
DEPARTMENT OF DEFENSE	6944075	PO# 7000495145	Cross-Modal Learning with Vision, Natural Sounds, and Speech	12.RD	19,183	-
DEPARTMENT OF DEFENSE	6944314	PO# 7000497500	Micro-Textured Surfaces for Enhanced Two-Phase Thermal Management	12.RD	63,710	-
DEPARTMENT OF DEFENSE	6944366	PO# 7000497681	Multimodal Learning for Medical Diagnostics and Decision-Making (ML4MD)	12.RD	16,052	-
DEPARTMENT OF DEFENSE	6944343	PO# 7000497994	Structurally Embedded 3D Printing of Carbon Nanotube-Copper Composite Antennas and Electronics	12.RD	65,112	-
DEPARTMENT OF DEFENSE	6944457	PO# 7000499886	Solar Cells for Wafer Satellites	12.RD	890	-
DEPARTMENT OF DEFENSE	6944493	PO# 7000499932	Harnessing flexoelectricity for broadband photodetection and energy generation	12.RD	95,730	-
DEPARTMENT OF DEFENSE	6944494	PO# 7000500173	Secure Blended Service for 5G and Beyond	12.RD	54,473	-
DEPARTMENT OF DEFENSE	6944702	PO# 7000501363	Reconfigurable Computer Generated Holograms for Freeform Optics	12.RD	104,409	-
DEPARTMENT OF DEFENSE	6944607	PO# 7000501576	Midwave Infrared Integrated Photonics Platform	12.RD	26,389	-
DEPARTMENT OF DEFENSE	6944622	PO# 7000502143	Scalable Topological Superconducting Materials for Fault-tolerant Quantum Information	12.RD	47,147	-
DEPARTMENT OF DEFENSE	6944659	PO# 7000502371	Ferrioelectric FET based in -memory Compute Hardware	12.RD	16,470	-
DEPARTMENT OF DEFENSE	6944653	PO# 7000502464	Long Range Transmissive X-ray Study	12.RD	8,307	-
DEPARTMENT OF DEFENSE	6945062	PO# 7000503412	Climate Modeling and Climate Impact Assessment	12.RD	48,189	-
DEPARTMENT OF DEFENSE	6944797	PO# 7000504042	Universal Deep Steganalysis: Challenges and Methods	12.RD	105,982	-
DEPARTMENT OF DEFENSE	6944802	PO# 7000504551	Integrated Acousto-optics	12.RD	5,962	-

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DEPARTMENT OF DEFENSE	6944883	PO# 7000505815	Data-driven Exploration of Cyber-Security	12.RD	48,136	-
DEPARTMENT OF DEFENSE	6946025	PO# 7000523043	In-Space Manufacturing of Large, Stiff, and Thermally Stable Structures	12.RD	142,148	-
DEPARTMENT OF DEFENSE	6946003	PO# 7000523549	Dynamic structural colors at scale: optical manufacture of mechano-responsive photonic sheets at the m2-scale	12.RD	78,451	-
DEPARTMENT OF DEFENSE	6946659	PO# 7000526012	Quantum Bus	12.RD	215,353	-
DEPARTMENT OF DEFENSE	6946246	PO# 7000527979	SBS Lasers for Quantum Timing	12.RD	20,853	-
DEPARTMENT OF DEFENSE	6946435	PO# 7000530004	Demonstrating Performance of 3D-Integrated Qubit Arrays and Protected Qubits	12.RD	102,557	-
DEPARTMENT OF DEFENSE	6946552	PO# 7000531720	Influence Quantification (IQ)	12.RD	51,138	-
DEPARTMENT OF DEFENSE	6946545	PO# 7000531792	Dual-Purpose Gasphilic Surfaces for Enhanced Microchannel Flow Boiling and Drag Reduction	12.RD	59,370	-
DEPARTMENT OF DEFENSE	6946596	PO# 7000532429	Electrostatic Acoustic NEMS Enable Noise Cancellation for Hearing Protection and Auditory Augmentation	12.RD	109,345	-
DEPARTMENT OF DEFENSE	6946736	PO# 7000534536	Support for the application of AI to accelerate drug development	12.RD	80,259	-
DEPARTMENT OF DEFENSE	6946760	PO# 7000534582	Optical Antenna Design for Advanced Cooling and State Preparation of Trapped Ions	12.RD	8,143	-
DEPARTMENT OF DEFENSE	6946911	PO# 7000535491	Midwave Infrared Integrated Photonics Platform	12.RD	29,671	-
DEPARTMENT OF DEFENSE	6947064	PO# 7000537912	High-Performance Micropropulsion System	12.RD	62,950	-
DEPARTMENT OF DEFENSE	6946993	PO# 7000538504	Miniaturized Coherent Raman Spectrometer	12.RD	59,421	-
DEPARTMENT OF DEFENSE	6947307	PO# 7000544348	Germanium Charge-Coupled Devices for Large-Format, Low-Noise Hard X-Ray Sensors	12.RD	48,419	-
DEPARTMENT OF DEFENSE	6947340	PO# 7000544674	Secure Blended Service for 5G and Beyond	12.RD	6,558	-
DEPARTMENT OF DEFENSE	6936545	PO# 7100389700	WaferSat	12.RD	92,549	-
DEPARTMENT OF DEFENSE	6940387	PO# 7100443447	Resilient Perception in Degraded Environments	12.RD	116,115	-
DEPARTMENT OF DEFENSE	6945614	PO# 7100514642	Development of Coupled Thermomechanics Models of Material Ablation and Spallation in Hypersonic Environments	12.RD	91,809	-
DEPARTMENT OF DEFENSE	6946633	PO# 7100532906	Sampling the thermodynamic of materials interfaces with machine learning	12.RD	6,999	-
DEPARTMENT OF DEFENSE	6946707	PO#: 7000532690/#7100532690	ANPEG Study on Mobile Nuclear Power Capability Opportunities	12.RD	49,408	-
DEPARTMENT OF DEFENSE	6940225	PO#7000442809	Embedded ICS Security Module	12.RD	34,053	-
DEPARTMENT OF DEFENSE	6942350	PO#7000473193	Color Changing Fabrics	12.RD	4,468	-
DEPARTMENT OF DEFENSE	6942809	PO#7000480340	Defeating Key Disclosure with Quantum Low Probability of Intercept	12.RD	7,225	-
DEPARTMENT OF DEFENSE	6943889	PO#7000492973	Private Automated Contact Tracing (PACT)	12.RD	4,786	-

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DEPARTMENT OF DEFENSE	6945672	PO#7000518702	Long COVID / Outcomes Tracking Platform (Lincoln Labs)	12.RD	130,000	-
DEPARTMENT OF DEFENSE	6946599	PO#7000528180	On-Chip Coherent EUV Light Sources	12.RD	139,771	-
DEPARTMENT OF DEFENSE	6947182	PO#7000541847	Cloud-based Deployment of MIT Regional Climate Models	12.RD	62,399	-
DEPARTMENT OF DEFENSE	6944442	PO# 7000493366	U.S. Army FARA Subcontract with Lincoln Lab	12.RD	0	-
DEPARTMENT OF DEFENSE	6940202	PO#7000442474	Neural Control of Exoskeletons	12.RD	8,057	-
			Total for Lincoln Laboratory		**7,375,450**	**-**
Boise State University						
DEPARTMENT OF DEFENSE	6945142	8583-PO132256	Plasma and Electro-Energetic Physics	12.800	31,963	-
			Total for Boise State University		**31,963**	**-**
University of Minnesota						
DEPARTMENT OF DEFENSE	6943095	A006524101	Optimal Sensor Tasking Through Deep Reinforcement Learning for Space Situational Awareness	12.800	73,304	-
DEPARTMENT OF DEFENSE	6941912	A007146101	Development of Dynamic Data-Driven Uncertainty Quantification System	12.800	90,396	-
DEPARTMENT OF DEFENSE	6937286	A006141803	Predicting Turbulent Multi-Phase Flows with High Fidelity: A Physics-Based Approach	12.300	189,708	-
			Total for University of Minnesota		**353,408**	**-**
Emory University						
DEPARTMENT OF DEFENSE	6941330	A007735	MURI: Molecular Level Studies of Solid-Liquid Interfaces in Electrochemical Processes	12.800	316,999	-
			Total for Emory University		**316,999**	**-**
Electra.aero						
DEPARTMENT OF DEFENSE	6947628	AGMT DATED 5/6/2022	Innovative Control and Configurations for Aircraft with Distributed Electric Propulsion	12.RD	13,489	-
DEPARTMENT OF DEFENSE	6944911	AGRMT EFFECTIVE DATE 12/3/2020	Innovative Control and Configurations for Aircraft with Distributed Electric Propulsion	12.800	24,013	-
			Total for Electra.aero		**37,503**	**-**
Tangram Flex, Inc						
DEPARTMENT OF DEFENSE	6945387	AGMT DTD	Secure-by-Construction Automation of Low-level Deserialization and Serialization (SCALDS)	12.RD	14,984	-
			Total for Tangram Flex, Inc		**14,984**	**-**

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Mesodyne						
DEPARTMENT OF DEFENSE	6947489	AGMT DTD 3/31/2022	Design and Optimization of a JP-8 injector for meso-combustors	12.RD	38,920	-
			Total for Mesodyne		**38,920**	**-**
Target Arm, Inc.						
DEPARTMENT OF DEFENSE	6945996	AGMT. DTD. 02/26/2021	Air Force Arsenal Aircraft: Persistent Air Dominance with UCAVs	12.RD	18,655	-
			Total for Target Arm, Inc.		**18,655**	**-**
SUNY: AIM Photonics						
DEPARTMENT OF DEFENSE	6936145	AGMT. DTD. 3/22/2016	IP-IMI	12.800	-1,258	-
			Total for SUNY: AIM Photonics		**-1,258**	**-**
Alexandria Health LLC						
DEPARTMENT OF DEFENSE	6947030	AGRMT. DTD. 11/4/2021	Case Mix Adjusted Benchmarking at Military Treatment Facilities	12.RD	13,752	-
			Total for Alexandria Health LLC		**13,752**	**-**
Via Science, Inc.						
DEPARTMENT OF DEFENSE	6945480	AGRMT. DTD. 2/10/2021	DataVeil: Privacy protection for AI analysis of pilot training data	12.RD	-614	-
			Total for Via Science, Inc.		**-614**	**-**
Jaxon, Inc.						
DEPARTMENT OF DEFENSE	6945473	AGRMT. DTD. 2/8/2021	Artificial Intelligence Fake Image Detector	12.RD	13,463	-
			Total for Jaxon, Inc.		**13,463**	**-**
Spectrohm						
DEPARTMENT OF DEFENSE	6945472	AGRMT. DTD. 2/8/2021	Radio Frequency Imaging for Security & EOD Operations	12.RD	-576	-
			Total for Spectrohm		**-576**	**-**
Skyline Nav AI						
DEPARTMENT OF DEFENSE	6946992	AGRMT. DTD. 4/1/2021	STTR Phase 1: Visual Navigation System	12.RD	14,114	-
			Total for Skyline Nav AI		**14,114**	**-**
Future Semiconductor Business, Inc						

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DEPARTMENT OF DEFENSE	6946907	AWD DTD 11/04/2021	Advance manufacturing of N-face GaN	12.RD	15,000	-
			Total for Future Semiconductor Business, Inc		**15,000**	**-**
University of Chicago						
DEPARTMENT OF DEFENSE	6941412	AWD100348 (SUB00000079)	Design and optimization of synthesizable materials with targeted quantum characteristics	12.800	191,641	-
			Total for University of Chicago		**191,641**	**-**
University of California-Santa Barbara						
DEPARTMENT OF DEFENSE	6940947	KK2014	Quantum Codes, Tensor Networks, and Quantum Spacetime	12.800	212,258	-
DEPARTMENT OF DEFENSE	6935172	KK1713	Neural foundations of expertise based on optimal decision-making, physical control and responses to stress	12.431	86,911	-
DEPARTMENT OF DEFENSE	6937076	KK1808	From Data-Driven Operator Theoretic Schemes to Predication, Inference, and Control of Systems	12.431	122,263	-
DEPARTMENT OF DEFENSE	6940558	SUBAWARD NO. KK1955	ICB UARC projects - Research Projects	12.431	733,379	-
DEPARTMENT OF DEFENSE	6940755	SUBAWARD NO. KK1957-03	Fundamental Biological Factors Underlying Human Performance	12.RD	139,760	-
DEPARTMENT OF DEFENSE	6946573	SUBAWARD NO. KK1957-18	Fundamental Biological Factors Underlying Human Performance	12.RD	15,830	-
			Total for University of California-Santa Barbara		**1,310,400**	**-**
University of New Hampshire						
DEPARTMENT OF DEFENSE	6946454	L0149	Radio Interferometer for Thunderstorm Studies	12.800	19,538	-
			Total for University of New Hampshire		**19,538**	**-**
GE Global Research						
DEPARTMENT OF DEFENSE	6942343	PO 401134429	Measuring Biological aptitude	12.RD	558,484	-
DEPARTMENT OF DEFENSE	6947359	PO 401170010	Human-inspired IDentity Extraction (HIDE) [IARPA BRIAR]	12.RD	5,824	-
			Total for GE Global Research		**564,307**	**-**
Applied Research Associates, Inc.						
DEPARTMENT OF DEFENSE	6946947	S-D00243-05-IDIQ-MIT	Machine Intelligence Solutions for Nuclear Explosion Monitoring (MINEM)	12.RD	22,757	-
			Total for Applied Research Associates, Inc.		**22,757**	**-**
Johns Hopkins University						

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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	79,668	-
			Total for Johns Hopkins University		**79,668**	**-**
Siemens Corporation, Corporate Technology						
DEPARTMENT OF DEFENSE	6944760	SUB AGREEMENT NO. 198-02	Systemic Generative Engineering	12.RD	312,712	-
			Total for Siemens Corporation, Corporate Technology		**312,712**	**-**
UES, Inc.						
DEPARTMENT OF DEFENSE	6942017	SUB NO. S-111-051-006	Synthetic Biology to Access Unnatural Porphyrins as Intermediates for Photonic Applications	12.RD	94,876	-
			Total for UES, Inc.		**94,876**	**-**
University of Washington						
DEPARTMENT OF DEFENSE	6941764	UWSC11381 PO42935	Neural-inspired sparse sensing and control for agile flight	12.800	119,902	-
DEPARTMENT OF DEFENSE	6941979	UWSC11420	2D MAGIC: New Science from Two-Dimensional MAGnetIC Heterostructures	12.800	418,828	-
DEPARTMENT OF DEFENSE	6941979	UWSC11420	COVID-19: 2D MAGIC: New Science from Two-Dimensional MAGnetIC Heterostructures	12.800	-44,747	-
DEPARTMENT OF DEFENSE	6946930	UWSC13445	Scalable Hybrid-optics Integrated Night-vision Eyeglass (SHINE)	12.RD	132,061	-
			Total for University of Washington		**626,045**	**-**
Wright Brothers Institute						
DEPARTMENT OF DEFENSE	6944224	WBPO-20-109-MIT	Reducing urea/calcium needs using engineered bacteria for on-site co-production and release	12.800	66,025	-
DEPARTMENT OF DEFENSE	6944516	WBPO-21-018-MIT	Probiotic interventions to reduce fatigue by maintaining brain ATP levels	12.RD	670,333	292,598
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	132,248	-
			Total for Wright Brothers Institute		**868,606**	**292,598**
Zona Technology, Inc.						
DEPARTMENT OF DEFENSE	6941723	ZTSMIT-CHAOTIC-II	STTR Phase II: AF17A-T017: FUN3D-based Sensitivity Analysis for F-15 in Chaotic Flows	12.RD	1,312	-
			Total for Zona Technology, Inc.		**1,312**	**-**

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Beth Israel Deaconess Medical Center						
DEPARTMENT OF DEFENSE	6942454	01029123	DAMP-Mediated Innate Immune Failure and Pneumonia after Trauma	12.420	-15,147	-
			Total for Beth Israel Deaconess Medical Center		**-15,147**	**-**
University of Utah						
DEPARTMENT OF DEFENSE	6939676	10048163-MIT / PO# U000165214	In-Situ Feature Extraction and Visualization from Discontinuous Galerkin Based High-Order Methods	12.431	4,388	-
DEPARTMENT OF DEFENSE	6935768	10043028-MIT	Design Responding to Engineering Analysis in support of Manufacturing	12.910	67,347	-
DEPARTMENT OF DEFENSE	6935759	10043182-MIT	Augmented Design Through Analysis and Visualization Facilitating Better Designs and Enhanced Designers	12.910	-6	-
			Total for University of Utah		**71,730**	**-**
Carnegie-Mellon University						
DEPARTMENT OF DEFENSE	6942018	1130236-420697	MasAI-Assisted Detection and Target Recognition (AIDTR)	12.431	79	-
DEPARTMENT OF DEFENSE	6943335	1130252-431282	COVID-19: Individualized Adaptation in Human Agent Teams	12.630	20,000	-
DEPARTMENT OF DEFENSE	6943335	1130252-431282	Individualized Adaptation in Human Agent Teams	12.630	38,427	-
DEPARTMENT OF DEFENSE	6945392	SUBCONTRACT NO. 1130233-442111	Contrastive dissection to visualize the differences between synthetic and real trained representations	12.431	282,357	-
DEPARTMENT OF DEFENSE	6947554	1190068-455963	RECTIFY: Rechargeability Enabled by Coated inTerfaces and dIFferentable phYsical modeling	12.910	25,317	-
DEPARTMENT OF DEFENSE	6945204	SUBCONTRACT NO. 1990695-439018	Accelerating Human Augmentation Through Artificial Intelligence & Autonomous Systems	12.RD	544,773	-
			Total for Carnegie-Mellon University		**910,953**	**-**
Brigham & Women's Hospital						
DEPARTMENT OF DEFENSE	6942602	122094	Developing targeted chemotherapeutics for malignant brain tumors using an innovative	12.420	47,076	-
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	293,749	-
DEPARTMENT OF DEFENSE	6940336	SUBAWARD 117951	A Novel Approach to Lower Extremity Amputation to Augment Volitional Motor Control and Restore Proprioception	12.420	26,383	-

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DEPARTMENT OF DEFENSE	6940338	SUBAWARD 119948	A Novel Approach to Upper Extremity Amputation to Augment Volitional Motor Control and Restore Proprioception	12.420	51,528	-
			Total for Brigham & Women's Hospital		**418,736**	**-**
Harvard University						
DEPARTMENT OF DEFENSE	6947186	124106	Jane Park Billing Agreement 2	12.431	18,581	-
DEPARTMENT OF DEFENSE	6936171	134062-5093041	Imaging and Control of Biological Transduction using NV-Diamond	12.431	272,589	-
DEPARTMENT OF DEFENSE	6939434	134119-5110647	Topological Superconductivity using Layered Materials	12.431	169,590	-
DEPARTMENT OF DEFENSE	6943704	134371-5113608	Quantum optimization with programmable simulators based on atom arrays	12.431	782,952	-
DEPARTMENT OF DEFENSE	6946146	134396-5117987	Multi-Functional Devices in Precisely Engineering van der Waals Homojunctions	12.431	175,712	-
DEPARTMENT OF DEFENSE	6946239	AGMT DTD 9/17/2021	Jane Park Billing Agreement	12.431	25,148	-
DEPARTMENT OF DEFENSE	6946638	124354	George Varnavides AY 21-22 - Billing Agreement	12.910	30,484	-
DEPARTMENT OF DEFENSE	6939734	167982.0001	Billing Agreement - James Collins - Integration of top-down and bottom-up methodologies for accurate modeling of biological networks	12.RD	2,697	-
DEPARTMENT OF DEFENSE	6937039	123950-5092634	Quantum Opto-Mechanics with Atoms and Nanostructured Diamond (QOMAND)	12.300	0	-
DEPARTMENT OF DEFENSE	6943286	130417-5114573	Next-Generation Materials for Oxygen Generation, Transport, and Storage in the Undersea Environment	12.300	272,654	-
DEPARTMENT OF DEFENSE	6946082	124164	Billing Agreement - Neha Kapate - Cellular backpacks for the delivery of anti-inflammatory agents to treat neuroinflammation	12.420	6,376	-
DEPARTMENT OF DEFENSE	6943866	124164	Billing Agreement - Neha Kapate: Theranostic Cellular Backpacks for Precision Imaging and Treatment of Traumatic Brain Injury Sites	12.420	0	-
DEPARTMENT OF DEFENSE	6943784	124164	Billing Agreement - Wang, Li-Wen - Theranostic Cellular Backpacks for Precision Imaging and Treatment of Traumatic Brain Injury Sites	12.420	0	-
DEPARTMENT OF DEFENSE	6944177	PO#80000049350/L. WANG/124164	Billing Agreement - Wang, Li-Wen - Theranostic Cellular Backpacks for Precision Imaging and Treatment of Traumatic Brain Injury Sites	12.420	-22,504	-
			Total for Harvard University		**1,734,279**	**-**
Duke University						
DEPARTMENT OF DEFENSE	6939801	313-0837	Quantum control based on real-time environment analysis by spectator qubits	12.431	101,911	-

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			Total for Duke University		**101,911**	**-**
Boston University						
DEPARTMENT OF DEFENSE	6941261	4500003079	ICENET: Integrated Cryogenic Egress with Nanophotonics for Exascale Technology	12.431	16,992	-
DEPARTMENT OF DEFENSE	6942484	4500003251	RECURRENT MODULE NETWORKS: A THEORY AND APPLICATIONS	12.910	-155	-
DEPARTMENT OF DEFENSE	6935193	4500002204	NEURAL CIRCUITS UNDERLYING SYMBOLIC PROCESSING IN PRIMATE CORTEX AND BASAL GANGLIA	12.300	133,551	-
DEPARTMENT OF DEFENSE	6942565	4500003329	Neuro_autonomy: Neuroscience-Inspired Perception, Navigation, and Spatial Awareness for Autonomous Robots	12.300	430,769	-
			Total for Boston University		**581,157**	**-**
Northeastern University						
DEPARTMENT OF DEFENSE	6943253	504141-78050	COVID-19: Engineered Materials And Materials Design for Engineered Materials (EMMDEM) Year 3	12.431	93,796	-
			Total for Northeastern University		**93,796**	**-**
University of Pennsylvania						
DEPARTMENT OF DEFENSE	6939085	572622	ARCHES: Autonomous Resilient Cognitive Heterogeneous Swarms	12.630	1,436,436	-
DEPARTMENT OF DEFENSE	6944135	SUB# 580416 / PO# 4531469	High-speed Off-Road Dataset Collection	12.630	176,467	-
DEPARTMENT OF DEFENSE	6937175	572339	New phase change materials for photonics: from in-silico design to novel device concepts	12.300	490,761	-
DEPARTMENT OF DEFENSE	6947348	584551	Low Cost Autonomous Navigation & Semantic Mapping in the Littorals	12.630	65,422	-
DEPARTMENT OF DEFENSE	6939157	PO 4673492, 574340	Blueprint for design and assembly of multifunctional, adaptive materials using the nanocrystal periodic table	12.300	206,704	-
			Total for University of Pennsylvania		**2,375,791**	**-**
Modern Technology Solutions, Inc.						
DEPARTMENT OF DEFENSE	6942083	AGMT DATED 9/30/19	A Systems Approach to Analyzing Cybersecurity and Safety in Complex Systems	12.RD	22,886	-
			Total for Modern Technology Solutions, Inc.		**22,886**	**-**
Georgia Institute of Technology						

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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	6941447	AWD-000084-G3	Formal Foundations of Algorithmic Matter and Emergent Computation	12.431	268,858	-
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	182,638	-
			Total for Georgia Institute of Technology		**451,495**	**-**
University of Sydney						
DEPARTMENT OF DEFENSE	6937861	G174385 RESEARCH COLLABORATION AGREEMENT	Quantum Control Engineering	12.431	-65	-
			Total for University of Sydney		**-65**	**-**
Texas A & M						
DEPARTMENT OF DEFENSE	6945534	M2101903	Extreme Mechanics of Bio-inspired Mixed-Dimensional Carbon Nanostructures with Thermally Robust Interfacial Bonds	12.431	77,428	-
			Total for Texas A & M		**77,428**	**-**
University of California - Berkeley						
DEPARTMENT OF DEFENSE	6945606	PO BB01479131/ SUBAWARD 00010373	Quantum Adiabatic Interferometry	12.431	280,273	-
DEPARTMENT OF DEFENSE	6946436	SUB#00010865/PO#BB0152 9322	Collaborative Hierarchical and Agile Responsive Materials (CHARM)	12.431	205,861	-
DEPARTMENT OF DEFENSE	6946709	10333	:MESS: Model Building, Exploratory, Social System	12.910	287,300	-
DEPARTMENT OF DEFENSE	6943414	SUB 00010360 PO #BB01389825	Verifying Computations Securely and Robustly in Post-Quantum Era	12.910	480,025	-
DEPARTMENT OF DEFENSE	6946583	00010803, PO #BB01540322	Compositional Scene Understanding with Self-Supervised Object-Centric Dorso-Ventral Neural Networks	12.300	240,223	-
DEPARTMENT OF DEFENSE	6947076	PO BB01567970	Frugal, Lifelong-Learning Control Systems with Execution Guarantees	12.300	27,850	-
DEPARTMENT OF DEFENSE	6947056	10933	Design rules of monolayer composite thin films as catalytic protective barriers	12.RD	53,531	-
DEPARTMENT OF DEFENSE	6940831	SUBAGREEMENT NO. 00010066	Rational Design of Statistical Heteropolymers as Biomimetic Enzymes and Binders	12.351	90,247	-
			Total for University of California - Berkeley		**1,665,309**	**-**
General Dynamics						
DEPARTMENT OF DEFENSE	6936534	PO# 40279278	General Dynamics Land Systems	12.431	-7,408	-

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			Total for General Dynamics		**-7,408**	**-**
University of Massachusetts - Amherst						
DEPARTMENT OF DEFENSE	6946982	PO# WA01197445/SUB00000116	Determining Mechanistic Links Between Traumatic Brain Injury, Stress Response, and Neurodegeneration	12.420	15,907	-
			Total for University of Massachusetts - Amherst		**15,907**	**-**
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	37,679	-
DEPARTMENT OF DEFENSE	6946223	3004811123	Applications Driving Architectures (ADA) Center	12.RD	547,006	-
DEPARTMENT OF DEFENSE	6939785	3005210117	Applications Driving Architectures (ADA) Center	12.RD	-5,941	-
DEPARTMENT OF DEFENSE	6940785	SUBK00009163 / PO3005498095	Rapid Autopilot Prototyping for Minimally Modeled Aircraft	12.300	101,016	-
			Total for University of Michigan		**679,759**	**-**
Research Foundation of SUNY-Buffalo						
DEPARTMENT OF DEFENSE	6941275	R1173649	Molecular design and assembly towards conducting ferroic crystals	12.431	35,754	-
			Total for Research Foundation of SUNY-Buffalo		**35,754**	**-**
California Institute of Technology						
DEPARTMENT OF DEFENSE	6939667	S396000	Dynamics in Photo-Doped Metastable States	12.431	6,793	-
			Total for California Institute of Technology		**6,793**	**-**
University of Southern California						
DEPARTMENT OF DEFENSE	6946124	SCON-00002258	Anomalous Polar Textures in Quasi-1D Chalcogenides and Heterostructures	12.431	170,926	-
DEPARTMENT OF DEFENSE	6939922	107215392	Livtronics: Living Electronics for Biologically-Enhanced Sensing, Computing, and Signal Transmission	12.300	318,972	-
DEPARTMENT OF DEFENSE	6942367	125046653	Multi-modal Open World Grounded Learning and Inference (MOWGLI)	12.910	207,751	-
DEPARTMENT OF DEFENSE	6937906	90502031	IARPA QEO, Algorithms and Designs for Quantum Annealing	12.RD	12,446	-
DEPARTMENT OF DEFENSE	6937962	NO. 94711981	SARAL: Summarization and domain-Adaptive Retrieval of Information Across Languages	12.RD	51,480	-
			Total for University of Southern California		**761,576**	**-**

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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	216,404	-
			Total for LongWave Photonics LLC		**223,270**	**-**
LaunchBay LLC						
DEPARTMENT OF DEFENSE	6947081	SUB# LB-113-1/PO# 113001	Novel High Performance Oriented Films for Ballistic Protection	12.RD	36,186	-
			Total for LaunchBay LLC		**36,186**	**-**
University of California						
DEPARTMENT OF DEFENSE	6941708	SUBAWARD NO. KK1957-05	Fundamental Biological Factors Underlying Human Performance	12.RD	1,157	-
DEPARTMENT OF DEFENSE	6933105	1015 G TA243/N00014-16-1-2007	Understanding Scenes and Events through Joint Parsing, Cognitive Reasoning and Lifelong Learning	12.300	114,546	-
			Total for University of California		**115,703**	**-**
UI LABS d/b/a MXD USA (MxD)						
DEPARTMENT OF DEFENSE	6946581	SUBAWARD NO.20-18-01-04	MDX Master Agreement	12.RD	190,749	-
			Total for UI LABS d/b/a MXD USA (MxD)		**190,749**	**-**
BAE Systems						
DEPARTMENT OF DEFENSE	6942890	1056208	CAML: MINDFUL	12.910	412,510	-
			Total for BAE Systems		**412,510**	**-**
Harvard Medical School						
DEPARTMENT OF DEFENSE	6942328	152318.5112612.0006	STOP PAIN: Safe Therapeutic Options for Pain and Inflammation	12.910	182,074	-
DEPARTMENT OF DEFENSE	6946184	152318.5112612.0014	STOP PAIN: Safe Therapeutic Options for Pain and Inflammation	12.910	105,370	-
			Total for Harvard Medical School		**287,444**	**-**
Wyss Institute						
DEPARTMENT OF DEFENSE	6944907	167982.0001	BILLING AGREEMENT - JACQUELINE VALERI: Integration of top-down and bottom-up methodologies for accurate modeling of biological networks	12.RD	11,250	-

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DEPARTMENT OF DEFENSE	6945015	167982.0001	BILLING AGREEMENT - MAX ENGLISH: Integration of top-down and bottom-up methodologies for accurate modeling of biological networks	12.RD	14,289	-
DEPARTMENT OF DEFENSE	6945640	167982.0001	BILLING AGREEMENT - MIGUEL ALCANTAR: Integration of top-down and bottom-up methodologies for accurate modeling of biological networks	12.RD	7,308	-
DEPARTMENT OF DEFENSE	6945151	167982.0001	BILLING AGREEMENT - RAPHAEL GAYET: Integration of top-down and bottom-up methodologies for accurate modeling of biological networks	12.RD	13,503	-
DEPARTMENT OF DEFENSE	6947451	168007.0002	BILLING AGREEMENT - JAMES COLLINS: Integration of top-down and bottom-up methodologies for accurate modeling of biological networks	12.910	4,725	-
DEPARTMENT OF DEFENSE	6947021	168007.0002	BILLING AGREEMENT - MAX ENGLISH: Time-Tolerant Biostasis Therapeutics	12.910	33,821	-
DEPARTMENT OF DEFENSE	6947023	168007.0002	BILLING AGREEMENT - Raphael Gayet: Time-Tolerant Biostasis Therapeutics	12.910	29,144	-
DEPARTMENT OF DEFENSE	6947020	168049	BILLING AGREEMENT - JAMES COLLINS: CRISPR-based Diagnostics for Food and Waterborne Pathogen Detection	12.431	4,882	-
			Total for Wyss Institute		**118,921**	**-**
SYSTEMS & TECHNOLOGY RESEARCH LLC						
DEPARTMENT OF DEFENSE	6941663	2019-0013	Learning with Optimal Labels (LOL)	12.RD	137,929	-
DEPARTMENT OF DEFENSE	6945394	2021-0017	VACSINE	12.RD	39,998	-
DEPARTMENT OF DEFENSE	6945052	SUBCONTRACT 2020-0071/2021-2010000004/10372.10.2001	Space-Based Machine Automated Recognition Technique (SMART) Program	12.RD	382,605	-
			Total for SYSTEMS & TECHNOLOGY RESEARCH LLC		**560,532**	**-**
Aarno Labs LLC						
DEPARTMENT OF DEFENSE	6943914	2020-MIT-AMP-01	TA2 - Multifocal Relational Analysis for Assured Micropatching (MRAM)	12.RD	497,537	-
DEPARTMENT OF DEFENSE	6939022	SUB UNDER HR001118C0059	Arya: Automatic Injection of Defensive Agents	12.RD	233,653	-
			Total for Aarno Labs LLC		**731,190**	**-**
Sri International						
DEPARTMENT OF DEFENSE	6944475	49823	Assurance For Learning Enabled Systems (ALES)	12.RD	25,518	-
DEPARTMENT OF DEFENSE	6945179	SUBCONTRACT PO55019	Formally-verified Accelerator for Ring-based Secure Iterative-evaluation of Data under Encryption (FARSIDE)	12.RD	480,310	-

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			Total for Sri International		**505,829**	**-**
The Broad Institute, Inc.						
DEPARTMENT OF DEFENSE	6945020	5000856-5500001517	Programmable Cas13 - Based Antiviral Therapeutics and Companion Diagnostics	12.910	62,332	-
DEPARTMENT OF DEFENSE	6946915	5001153-5500001656	Microbial immunotherapy using chimeric small molecules	12.910	568,743	-
DEPARTMENT OF DEFENSE	6946410	5400001152	Detection of Nucleic Acid Signatures of Genetic Engineering	12.910	23,575	-
			Total for The Broad Institute, Inc.		**654,650**	**-**
University of Tennessee						
DEPARTMENT OF DEFENSE	6944283	9500074403	Phytosensors 2.0	12.910	239,997	-
			Total for University of Tennessee		**239,997**	**-**
Federal Foundry						
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	37,668	-
			Total for Federal Foundry		**37,668**	**-**
Ecovative Design LLC						
DEPARTMENT OF DEFENSE	6939029	AGT DATED 6/30/18	Sustainable Biologically Active Modular Building Materials	12.RD	198,553	-
			Total for Ecovative Design LLC		**198,553**	**-**
Aurora Flight Sciences Corporation						
DEPARTMENT OF DEFENSE	6942276	AMA-19-0015	ALASA CubeSat Deformable Mirror Demonstration Mission (DEMI)	12.RD	13,791	-
DEPARTMENT OF DEFENSE	6943436	AMA-20-0003	Gamebreaker	12.RD	50,160	-
DEPARTMENT OF DEFENSE	6946706	AMA-21-0003	Resource-Aware Learning to Share for Distributed Lifelong Multi-Agent Learning	12.RD	62,385	-
DEPARTMENT OF DEFENSE	6943762	SUBCONTRACT NO. AMA-20-0005	Universal Computer Vision Attacks in the Wild	12.RD	9,192	-
DEPARTMENT OF DEFENSE	6944927	SUBCONTRACT NO. AMA-21-0001	End-to-End Learning of Differentiable Surrogates for Mixed-Signal PCB Simulations	12.RD	130,179	-
			Total for Aurora Flight Sciences Corporation		**265,707**	**-**
Applied Physical Sciences Corp.						
DEPARTMENT OF DEFENSE	6944371	APS-20-16	COVID-19: DARPA Sea Train	12.RD	31,027	-

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			Total for Applied Physical Sciences Corp.		**31,027**	**-**
Smart Information Flow Technologies						
DEPARTMENT OF DEFENSE	6939369	CPS-MIT-01	sTTR Phase II: MacGyver: Creative Problem Solver	12.RD	-23,652	-
			Total for Smart Information Flow Technologies		**-23,652**	**-**
IBM Thomas J. Watson Research Center						
DEPARTMENT OF DEFENSE	6942927	CW3013540\PO4700205308	Building Machine Common Sense the Human Way	12.RD	1,509,097	-
DEPARTMENT OF DEFENSE	6943356	CW3031624 / PO# 4700229565	Transfer, Augmentation and Automatic Learning with Less Labels	12.RD	-46,695	-
DEPARTMENT OF DEFENSE	6945836	CW3031624 / PO# 4700346953	Transfer, Augmentation and Automatic Learning with Less Labels	12.RD	292,226	-
			Total for IBM Thomas J. Watson Research Center		**1,754,628**	**-**
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	19,937	-
			Total for University of Virginia		**19,937**	**-**
GrammaTech, Inc						
DEPARTMENT OF DEFENSE	6943304	GT S20-04	ARTEMIS for Automated Software Generation	12.RD	37,796	-
			Total for GrammaTech, Inc		**37,796**	**-**
Raytheon BBN Technologies Corp.						
DEPARTMENT OF DEFENSE	6938139	LBN9513645	Explainable Question Answering System (EQUAS)	12.910	-3,201	-
DEPARTMENT OF DEFENSE	6942346	PO# 4202187793 BBN REF#90113	SYMBIANT	12.RD	165,228	-
			Total for Raytheon BBN Technologies Corp.		**162,027**	**-**
NVIDIA Corporation						
DEPARTMENT OF DEFENSE	6939240	PO 56090640	Symphony: Orchestrating Sparse and Dense Data for Efficient Computation	12.RD	529,239	-
			Total for NVIDIA Corporation		**529,239**	**-**
Teledyne FLIR, LLC						
DEPARTMENT OF DEFENSE	6945445	PO# 1310121015/AGRMT EFFECTIVE 05/17/21	Integrated Soldier Protective System for Unburdened Chem-Bio Protection	12.RD	-682	-

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DEPARTMENT OF DEFENSE	6945506	PO# 1310121015/AGRMT EFFECTIVE 5/17/2021	Integrated Soldier Protective System for Unburdened Chem-Bio Protection	12.RD	297,593	-
			Total for Teledyne FLIR, LLC		**296,911**	**-**
BBN Technologies Corporation						
DEPARTMENT OF DEFENSE	6944299	PO# 4202290027 BBN REF# 90144	Bullet Train	12.RD	494,643	-
			Total for BBN Technologies Corporation		**494,643**	**-**
Perspecta Labs Inc.						
DEPARTMENT OF DEFENSE	6939719	PO-0016764 PRIME HR001117S0035	WILEE: Agent-Based Threat Detection and Adaptive Collection for Cyber Hunting at Scale	12.RD	230,875	-
DEPARTMENT OF DEFENSE	6943405	PO-0020033	DCASE: Deferred Concretization Adaptive Software Enviornment	12.RD	52,773	-
DEPARTMENT OF DEFENSE	6944048	PO-0022190	CICADA: Coevolutionary Intelligent COAs for Adversarial Decisions against Allies	12.RD	268,312	-
			Total for Perspecta Labs Inc.		**551,960**	**-**
Rice University						
DEPARTMENT OF DEFENSE	6944794	R1A26H	Magnetic optical and acoustic neural access	12.RD	47,526	-
			Total for Rice University		**47,526**	**-**
Draper Laboratory Incorporated						
DEPARTMENT OF DEFENSE	6940529	SC-001-1190	System Security Integrated Through Hardware and firmware (SSITH)	12.RD	80,745	-
			Total for Draper Laboratory Incorporated		**80,745**	**-**
Scientific Systems Company, Incorporated						
DEPARTMENT OF DEFENSE	6941339	SC-1656-01	Teammate Aware Autonomy	12.RD	34,726	-
DEPARTMENT OF DEFENSE	6942142	SUBCONTRACT # SC-1674-001	DecPOMDPs for SWIFT ARROW	12.RD	4,997	-
DEPARTMENT OF DEFENSE	6943307	# SC-1699-01	Explanaton Systems	12.RD	183,555	-
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	37,212	-
DEPARTMENT OF DEFENSE	6947146	SC-1745-01	STTR Phase 1: Topology-Agnostic Resource Management and Control (TARMAC)	12.RD	33,187	-
			Total for Scientific Systems Company, Incorporated		**293,677**	**-**

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Charles River Analytics						
DEPARTMENT OF DEFENSE	6942396	SC1911601	Compositionally Organized Learning To Reason About Novel Experience (COLTRANE)	12.910	375,250	-
			Total for Charles River Analytics		**375,250**	**-**
University of California-San Diego						
DEPARTMENT OF DEFENSE	6943076	SUB 131169460 PO S9002582	Performance Evaluation Network Measurements and Analytics (PENMAN)	12.910	31,755	-
DEPARTMENT OF DEFENSE	6939646	108548654	RAIDER: Resilient Actionable Intelligence for Distributed Environment understanding and Reasoning	12.300	166,605	-
			Total for University of California-San Diego		**198,360**	**-**
Dynamic Object Language Labs, Inc.						
DEPARTMENT OF DEFENSE	6942303	SUB UNDER HR0011-20-C-0035	Robust Ideal Team Assistant (RITA)	12.RD	321,065	-
			Total for Dynamic Object Language Labs, Inc.		**321,065**	**-**
Emulate, Inc						
DEPARTMENT OF DEFENSE	6943506	SUB# HR0011-20-2-0005/PO# HR0011942573	Programmable Pancreas Project	12.910	-1	-
			Total for Emulate, Inc		**-1**	**-**
Princeton University						
DEPARTMENT OF DEFENSE	6940192	SUB0000294	Re-configurable IR frequency comb spectronscopic sending platform for chemical threat detection	12.910	133,849	-
			Total for Princeton University		**133,849**	**-**
Aptima, Inc.						
DEPARTMENT OF DEFENSE	6937326	SUBCONTRACT NUMBER 1197-2015	Agile Teams (A-Teams) - ThermoTeams: An Energy-Based Approach to the Design of Highly Adaptive Teams	12.RD	-125	-
			Total for Aptima, Inc.		**-125**	**-**
Haverford College						
DEPARTMENT OF DEFENSE	6942287	SUBK DTD. 12/15/2019	Discovering Reactions and Uncovering Mechanisms of Hybrid Organohalide Perovskite Formation	12.RD	240,792	-
			Total for Haverford College		**240,792**	**-**
University of Texas - Austin						

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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	6945808	UTA20-001165	SMAG-enabled water generation via passive atmospheric water extraction	12.RD	180,427	-
DEPARTMENT OF DEFENSE	6934067	UTA16-000556	Phonon Hydrodynamics and Spectroscopy in High Thermal Conductivity Materials	12.300	2,084	-
DEPARTMENT OF DEFENSE	6936413	UTA16-000982	Paths to Quantum Supremacy	12.300	-1,065	-
			Total for University of Texas - Austin		**181,445**	**-**
American Lightweight Materials Manufacturing Innovation Institute						
DEPARTMENT OF DEFENSE	6931266	0001	Sub-Award Agreement 0001: Cross-Cut Pillar Lead - Cost Modeling v.2	12.RD	-20,216	-
			Total for American Lightweight Materials Manufacturing Innovation Institute		**-20,216**	**-**
Oasis						
DEPARTMENT OF DEFENSE	6942398	1186-001-45	Detection Rate Improvements Through Understanding and Modeling Variability	12.RD	107,058	-
			Total for Oasis		**107,058**	**-**
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	368,912	-
			Total for Virginia Polytechnic Institute & State University		**368,912**	**-**
Cornell University						
DEPARTMENT OF DEFENSE	6937216	81825-10911	PERISCOPE: Perceptual Representations for Actions, Composition, and Verification	12.300	298,032	-
DEPARTMENT OF DEFENSE	6941679	87748-11235	Modeling and Planning with Human Impressions of Robots	12.300	141,281	-
			Total for Cornell University		**439,312**	**-**
Woods Hole Oceanographic Institution						
DEPARTMENT OF DEFENSE	6941770	A101439	COAST: A CubeSat for Measuring Sea Surface Salinity with Integrated Atmospheric Correction Capabilities	12.300	9	-
			Total for Woods Hole Oceanographic Institution		**9**	**-**
Cascade Technologies, Inc.						
DEPARTMENT OF DEFENSE	6945418	AGMT DATED 3/25/2021	Software developments for large-eddy simulations on GPU-accelerated systems	12.RD	207,641	-
			Total for Cascade Technologies, Inc.		**207,641**	**-**

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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	114,925	-
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	86,072	-
			Total for Metis Design Corporation		**200,997**	**-**
Applied Ocean Sciences, LLC						
DEPARTMENT OF DEFENSE	6942080	AGMT DTD 8/9/19	Local Stochastic Prediction for UUV/USV Environmental Awareness	12.RD	0	-
DEPARTMENT OF DEFENSE	6944020	STTR AGREEMENT DTD 09/18/2020	Local Stochastic Prediction for UUV/USV Environmental Awareness	12.RD	102,323	-
			Total for Applied Ocean Sciences, LLC		**102,323**	**-**
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	133,092	-
			Total for Pliant Energy Systems LLC		**133,092**	**-**
NERAMCO LLC						
DEPARTMENT OF DEFENSE	6945852	AGMT EFF 7/15/2021	SVETEX: Temperature modulating smart multi-functional fabric for enhanced warfighter helmet cooling	12.RD	40,000	-
			Total for NERAMCO LLC		**40,000**	**-**
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	186,413	-
DEPARTMENT OF DEFENSE	6944811	AGREEMENT DATED 7/1/2019	Quantum cascade laser array with integrated wavelength beam combining (STTR Phase I)	12.RD	25,619	-
			Total for Pendar Technologies LLC		**212,032**	**-**
HyperComp, Inc.						
DEPARTMENT OF DEFENSE	6943550	HPC2MIT-2020-01	Hexahedral Dominant Auto-Mesh Generator	12.RD	13,092	-
			Total for HyperComp, Inc.		**13,092**	**-**
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	259,521	-

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			Total for Institute for the Study of Learning & Expertise		**259,521**	**-**
Boston Engineering Corporation						
DEPARTMENT OF DEFENSE	6947663	PO #30061	Automated Simulation and Analysis of Multi-Vehicle Autonomous Missions	12.RD	8,142	-
			Total for Boston Engineering Corporation		**8,142**	**-**
Battelle Memorial Institute						
DEPARTMENT OF DEFENSE	6941249	PO US0011-0000743557-LINE 1	Low-Probability-of-Detect/Intercept Communications Employing Peaky Frequency-Shift-Key Modulation	12.RD	-887	-
			Total for Battelle Memorial Institute		**-887**	**-**
Florida State University						
DEPARTMENT OF DEFENSE	6945918	R000002829	ESRDC: Electric Ship Research and Development Consortium 2021 - 2025	12.300	3,182	-
DEPARTMENT OF DEFENSE	6935158	R01849	ESRDC - FSU and MIT Sea Grant Collaboration	12.300	336,147	-
			Total for Florida State University		**339,329**	**-**
Dartmouth College						
DEPARTMENT OF DEFENSE	6943533	R1387	Integrated Foundations of Sensing, Modeling, and Data Assimilation for Sea Ice Prediction	12.300	339,097	-
			Total for Dartmouth College		**339,097**	**-**
SeeByte						
DEPARTMENT OF DEFENSE	6942772	SC0001-19	Feasibility Study for a Multi-Architecture Autonomy Framework	12.RD	810	-
DEPARTMENT OF DEFENSE	6944771	SC0002-21	Feasibility Study for a Multi-Architecture Autonomy Framework	12.RD	89,225	-
			Total for SeeByte		**90,035**	**-**
University of Illinois						
DEPARTMENT OF DEFENSE	6943393	SUB# 099963-17888	Robust Photonic Materials with High-Order Topological Protection	12.300	289,491	-
			Total for University of Illinois		**289,491**	**-**
Vanderbilt University						
DEPARTMENT OF DEFENSE	6944976	P22011798; UNIV62036	Cognitive Attack Planning Spanning from Threats to Vulnerabilities CLIN 1	12.RD	246,950	-

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DEPARTMENT OF DEFENSE	6940344	SUBCONTRACT UNIV60073	Strategic Sensing and Resource Allocation for Infrastructure Resilience	12.RD	182,086	-
			Total for Vanderbilt University		**429,036**	**-**
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	97,880	-
			Total for BAE Systems Info & Electronic Systems Integration, Inc		**97,880**	**-**
HRL Laboratories, LLC						
DEPARTMENT OF DEFENSE	6942812	15026-503667-DS	Microwave Quantum Engineering for Semiconductor Quantum Dot Qubits	12.RD	-863	-
DEPARTMENT OF DEFENSE	6946444	21004-213647-QS	MIRO	12.RD	203,653	-
			Total for HRL Laboratories, LLC		**202,790**	**-**
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	113,179	-
			Total for ATCC Global		**113,179**	**-**
Varioscale, Inc.						
DEPARTMENT OF DEFENSE	6944203	AGMT DTD 10/01/2020	Secondary scattering for better accuracy of the underlying Machine Learning framework	12.RD	105,290	-
			Total for Varioscale, Inc.		**105,290**	**-**
ESPACE						
DEPARTMENT OF DEFENSE	6928454	AGMT. DTD. 8/14/13	IMPACT: Validation of iEPS in Space	12.RD	319,991	-
			Total for ESPACE		**319,991**	**-**
Arizona State University						
DEPARTMENT OF DEFENSE	6946570	ASUB00000951	Ferroelectric Capacitive Materials and Devices for Next Generation AI Hardware	12.RD	121,805	-
			Total for Arizona State University		**121,805**	**-**
George Mason University						
DEPARTMENT OF DEFENSE	6939518	E2045481	Host-based anti-microbial peptides as therapeutic strategies for alphavirus infection	12.351	-17,644	-
DEPARTMENT OF DEFENSE	6943499	SUBAWARD NO. E2050661	Host-based anti-microbial peptides as therapeutic strategies for alphavirus infection	12.351	-37,093	-

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			Total for George Mason University		**-54,737**	**-**
Advanced Functional Fabrics of America (AFFOA)						
DEPARTMENT OF DEFENSE	6944418	EXHIBIT 1-A	Shape-Shifting Climate-Adaptive Garments	12.800	518,366	-
			Total for Advanced Functional Fabrics of America (AFFOA)		**518,366**	**-**
North American Philips Corporation - Philips L						
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	35,428	-
			Total for North American Philips Corporation - Philips L		**35,428**	**-**
Ministry of Defense of Israel						
DEPARTMENT OF DEFENSE	6931907	PO 4440661300	Rapidly Exploring Random Trees for Pursuit-Evasion Games	12.RD	11,387	-
DEPARTMENT OF DEFENSE	6941452	PO 4440883829	Heterogeneous Multi-Agent Systems for Maritime Applications	12.RD	102,547	-
DEPARTMENT OF DEFENSE	6942162	PO 4441024394	Effects of Oxidizing Environments on Carbon-Based Materials	12.RD	250,198	-
DEPARTMENT OF DEFENSE	6942149	PO 4441027883	Planning and Control Algorithms for Autonomous Underwater Docking using Sparse Graphs and Compressed Computation	12.RD	-16	-
DEPARTMENT OF DEFENSE	6944181	PO 4441050235	HIgh-Fidelity Qubits and Readout: A proposed Collaboration between MIT and HUJI0	12.RD	26,953	-
DEPARTMENT OF DEFENSE	6947211	PO 4441192115	HIgh-Fidelity Qubits and Readout: A proposed Collaboration between MIT and HUJI	12.RD	8,659	-
DEPARTMENT OF DEFENSE	6946283	PO# 4441158191	Novel Multimaterial Fiber System for Magnetic Wave Detection	12.RD	66,628	-
DEPARTMENT OF DEFENSE	6944649	PO#: 4441098702	Planning and Control Algorithms for Autonomous Underwater Docking using Sparse Graphs and Compressed Computation	12.RD	78,006	-
DEPARTMENT OF DEFENSE	6946677	PO#: 4441173554	Autonomous Robotic Swarms: Distributed Coordination and Perception	12.RD	21,414	-
DEPARTMENT OF DEFENSE	6943699	PO4441091005	Coreset Compression Algorithms	12.RD	111,018	-
			Total for Ministry of Defense of Israel		**676,794**	**-**
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	26,235	-

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			Total for West Virginia University		**26,235**	**-**
Accenture Federal Services LLC						
DEPARTMENT OF DEFENSE	6946842	S000632, PO# 7500033470	MUTATED – MODELING and UNDERSTANDING using TEMPORAL ANALYSIS of TRANSIENT EARTH DATA	12.RD	96,184	-
			Total for Accenture Federal Services LLC		**96,184**	**-**
Pennsylvania State University						
DEPARTMENT OF DEFENSE	6943905	SA21-03	Interaction of Ionizing Radiation in Materials University Research Alliance (IIRM-URA)	12.351	562,180	-
			Total for Pennsylvania State University		**562,180**	**-**
Advanced Regenerative Manufacturing Institute						
DEPARTMENT OF DEFENSE	6941797	SUBAWARD NO. T0060	Differentiation and Monitoring of Mature Liver Organoids for Drug Testing	12.630	19,672	-
			Total for Advanced Regenerative Manufacturing Institute		**19,672**	**-**
			TOTAL for Department of Defense		**42,314,009**	**327,218**

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DEPARTMENT OF COMMERCE						
Northwestern University						
DEPARTMENT OF COMMERCE	6943285	60052977 MIT	CHiMaD Award-Sub from Northwestern Univeristy	11.609	194,731	-
			Total for Northwestern University		**194,731**	**-**
Aerodyne Research Incorporated						
DEPARTMENT OF COMMERCE	6941818	ARI 11519-1	Developing a robust and scalable calibration approach to low-cost AQ sensing (SBIR Phase II)	11.RD	3,165	-
			Total for Aerodyne Research Incorporated		**3,165**	**-**
U Delaware: National Institute for Innovation in Manufacturing Biopharmaceuticals (NIIMBL)						
DEPARTMENT OF COMMERCE	6941814	PC1.0-006 / PO# 53391	NIIMBL Projects	11.619	139,298	-
DEPARTMENT OF COMMERCE	6941812	PC2.1-036 / PO 55644	NIIMBL Projects	11.619	38,270	-
DEPARTMENT OF COMMERCE	6943411	PC2.1-037	NIIMBL Projects	11.619	83,042	-
DEPARTMENT OF COMMERCE	6946761	UDR0000063 ARP-28	Monoclonal antibody expression in fast alternative hosts: Demonstration & Reference Material	11.619	140,398	-
DEPARTMENT OF COMMERCE	6946724	UDR0000095 ARP-14	Accelerating the manufacture and scale up of virus-like particle vaccines, Non-Residual Decontamination of Clinical Spaces	11.619	489,452	-
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	131,034	-
			Total for U Delaware: National Institute for Innovation in Manufacturing Biopharmaceuticals (NIIMBL)		**1,021,493**	**-**
University of Massachusetts-Lowell						
DEPARTMENT OF COMMERCE	6945859	S51700000049091	Massachusetts Manufacturing Emergency Response Team 2.0	11.307	207,957	-
			Total for University of Massachusetts-Lowell		**207,957**	**-**
			TOTAL for Department of Commerce		**1,427,345**	**-**

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DEPARTMENT OF ENERGY						
Arzeda Corporation						
DEPARTMENT OF ENERGY	6947820		Advance Account: Novel enzymes and synthetic metabolic pathways for complete degradation and upcycling of recalcitrant polyamides	81.049	23,542	-
			Total for Arzeda Corporation		**23,542**	**-**
Brown University						
DEPARTMENT OF ENERGY	6944472	00001292	Bridging the time scale in exascale computing of chemical systems	81.049	81,805	-
			Total for Brown University		**81,805**	**-**
University of Alabama-Birmingham						
DEPARTMENT OF ENERGY	6939869	000517656-SC001	Novel, Middle and Long Wave Infrared Laser Sources For Accelerator and X-ray Generation Applications	81.049	2,244	-
			Total for University of Alabama-Birmingham		**2,244**	**-**
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	102,589	-
			Total for University of Illinois Board of Trustees		**102,589**	**-**
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	129,354	-
			Total for Electric Power Research Institute, Inc.		**129,354**	**-**
AltaRock Energy, LLC						
DEPARTMENT OF ENERGY	6942705	1051-2	Millimeter-Wave Technology Demonstration for Geothermal Direct Energy Drilling	81.135	278,668	-
			Total for AltaRock Energy, LLC		**278,668**	**-**
Worcester Polytechnic Institute						
DEPARTMENT OF ENERGY	6942797	10634-GR	A Catalytic Process to Convert Municipal Solid Waste Components to Energy	81.087	108,931	-

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			Total for Worcester Polytechnic Institute		**108,931**	**-**
Carnegie-Mellon University						
DEPARTMENT OF ENERGY	6943896	1070259-433468	High-fidelity Accelerated Design of High-performance Electrochemical Systems	81.135	129,100	-
			Total for Carnegie-Mellon University		**129,100**	**-**
Harvard University						
DEPARTMENT OF ENERGY	6944182	124180	George Varnavides Billing Agreement A	81.RD	6,976	-
DEPARTMENT OF ENERGY	6946687	124369-5120804	Machine Learning for Understanding and Driving Non-Equilibrium Dynamic Catalysis	81.049	13,194	-
DEPARTMENT OF ENERGY	6920743	133512-5028381	Transport and Imaging of Mesoscopic Phenomena in Single and Bilayer Graphene	81.049	200,683	-
DEPARTMENT OF ENERGY	6939918	AGREEMENT NO. 134126-5110101	QPress: Quantum Press for Next-Generation Quantum Information Platforms	81.049	283,292	-
			Total for Harvard University		**504,144**	**-**
Washington State University						
DEPARTMENT OF ENERGY	6938562	130616 SPC001315	UI-ASSIST: US-India collAborative for smart diStribution System wIth STorage	81.122	59,214	-
			Total for Washington State University		**59,214**	**-**
Southern California Earthquake Center						
DEPARTMENT OF ENERGY	6943431	131471829	Estimation of Physical Scattering Parameters Related to Shallow Crustal Heterogeneity in Southern California	81.049	7,014	-
			Total for Southern California Earthquake Center		**7,014**	**-**
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	8,492	-
			Total for University of Wisconsin-Madison		**8,492**	**-**
Purdue University						
DEPARTMENT OF ENERGY	6944430	14000497-047	Oxidation-Resistant, Thermomechanically-Robust Ceramic Composite Heat Exchangers	81.087	274,252	-
			Total for Purdue University		**274,252**	**-**
University of Connecticut						

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DEPARTMENT OF ENERGY	6946516	150512807, PO# 459734	AI Tools for the Characterization and Design of Achievable Hypothetical Materials	81.049	32,372	-
			Total for University of Connecticut		**32,372**	**-**
UChicago Argonne, LLC						
DEPARTMENT OF ENERGY	6945491	1F-60479	Machine learning augmented optical and X-ray spectroscopy	81.RD	36,191	-
DEPARTMENT OF ENERGY	6946703	2F-60027	Q-NEXT	81.049	124,070	-
DEPARTMENT OF ENERGY	6939746	8F-30212	Joint Center for Energy Storage Research (JCESR) Renewal Year 1	81.RD	1,099,587	-
DEPARTMENT OF ENERGY	6941696	9F-60227	Pulsed Thermal Tomography Nondestructive Examination of Additively Manufactured Reactor Materials and Components	81.RD	8,289	-
DEPARTMENT OF ENERGY	6946052	AWARD 1F-60487	Julia software GPU	81.RD	10,534	-
DEPARTMENT OF ENERGY	6947542	DE-AR0001578	Non-neutron Transmutation of Used Nuclear Fuel	81.135	4,175	-
DEPARTMENT OF ENERGY	6941867	NO. 9F-60231	Advanced characterization of lithium/electrolyte interface	81.RD	339,032	-
DEPARTMENT OF ENERGY	6937302	SUBCONTRACT NO. 7F-30180	Reaction Mechanism Generator (RMG) Software	81.RD	90,481	-
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	603,201	-
DEPARTMENT OF ENERGY	6945129	WO 2J-30101-0011A	LEU Fuel Specification Impact Assessment for the MITR Research Reactor – Phase II	81.RD	129,132	-
			Total for UChicago Argonne, LLC		**2,444,692**	**-**
Sandia National Laboratories						
DEPARTMENT OF ENERGY	6942032	2080471	Utilization of CR39 on Z for DD Yield, Yield Anisotropies and Neuron Spectroscopy	81.RD	-53	-
DEPARTMENT OF ENERGY	6946374	2193618 / PO 2304502	Utilization of CR39 on Z for DD Yield, Yield Anisotropies and Neuron Spectroscopy	81.RD	82,859	-
DEPARTMENT OF ENERGY	6938128	AGREEMENT 1340868 / PO 1874220	Frameworks, Algorithms and Scalable Technologies for Mathematics (FASTMath) SciDAC Institute	81.RD	2,773	-
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	58,119	-
DEPARTMENT OF ENERGY	6946845	AGREEMENT# 2193618/PO# 2330765	Heterogeneous Integration of Vertical GaN Power Devices via Direct Diamond Bonding	81.RD	54,519	-
DEPARTMENT OF ENERGY	6947214	CONTRACT# 2193618 / PO# 2355185	Improving the efficiency of direct Monte Carlo simulations of hypersonic flows in the presence of large density gradients	81.RD	27,686	-

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DEPARTMENT OF ENERGY	6944486	PURCHASE ORDER: 2196746	Model Form Epistemic Uncertainty Quantification for Modeling with Differential Equations	81.RD	19,239	-
DEPARTMENT OF ENERGY	6946201	PURCHASE ORDER: 2304354	Correct By Construction Hardware Designs for Sandia Mission Systems	81.RD	52,725	-
DEPARTMENT OF ENERGY	6946962	PURCHASE ORDER: 2320355	Model Form Epistemic Uncertainty Quantification for Modeling with Differential Equations	81.RD	47,096	-
			Total for Sandia National Laboratories		**344,964**	**-**
Triad National Security, LLC						
DEPARTMENT OF ENERGY	6947654	22206 - BASIC AGMT NO 485063	Actinide-Molten Salt Pair Distribution Function (PDF) Studies	81.RD	30,408	-
DEPARTMENT OF ENERGY	6943684	604325 - BASIC AGMT 485063	Development and Application of Data Processing for Neutron Pair Distribution Analysis of LANSCE Data Collected on Molten Salts	81.RD	7,238	-
			Total for Triad National Security, LLC		**37,646**	**-**
Mission Support and Test Services LLC						
DEPARTMENT OF ENERGY	6942283	231648	Real-Time Methods for Statistical Image Enhancement	81.RD	37,862	-
			Total for Mission Support and Test Services LLC		**37,862**	**-**
Brookhaven National Laboratory						
DEPARTMENT OF ENERGY	6934181	313021	Transverse Momentum Dependent Parton Structure Collaboration	81.RD	-167	-
DEPARTMENT OF ENERGY	6945919	368338	R&D on the sPHENIX MAPS Vertex Detector upgrade	81.RD	769,705	-
DEPARTMENT OF ENERGY	6944121	SUBCONTRACT NO. 380126	R&D on the sPHENIX MAPS Vertex Detector upgrade	81.RD	-251,846	-
DEPARTMENT OF ENERGY	6944786	SUBCONTRACT# 390203	Polarized 3He++ ion Source Development	81.RD	-13,836	-
DEPARTMENT OF ENERGY	6944490	SUBK# 390034	Co-design Center for Quantum Advantage (C2QA)	81.RD	1,400,337	-
			Total for Brookhaven National Laboratory		**1,904,193**	**-**
UT- Battelle LLC						
DEPARTMENT OF ENERGY	6937665	40001196573	Center for Bioenergy Innovation	81.049	326,841	-
DEPARTMENT OF ENERGY	6944677	4000158704	Center for Bioenergy Innovation	81.049	38,880	-
DEPARTMENT OF ENERGY	6937872	4000159358	Development of Next Generation Slicing Software for Additive Manufacturing	81.RD	-253,489	-
DEPARTMENT OF ENERGY	6938156	4000160305	Optimization of sensor networks for improving climate model predictions	81.RD	3,882	-
DEPARTMENT OF ENERGY	6939467	4000164925	Behavior-Based Metal Additive Manufacturing	81.RD	44,913	-

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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	6942904	4000176148	MODELING-ENHANCED INNOVATIONS TRAILBLAZING NUCLEAR ENERGY REINVIGORATION (MEITNER)	81.RD	70,143	-
DEPARTMENT OF ENERGY	6945440	4000177261	Consortium on Coal-based Carbon Materials Manufacturing - Coal-based Separation Membranes	81.RD	235,356	-
DEPARTMENT OF ENERGY	6943240	4000179517	Turbulence Modeling - Systematic comparison between measured and modelled ion heat diffusivities using VITALS	81.RD	42,722	-
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	33,664	-
DEPARTMENT OF ENERGY	6946311	4000192102/4000193721	Development of advanced compressible flow solver technology	81.049	151,737	-
DEPARTMENT OF ENERGY	6942741	4000192753/4000177261	Consortium on Coal-based Carbon Materials Manufacturing - Coal-based Separation Membranes	81.RD	27,505	-
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	34,587	-
DEPARTMENT OF ENERGY	6936739	4000193546	Coupled Monte Carlo Neutronics and Fluid Flow Simulation of Small Modular Reactors (ExaSMR)	81.RD	184,772	-
DEPARTMENT OF ENERGY	6947255	CW31155, PO# 4000198874	Adaptive Meshing Model Development	81.RD	23,497	-
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	90,040	-
			Total for UT- Battelle LLC		**1,055,050**	**-**
University of Rochester						
DEPARTMENT OF ENERGY	6940700	417532G/ UR FAO GR510907	Nuclear-particle Spectroscopy and Analysis at Omega	81.112	402,977	-
			Total for University of Rochester		**402,977**	**-**
Boston University						
DEPARTMENT OF ENERGY	6944604	4500003689	Market Clearing of Risky Assets	81.135	169,961	-
			Total for Boston University		**169,961**	**-**
General Atomics						
DEPARTMENT OF ENERGY	6943607	4500085050	Post Irradiation Examination, Characterization and Modeling of Accident Tolerant LWR Fuel Cladding	81.121	-2,382	-
DEPARTMENT OF ENERGY	6937870	PO# 4500071909	AToM: Advanced Tokamak Modeling Environment	81.049	128,899	-

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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 General Atomics		**126,517**	**-**
Northeastern University						
DEPARTMENT OF ENERGY	6939896	503036-78052	Design, Control and Application of Next-Generation Qubits	81.049	-18,345	-
			Total for Northeastern University		**-18,345**	**-**
Lehigh University						
DEPARTMENT OF ENERGY	6944133	544241-78001	Application of Banking Scoring and Rating for Coherent Risk Measures in Electricity Systems	81.135	84,198	-
			Total for Lehigh University		**84,198**	**-**
University of Pennsylvania						
DEPARTMENT OF ENERGY	6946384	578218	Complex Quantum Systems and the Quantum Universe	81.049	26,829	-
			Total for University of Pennsylvania		**26,829**	**-**
Pennsylvania State University						
DEPARTMENT OF ENERGY	6940065	5952-MIT-DOE-1090	Center for Lignocellulose Structure and Formation (CLSF III)	81.049	162,519	-
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	50,749	-
			Total for Pennsylvania State University		**213,268**	**-**
Northwestern University						
DEPARTMENT OF ENERGY	6947217	60038340 MIT	Center for Bio-Inspired Energy Science (CBES)	81.049	86,167	-
DEPARTMENT OF ENERGY	6947187	60051564 MIT	Creating and Interfacing Designer Chemical Qubits	81.049	147,184	-
DEPARTMENT OF ENERGY	6943770	60056489 MIT	Adaptive Discovery and Mixed-Variable Optimization of Next Generation Synthesizable Microelectronic Materials	81.135	129,785	-
DEPARTMENT OF ENERGY	6947231	60057508 MIT	Center for Molecular Quantum Transduction	81.049	114,156	-
			Total for Northwestern University		**477,292**	**-**
Stanford University						
DEPARTMENT OF ENERGY	6943245	62267053-151086	Controlled Synthesis of Solid-State Quantum Emitter Arrays for Quantum Computing and Simulation	81.049	192,652	-
			Total for Stanford University		**192,652**	**-**
Fermi Research Alliance, LLC						

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DEPARTMENT OF ENERGY	6940653	656002	US CMS DAQ Subsystem	81.RD	313,202	-
DEPARTMENT OF ENERGY	6944558	SUBCONTRACT 672189	Quantum Metrology for Dark Matter Axion Detection	81.RD	194,007	-
DEPARTMENT OF ENERGY	6945172	SUBCONTRACT 675352	QuantISED Theory Consortium	81.RD	84,893	-
DEPARTMENT OF ENERGY	6946525	SUBCONTRACT 682545	Accelerating offline computing with the Fast Machine Learning Lab	81.RD	32,549	-
DEPARTMENT OF ENERGY	6940661	SUBCONTRACT NO. 655714	US CMS Hadron Calorimeter (HCAL) Subsystem	81.RD	36,262	-
			Total for Fermi Research Alliance, LLC		**660,913**	**-**
Lawrence Berkeley National Laboratory						
DEPARTMENT OF ENERGY	6941260	7453199	High-Coherence Multilayer Superconducting Structures for Large Scale Qubit Integration and Photonic Transduction	81.RD	59,622	-
DEPARTMENT OF ENERGY	6946672	7601691	Solvent-Driven Zero Liquid Discharge for Production of Synthetic Gypsum	81.RD	47,883	-
DEPARTMENT OF ENERGY	6946593	7614576	Large-scale algorithms and software for modeling chemical reactivity in complex systems	81.RD	130,933	-
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	600,556	-
DEPARTMENT OF ENERGY	6947633	RESEARCH SUBCONTRACT NO. 7645408	Advanced Long-Term MonItoring Systems (ALTEMIS)	81.RD	28,303	-
DEPARTMENT OF ENERGY	6947136	SUBAWARD # 7588799	Scientific Machine Learning for Simulation and Control in Large Scale Power Systems	81.RD	31,522	-
DEPARTMENT OF ENERGY	6931128	SUBCONTRACT # 7204982	Molecular Determinants of Community Activity, Stability and Ecology (MDCASE)	81.RD	152,561	-
			Total for Lawrence Berkeley National Laboratory		**1,052,941**	**-**
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	142,688	-
			Total for The Research Foundation - Stony Brook University		**142,688**	**-**
University of Maryland						
DEPARTMENT OF ENERGY	6944739	94434-Z7124201	Solution-verification, grid-adaptation and uncertainty quantification for chaotic turbulent flow problems	81.124	127,725	-
			Total for University of Maryland		**127,725**	**-**

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University of Minnesota						
DEPARTMENT OF ENERGY	6946505	A004527506	Inorganometallic Catalyst Design Center	81.049	127,857	-
DEPARTMENT OF ENERGY	6946975	A008795401	BOTTLE – Recyclable and Biodegradable Manufacturing and Processing of Plastics and Polymers based on Renewable Branched Caprolactones	81.086	12,208	-
DEPARTMENT OF ENERGY	6946457	A009091801	Interface Engineering using Vapor Transport Deposited Perovskite Films for Solar Cells	81.087	33,030	-
			Total for University of Minnesota		**173,095**	**-**
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	66,010	-
			Total for University of Tennessee		**66,010**	**-**
Free Form Fibers LLC						
DEPARTMENT OF ENERGY	6945047	AGMT DTD. 08/24/2020	Ultra-thin 3-D Ceramic Matrix Composite Cladding	81.RD	171,847	-
DEPARTMENT OF ENERGY	6944473	AGRMT EFFECTIVE 06/01/2020	Advanced Fuel Fabrication from the Gas Phase	81.049	-2,470	-
			Total for Free Form Fibers LLC		**169,377**	**-**
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	185,893	-
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	21,262	-
DEPARTMENT OF ENERGY	6941160	STTR AGMT DTD. 7/1/19	STTR Phase I: Large Volume Plasma Generation for CO2 Processing	81.RD	4,133	-
			Total for FGC Plasma Solutions		**211,287**	**-**
Brookhaven Technology Group, Inc.						
DEPARTMENT OF ENERGY	6945075	AGMT. DTD. 03/16/2021	Low-cost 2G cables for cable-in-conduit magnets	81.049	0	-
DEPARTMENT OF ENERGY	6941954	AGMT. DTD. 09/18/2019	HTS Cable development for the central solenoid of the DEMO fusion reactor	81.049	12,909	-
			Total for Brookhaven Technology Group, Inc.		**12,908**	**-**
Novum Industria LLC						

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DEPARTMENT OF ENERGY	6945974	AGMT. DTD. 06/29/2021	Gas gap heat switches for conduction cooling of SRF cavities	81.049	115,000	-
			Total for Novum Industria LLC		**115,000**	**-**
Superconductor Technologies, Inc.						
DEPARTMENT OF ENERGY	6937244	AGMT. DTD. 07/01/2017	Wire Improvement for HTS	81.087	2	-
			Total for Superconductor Technologies, Inc.		**2**	**-**
Via Separations, LLC						
DEPARTMENT OF ENERGY	6942309	AGMT. DTD. 8/1/19	Scalable Graphene Oxide Membranes for Energy-Efficient Chemical Separations	81.135	210,763	-
			Total for Via Separations, LLC		**210,763**	**-**
Julia Computing						
DEPARTMENT OF ENERGY	6944807	AGREEMENT DATED	Machine learning based well design to enhance unconventional energy production	81.135	67,986	-
			Total for Julia Computing		**67,986**	**-**
Technology Holding, LLC						
DEPARTMENT OF ENERGY	6946679	AGREEMENT DTD 12/17/2021	Next Generation Separation Method for Rare Earths	81.RD	40,690	-
			Total for Technology Holding, LLC		**40,690**	**-**
Brayton Energy, LLC						
DEPARTMENT OF ENERGY	6940431	AGREEMENT DTD 2/6/19	Reversible Counter-Rotating Turbomachine	81.135	-538	-
			Total for Brayton Energy, LLC		**-538**	**-**
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	161,661	-
			Total for Oxeon Energy, LLC		**161,661**	**-**
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	29,152	-
			Total for Silver Fir Software, Inc		**29,152**	**-**
Bridge 12 Technologies						

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DEPARTMENT OF ENERGY	6945470	AGRMT. DTD. 3/22/2021	High Efficiency Megawatt Class Gyrotrons for Instability Control of Burning Plasma Machines	81.135	91,892	-
			Total for Bridge 12 Technologies		**91,892**	**-**
CREARE, Incorporated						
DEPARTMENT OF ENERGY	6943898	AGRMT. DTD. 8/17/2020	Helium Rotor Machinery	81.049	42,677	-
			Total for CREARE, Incorporated		**42,677**	**-**
Irradiant Technologies Inc						
DEPARTMENT OF ENERGY	6945691	AWD DTD 6/28/2021	Linescan Temporal Focusing and Implosion Fabrication Lithography for Chemically Amplified High Throughput nano/micro-fabrication	81.049	29,574	-
			Total for Irradiant Technologies Inc		**29,574**	**-**
Georgia Institute of Technology						
DEPARTMENT OF ENERGY	6942401	AWD-000286-G2	Aerial Intelligence for Retrofit Building Energy Modeling (AirBEM)	81.086	131,246	-
DEPARTMENT OF ENERGY	6942141	AWD-000372-G2	CONSORTIUM FOR ENABLING TECHNOLOGIES & INNOVATION (ETI)	81.113	722,905	-
DEPARTMENT OF ENERGY	6945218	AWD-102458-G1	Real-time Measurements of Complex Transition Metal Oxide Nanostructure Growth	81.049	58,064	-
			Total for Georgia Institute of Technology		**912,216**	**-**
Lawrence Livermore National Security, LLC						
DEPARTMENT OF ENERGY	6938345	B627203	Microscale biophysical analyses of algal bacterial interactions	81.RD	67,970	-
DEPARTMENT OF ENERGY	6940158	B631377	Chemical Threat Responsive Carbon Nanotube Membranes	81.RD	53,905	-
DEPARTMENT OF ENERGY	6944481	B643497	Divertor Plasma Simulations	81.RD	35,710	-
DEPARTMENT OF ENERGY	6944957	B645143	Design and implementation of the MRSt neutron spectrometer in support of NIF	81.RD	102,231	-
DEPARTMENT OF ENERGY	6945389	B645222	Advanced Experimental Capability to Study High-Velocity Collisions of Metallic Microparticles	81.RD	113,929	-
DEPARTMENT OF ENERGY	6947044	B650912	Actualizing an Energetic Bistable Logic-based Functional Prototype	81.RD	23,627	-
DEPARTMENT OF ENERGY	6943589	SUBCONTRACT B640112	High Density Implosions on Omega and the NIF	81.RD	468,566	-
DEPARTMENT OF ENERGY	6943588	SUBCONTRACT B640717	Investigation of laser-driven particle acceleration for the development of tunable ion source for applications in high energy density science	81.RD	22,415	-

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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 Lawrence Livermore National Security, LLC		**888,354**	**-**
University of Missouri-Columbia						
DEPARTMENT OF ENERGY	6943064	C00069059-2	High quality GaN FETs through transmutation doping and low temperature processing	81.135	228,172	-
			Total for University of Missouri-Columbia		**228,172**	**-**
Wyss Institute						
DEPARTMENT OF ENERGY	6946959	CHURCH.DOE.150644.0019	Billing Agreement: Umesh Padia- Microbial Ecology, Proteogenomics and Computational Optima	81.049	39,207	-
DEPARTMENT OF ENERGY	6945703	CHURCH.DOE.153149.0017	Billing Agreement: Umes Padia - Microbial Ecology, Proteogenomics and Computational Optima	81.049	36,689	-
			Total for Wyss Institute		**75,896**	**-**
Battelle-Pacific Northwest Laboratories						
DEPARTMENT OF ENERGY	6944507	CONTRACT #: 543753	Making an inorganic analogue of a cell for direct air capture of CO2	81.RD	176,163	-
DEPARTMENT OF ENERGY	6944616	CONTRACT #: 547784	Uncertainty Characterization and Scenario Discovery in GCIMS	81.RD	59,732	-
DEPARTMENT OF ENERGY	6944935	CONTRACT #: 556706	Isotope Verification for Arms Control	81.RD	169,696	-
DEPARTMENT OF ENERGY	6939625	CONTRACT# 428422	Center for Molecular Electrocatalysis	81.RD	174,694	-
DEPARTMENT OF ENERGY	6942932	CONTRACT# 499232	Phonon-mediated Quasiparticles in Superconducting Circuits	81.RD	16,880	-
DEPARTMENT OF ENERGY	6943054	CONTRACT# 514484	Combined Experimental and Computational Efforts to Establish Ion Mobility, Solubility and Stability of Functional Liquids for Electrochemical Energy Storage	81.RD	55,191	-
DEPARTMENT OF ENERGY	6946906	CONTRACT# 605957	Superconducting Quasiparticle-Sensitive Sensors and Qubits	81.049	63,511	-
			Total for Battelle-Pacific Northwest Laboratories		**715,866**	**-**
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	39,957	-
			Total for Battelle Memorial Institute		**39,957**	**-**
Brookhaven Science Associates, LLC						
DEPARTMENT OF ENERGY	6943488	CONTRACT NO. 383445	Quantum UV Sensors Based on High-Tc Superconducting Nanowire Single-Photon Detector	81.RD	-22,939	-

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			Total for Brookhaven Science Associates, LLC		**-22,939**	**-**
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	84,276	-
			Total for Sequoia Scientific, Inc.		**84,276**	**-**
Type One Energy Group						
DEPARTMENT OF ENERGY	6943686	DE-AR0001287	Proposal for a Demonstration HTS Stellarator Coil with an Additive-Manufactured Support Case	81.135	82,534	-
			Total for Type One Energy Group		**82,534**	**-**
Tanner Research, Incorporated						
DEPARTMENT OF ENERGY	6944940	DE-SC0019905	Quench Detection Method using MEMS Sensor Arrays for Superconducting Magnets	81.049	184,642	-
			Total for Tanner Research, Incorporated		**184,642**	**-**
Colorado State University						
DEPARTMENT OF ENERGY	6946705	G-64020-01	Redesigning Polymers to Leverage A Circular Economy (REPLACE)	81.049	31,798	-
			Total for Colorado State University		**31,798**	**-**
SURA / Jefferson Lab						
DEPARTMENT OF ENERGY	6945987	JSA-21-C0815	MOLLER Upstream Toroid System Design Statement of Work	81.RD	157,860	-
			Total for SURA / Jefferson Lab		**157,860**	**-**
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	137,970	-
			Total for University of California-Santa Barbara		**137,970**	**-**
Texas A & M						
DEPARTMENT OF ENERGY	6944303	M2100082	Secure Monitoring and Control of Solar Power Distribution System Through Dynamic Watermarking	81.087	202,497	-
			Total for Texas A & M		**202,497**	**-**

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Western Research Institute						
DEPARTMENT OF ENERGY	6938492	MIT17-10G663	Consortium for Production of Affordable Carbon Fibers (CPACF) in the U.S.	81.086	10,619	-
			Total for Western Research Institute		**10,619**	**-**
National Renewable Energy Laboratory						
DEPARTMENT OF ENERGY	6941550	NO. UGA-0-41029-21	NREL: Lignin-First Biorefinery Development	81.049	47,892	-
DEPARTMENT OF ENERGY	6942931	UGA-0-41029-22	NREL: Plastics Upcycling Consortium	81.049	9,863	-
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	88,980	-
DEPARTMENT OF ENERGY	6946422	UGA-0-41029-25	Investigation of Plastic Deconstruction Methods to Aid in Upcycling and Redesign	81.RD	355,216	-
DEPARTMENT OF ENERGY	6946023	UGA-0-41029-26	Physics-informed machine learning approach for emulation of hydropower plants	81.049	14,999	-
DEPARTMENT OF ENERGY	6946729	UGA-0-41029-27	Metal-to-ceramic joining methods to support development of advanced ceramic-based CSP components	81.RD	63,925	-
DEPARTMENT OF ENERGY	6947296	UGA-0-41029-29	Development of a Thermal System Modeling Framework Based on Machine Learning Approach	81.RD	4,799	-
			Total for National Renewable Energy Laboratory		**585,674**	**-**
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	145,098	-
			Total for CF Technologies, Inc.		**145,098**	**-**
Los Alamos National Security, L.L.C.						
DEPARTMENT OF ENERGY	6946899	PO #EP34856; SUB NO. CW9131	COVID-19: Advancements in Monte Carlo methods for transient modelling and performance on GPUs	81.RD	24,775	-
DEPARTMENT OF ENERGY	6940672	SUBCONTRACT NO. 531711	Analysis and Optimization of Parallel Unstructured-Mesh Computations	81.RD	103,296	-
DEPARTMENT OF ENERGY	6945220	SUBCONTRACT NO. 628886	Emergency Control and Monitoring of Power System Networks	81.RD	85,599	-
			Total for Los Alamos National Security, L.L.C.		**213,670**	**-**
Plasma Processes, LLC						

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DEPARTMENT OF ENERGY	6940880	PO 1015-002-JK-120618	SBIR Phase II: Advanced Metallic-Silicon Carbide Composite Claddings for Improved Damage Tolerance	81.049	14,753	-
DEPARTMENT OF ENERGY	6947815	PO 1017-002-JK-050222	Additive Manufacture of GRCop Waveguides for Fusion	81.049	18,045	-
DEPARTMENT OF ENERGY	6945493	SBIR AGMT DTD 5/26/2021	Additive Manufacturing of ODS Steel Claddings with an Integral Diffusion Barrier	81.RD	57,545	-
			Total for Plasma Processes, LLC		**90,343**	**-**
Fluor Marine Propulsion						
DEPARTMENT OF ENERGY	6947593	PO 135265 / LINE ITEM 1	Effect of surface properties on the two-phase heat transfer and critical heat flux	81.RD	345,248	-
DEPARTMENT OF ENERGY	6945883	PO 140518	MASTER AGREEMENT	81.RD	54,143	-
DEPARTMENT OF ENERGY	6944956	PO#: 140712	Development of Autonomous Thermal Hydraulic Operations	81.RD	73,258	-
			Total for Fluor Marine Propulsion		**472,649**	**-**
University of Michigan						
DEPARTMENT OF ENERGY	6943018	PO 3005787040 / SUBK00009794	Consortium for Monitoring, Technology, and Verification	81.113	401,038	-
			Total for University of Michigan		**401,038**	**-**
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	16,811	-
			Total for University of California - Berkeley		**16,811**	**-**
Honeywell Federal Manufacturing & Technologies, Llc						
DEPARTMENT OF ENERGY	6946477	PO N000416868	Multiaxial Vibration Test of Electronic Systems	81.RD	72,088	-
			Total for Honeywell Federal Manufacturing & Technologies, Llc		**72,088**	**-**
Research Foundation of SUNY-Buffalo						
DEPARTMENT OF ENERGY	6940393	PO R1154214	REDUCING OVERNIGHT CAPITAL COST IN ADVANCED REACTORS USING EQUIPMENT-BASED SEISMIC PROTECTIVE TECHNOLOGIES	81.135	6,464	-
DEPARTMENT OF ENERGY	6940392	PO R1154215	REDUCING OVERNIGHT CAPITAL COST IN ADVANCED REACTORS USING EQUIPMENT-BASED SEISMIC PROTECTIVE TECHNOLOGIES	81.135	16,092	-
			Total for Research Foundation of SUNY-Buffalo		**22,555**	**-**

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Lincoln Laboratory						
DEPARTMENT OF ENERGY	6942991	PO# 7000477965	Advanced Quantum Testbed (AQT)	81.RD	188,709	-
			Total for Lincoln Laboratory		**188,709**	**-**
Honeywell						
DEPARTMENT OF ENERGY	6945268	PO# N000394905	Porosity-controlled selective laser melting	81.RD	121,180	-
DEPARTMENT OF ENERGY	6947033	PO# N000428740	Next Generation Capabilities for AM 705179	81.RD	86,839	-
			Total for Honeywell		**208,019**	**-**
Michigan State University						
DEPARTMENT OF ENERGY	6944410	RC108389 - MIT	CRIS at FRIB-MIT	81.049	171,423	-
			Total for Michigan State University		**171,423**	**-**
Battelle Energy Alliance, LLC						
DEPARTMENT OF ENERGY	6940384	RELEASE 20 /BMC 0112583	Advanced Data Acquisition and Simulation with Live Data Supporting VTR Experiments	81.RD	27,750	-
DEPARTMENT OF ENERGY	6944986	RELEASE 21/BMC 0112583	Moving beyond DPA: A new approach for rapidly quantifying radiation damage	81.RD	81,474	-
DEPARTMENT OF ENERGY	6944087	RELEASE 22 /BMC 0112583	Switchable Solvent Water Extraction and Water Softening ? Thermodynamic Modeling	81.RD	35,807	-
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	74,115	-
DEPARTMENT OF ENERGY	6944837	RELEASE 25/BMC 112583	An Innovative Approach for Accelerated Irradiation Studies of Materials	81.RD	109,606	-
DEPARTMENT OF ENERGY	6944836	RELEASE 26/BMC 112583	Passive Strain Measurements for Experiments in Radiation Environments	81.RD	9,070	-
DEPARTMENT OF ENERGY	6945053	RELEASE 27 /BMC 0112583	NASA Fuel and Material Irradiation	81.RD	488,415	-
DEPARTMENT OF ENERGY	6945090	RELEASE 28/BMC 112583	Assessment of neutron irradiation tolerance of semi-coherent nano-lamellar structures	81.RD	-17,548	-
DEPARTMENT OF ENERGY	6945279	RELEASE 29/BMC 112583	Informative Design of High-Temperature Metal Hydride Moderators in Microreactors	81.RD	17,335	-
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	69,795	-
			Total for Battelle Energy Alliance, LLC		**895,819**	**-**
Raytheon Technologies Corporation						

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DEPARTMENT OF ENERGY	6940860	RESEARCH AGREEMENT # 2606669	Low-cost Redox-Flow-Battery System with S- and Mn-anion active materials	81.135	64,303	-
			Total for Raytheon Technologies Corporation		**64,303**	**-**
University of Massachusetts-Lowell						
DEPARTMENT OF ENERGY	6938248	S51900000036928	Design of a Commercial-Scale, Fluoride-Salt-Cooled, High-Temperature Reactor With Novel Refueling and Decay Heat Removal Capabilities	81.121	30,162	-
			Total for University of Massachusetts-Lowell		**30,162**	**-**
University of Arkansas						
DEPARTMENT OF ENERGY	6942737	SA1712153	Cybersecurity Center for Secure Evolvable Energy Delivery Systems (SEEDS)	81.112	83,155	-
			Total for University of Arkansas		**83,155**	**-**
The REMADE Institute						
DEPARTMENT OF ENERGY	6942536	SA-19-31	Dummy Parent for Identifying Strategies to Maximize Benefit of Fiber Recovery Through Systems Quantification	81.087	75,462	-
			Total for The REMADE Institute		**75,462**	**-**
Electroformed Nickel, Inc.						
DEPARTMENT OF ENERGY	6939275	STTR AGREEMENT 05/21/18	STTR Phase II: Demonstration of the technological capability for production of neutron-focusing nickel mirrors	81.049	28,377	-
			Total for Electroformed Nickel, Inc.		**28,377**	**-**
Adelphi Technology Inc						
DEPARTMENT OF ENERGY	6946147	STTR UNDER DE-SC0020555	Multiplexing Focusing Analyzer for Efficient Stress-Strain Measurements	81.049	151,706	-
			Total for Adelphi Technology Inc		**151,706**	**-**
Princeton University						
DEPARTMENT OF ENERGY	6940086	SUB0000289	Bioinspired Light-Escalated Chemistry (BioLEC)	81.049	209,394	-
DEPARTMENT OF ENERGY	6944958	SUB0000466	Membrane Dehumidification as Facade-integrated Building Screens for Latent Cooling	81.086	40,194	-
			Total for Princeton University		**249,588**	**-**
Columbia University						

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DEPARTMENT OF ENERGY	6944420	SUBAWARD 5(GG008711-10)	PINE: Photonic Integrated Networked Energy Efficient Datacenter	81.135	171,674	-
			Total for Columbia University		**171,674**	**-**
Clean Energy States Alliance						
DEPARTMENT OF ENERGY	6945984	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	147,892	-
			Total for Clean Energy States Alliance		**147,892**	**-**
University of Colorado Boulder						
DEPARTMENT OF ENERGY	6937968	SUBAWARD#: 1555955 PO# 1000976258	Design and Engineering of Synthetic Control Architectures	81.049	411,673	-
			Total for University of Colorado Boulder		**411,673**	**-**
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	21,298	-
			Total for Phoenix, LLC		**21,298**	**-**
Radiation Monitoring Devices						
DEPARTMENT OF ENERGY	6941874	SUBCONTRACT C20-02	In situ Characterization of Interfaces Between Materials and Molten Salts for Molten Salt Reactors	81.049	137,977	-
			Total for Radiation Monitoring Devices		**137,977**	**-**
Form Energy, Inc.						
DEPARTMENT OF ENERGY	6941805	SUBCONTRACT RESEARCH AGREEMENT DATED 10-24-2019	Aqueous Sulfur Systems for Long-Duration Grid Storage	81.135	108,880	-
			Total for Form Energy, Inc.		**108,880**	**-**
University of Nevada-Reno						
DEPARTMENT OF ENERGY	6941933	UNR-20-21	Applications of Machine Learning Techniques to Geothermal Play Fairway Analysis in the Great Basin Region Nevada	81.087	51,395	-
			Total for University of Nevada-Reno		**51,395**	**-**

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University of Texas - Austin						
DEPARTMENT OF ENERGY	6938299	UTA18-000276	Partnership for Multiscale Gyrokinetic (MGK) Turbulence	81.049	21,378	-
DEPARTMENT OF ENERGY	6940002	UTA18-001328	AEOLUS: Advances in Experimental Design, Optimal Control, and Learning for Uncertain Complex Systems	81.049	266,479	-
			Total for University of Texas - Austin		**287,857**	**-**
University of Washington						
DEPARTMENT OF ENERGY	6944510	UWSC12397 PO BPO52447	Ultrafast Control of Emerging Electronic Phenomena in 2D Quantum Materials	81.049	302,229	-
			Total for University of Washington		**302,229**	**-**
			TOTAL for Department of Energy		**22,184,524**	**-**

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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	100,088	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6942040	111922-5115321	Validating City Scanner: a low-cost mobile air quality platform for cities	93.113	327	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6939891	113098-5109806	Epithelial layer jamming in breast cancer cell migration (Supplement #2)	93.396	-51,876	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6943688	113113-5096677	Engineered Nanomaterial Synthesis, Characterization and Method Development Center for Nano-safety Research	93.113	-4,069	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6943539	117127-5108050	Multi-Pathway DNA Repair Capacity Measurements in Lung Cancer Patients and Healthy Controls	93.113	26,003	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6944931	117327-5116372	Using genetics and multi-scale imaging to understand the mechanisms underlying mycobacteriophage host choice	93.855	92,304	-
			Total for Harvard School of Public Health		**162,776**	**-**
Virginia Commonwealth University						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6947631	FP00012824_SA005	Phlow - Synthesis of Critical Pharmaceuticals	93.RD	432,549	-
			Total for Virginia Commonwealth University		**432,549**	**-**
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	238,259	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6947005	00002019	Fluorinated macrocyclic peptides as BBB penetrating agent for improved GBM treatment	93.395	225,334	-
			Total for Brown University		**463,593**	**-**
Fred Hutchinson Cancer Research Center						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6941680	0000997305	The Syngenic DNA and uPOET Platform: Overcoming Innate Barriers to Genetic Engineering in Bacteria	93.121	63	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6944277	0001041798	The Syngenic DNA and uPOET Platform: Overcoming Innate Barriers to Genetic Engineering in Bacteria	93.121	25,470	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6947164	0001102685	The Syngenic DNA and uPOET Platform: Overcoming Innate Barriers to Genetic Engineering in Bacteria	93.121	174,128	-

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			Total for Fred Hutchinson Cancer Research Center		**199,660**	**-**
University of Alabama-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	129,507	-
			Total for University of Alabama-Birmingham		**129,507**	**-**
Beth Israel Deaconess Medical Center						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6945903	01061188	The development and human translation of Temporal Interference brain stimulation	93.242	292,850	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6944570	01062405	Predicting Fracture Risk in Patients Treated with Radiotherapy for Spinal Metastatic Disease	93.846	44,618	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6945603	01062677	Research Resource for Complex Physiologic Data	93.286	360,587	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6942799	1061926	Research Resource for Complex Physiologic Data	93.859	-251	-
			Total for Beth Israel Deaconess Medical Center		**697,803**	**-**
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	70,407	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6945723	1430 G YA886	Anatomical characterization of neuronal cell types of the mouse brain	93.242	92,694	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6941247	1554 G WC474	Molecular Analysis of Host Immune Response in Leprosy	93.855	226,866	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6942046	1554 G XA369	IL-26 in host defense against infection by intracellular bacteria in skin	93.846	164,915	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6944232	2000 G XH151	AN OPEN-SOURCE, WIRELESS, MULTICHANNEL MINIATURIZED MICROSCOPE FOR IMAGING ACTIVITY NEURONAL ACTIVITY	93.853	60,640	-
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	110,634	-
			Total for University of California, Los Angeles		**726,156**	**-**
Icahn School of Medicine at Mount Sinai						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6944824	0255-E501-4609	Physical Activity Genomics, Epigenomics/transcriptomics Site	93.310	22,690	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6947150	0255-E503-4609	Physical Activity Genomics, Epigenomics/transcriptomics Site	93.310	1,291	-

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			Total for Icahn School of Medicine at Mount Sinai		**23,980**	**-**
Columbia University						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6934117	1(GG012140)/PO G10545	Analysis of Cancer Cell Metabolism in Diverse Environmental Conditions	93.396	51,238	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6944661	1(GG012741-04)	The role of stem cells and the microenvironment in gastrointestinal cancers	93.393	39,133	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6945517	2(GG012789-02)	The Role of the Microenvironment in Barrett's Esophagus	93.397	48,371	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6940240	2(GG014507)	SCAPE microscopy for high-speed 3D imaging of cellular function in behaving animals: Continued innovation, optimization, and dissemination	93.853	7,166	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6946798	6(GG017143-07) PO# SAPO G16033	State-dependent Decision-making in Brainwide Neural Circuits	93.853	12,030	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6940407	PO G13407 1(GG014640)	Distal enhancers controlling motor neuron gene expression program	93.853	222,413	-
			Total for Columbia University		**380,351**	**-**
Joslin Diabetes Center						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6945602	100190-2150186	Fibroblast Growth Factor and Energy Metabolism	93.847	21,267	-
			Total for Joslin Diabetes Center		**21,267**	**-**
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	77,288	-
			Total for Oregon Health and Science University		**77,288**	**-**
Tufts University						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6943575	102188-00001-PETER_SZOLOVITS	Tufts Clinical and Translational Science Institute (CTSI)	93.350	27,750	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6942047	103076-00001/NIH113/PO EP0192109	Voltage imaging of astrocyte-neuron interactions	93.853	129,611	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6945813	5020410 SERV	Pathogenesis of Cardiopulmonary Fibrosis Associated with Heart Failure in the Elderly	93.866	75,380	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6941426	HH1241	Understanding and designing cyclic peptides	93.859	52,389	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6943555	HH4977	Competing Segment: Models to Predict Protein Biomaterial Performance	93.286	97,354	-

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			Total for Tufts University		**382,484**	**-**
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	14,631	-
			Total for Tufts Clinical and Translational Science Institute		**14,631**	**-**
Dana Farber Cancer Institute						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6945362	1040827	Billing Agreement - Aereas Aung: Elucidating and overcoming antigen breakdown during immune responses	93.855	57,456	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6944722	1282101	Targeting immunogenicity to the MPER hinge and C-helix for BNAb elicitation	93.855	46,615	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6943910	1282601	Targeting immunogenicity to the MPER hinge and C-helix for BNAb elicitation-Project 2	93.855	-18,937	-
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	104,087	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6945579	1318001	Development of microRNA-based cell-targeted polymeric nanoparticles for multiple myeloma therapy	93.395	130,418	-
			Total for Dana Farber Cancer Institute		**319,639**	**-**
Harvard University						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6945134	109786.5110773	Immune Mechanisms of Protection against Mycobacterium Tuberculosis Center (IMPAc-TB)	93.RD	291,489	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6942743	109786.5110775	Immune Mechanisms of Protection against Mycobacterium Tuberculosis Center (IMPAc-TB)	93.RD	428,516	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6938207	113098-5106858	Does the cell jamming principle extend from the 2D epithelial sheet to the 3D tumor spheroid?	93.396	-11,904	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6939819	132692-5106604	Developmental origins of mental illness: evolution and reversibility	93.242	333,684	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6945152	149409	Billing Agreement - Tarun Kamath - Investigating the interaction between the anterolateral motor cortex and basal ganglia	93.853	2,500	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6939227	164647-5107687	Novel Age-Dependent DNA Modifications	93.866	289,540	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6944582	164677-5115233	High throughput assaying of circuit activity and connectivity in brain organoids	93.242	259,955	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6945827	168028.0105	Billing Agreement - Olivia Young - Biomaterials to Create T Cell Immunity	93.353	3,386	-

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DEPARTMENT OF HEALTH & HUMAN SERVICES	6946793	168051-5119965	Platform technologies for scalable highly multiplexed proteomic phenotyping of the brain	93.242	28,039	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6946752	168051-5119967	Platform technologies for scalable highly multiplexed proteomic phenotyping of the brain	93.242	385,833	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6946323	AGMT EFF 9/1/21	Swartz Program in Theoretical Neuroscience	93.RD	39,162	-
			Total for Harvard University		**2,050,201**	**-**
Brigham & Women's Hospital						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6945088	114237	Mucins and immune cell interactions in ovarian cancer pathogenesis & progression	93.396	164,718	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6940370	120368	Neuroimaging Analysis Center	93.286	196,391	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6941991	121535	Pro-inflammatory activation of human macrophages regulated by lncRNAs	93.837	83,874	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6941853	121596	Fluorinated macrocyclic peptides as BBB penetrating agent for improved GBM treatment	93.395	35,468	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6946651	121687	Billing Agreement - Angela Lai - Organ Design and Engineering Training Program (ODET Program)	93.286	53,687	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6944620	123929	Epigenetics and 3D structure of miR-10b/HoxD locus in the brain and malignant glioma	93.853	93,362	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6947099	126094	Predicting the impact of genetic variants, genes and pathways on human Disease	93.172	12,712	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6947050	126466	Monitoring pro-resolving leukocyte responses in peripheral blood predicts clinical severity during sepsis	93.859	50,235	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6937980	SUBAWARD NO. 117954	Integrative multi-omic discovery of proximal mechanisms driving age-dependent neurodegeneration	93.866	590,446	-
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	5,309	-
			Total for Brigham & Women's Hospital		**1,286,201**	**-**
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	53,402	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6937936	152447.5074647.0407	Neuropsychiatric Genome-Scale and RDOC Individualized Domains (N-GRID)	93.242	-10,054	-

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DEPARTMENT OF HEALTH & HUMAN SERVICES	6941988	152561.5112601.0002	Elucidation of the role of Creb5 in synovial joint formation	93.846	16,795	-
			Total for Harvard Medical School		**68,451**	**-**
Wyss Institute						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6947354	150335.0007 (CHEN.NIH.R01)	Billing Agreement - Xining Gao - Defining Genetic Architecture and Pathways of DMC	93.837	40,634	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6944323	168019.0402	Billing Agreement - James J. Collins - Lung-On-a-Chip Disease Models for Efficacy Testing	93.838	1,232	-
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	5,004	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6947176	168019.0502	BILLING AGREEMENT - XIAOYU (JACK) CHEN:Lung-on-a-Chip Disease Models for Efficacy Testing	93.838	30,801	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6947452	168019-0502	BILLING AGREEMENT - RAPHAEL GAYET: Lung-on-a-Chip Disease Models for Efficacy Testing	93.838	7,265	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6946908	168028.0105	Billing Agreement - Olivia Young - Biomaterials to Create T Cell Immunity	93.353	40,239	-
			Total for Wyss Institute		**125,173**	**-**
Rutgers University						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6944113	1630/PO #25101398	Biomarkers and Mechanisms of Paucibacillary and Latent Tuberculosis	93.855	23,630	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6947470	2301	Synthesizability-constrained expansion and multi-objective evolution of antitubercular compounds	93.855	6,061	-
			Total for Rutgers University		**29,691**	**-**
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	40,080	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6939279	OSP2018099/ PO NO.WA01134898	Structural annotation of the human genome	93.172	70,370	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6946788	PO WA01187538, OSP-SUB103-MIT	ReproNim: A Center for Reproducible Neuroimaging Computation	93.286	106,227	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6942855	WA00803347/ OSP2016196	Center for Reproducible Neuroimaging Computation (CRNC) - Project 2	93.286	2,638	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6942854	WA01187538; OSP2016201	Center for Reproducible Neuroimaging Computation (CRNC)	93.286	516	-
			Total for University of Massachusetts		**219,832**	**-**

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Rush University Medical Center						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6943886	18052302-SUB02	Culturally relevant contributors to cognitive and MRI changes in older Latinos	93.866	-3,591	-
			Total for Rush University Medical Center		**-3,591**	**-**
New York University						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6944145	18-A0-00-1001558-01; PO# M190200494	CRCNS: An Integrative Approach for the Study of Hippocampal-Neocortical Memory Coding during Sleep	93.242	4,372	-
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	247,375	-
			Total for New York University		**251,747**	**-**
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	236,421	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6944351	203561	Targeted delivery of cytopathicity enhancing agents, and co-ordination with shock and kill, to reduce levels of persistent HIV and enable remission	93.855	-31,213	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6946815	203763, BOUROUIBA	Halting TB transmission: Bacterial determinants of Mtb aerobiology	93.855	544,700	-
			Total for Cornell University		**749,908**	**-**
Research Foundation of SUNY-Albany						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6938948	19-4-80311	Translational regulation in exposure biology: Xenobiotic-induced reprograming of tRNA modifications and selection translation of codon-biased response genes in rat and human models	93.113	12,108	-
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	262,712	-
			Total for Research Foundation of SUNY-Albany		**274,820**	**-**
Health Resources in Action						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6937415	1R25OD023756	LEAH-Knox Scholars Program in Biomedical Research	93.859	18,018	-
			Total for Health Resources in Action		**18,018**	**-**
Mbarara University of Science and Technology						

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DEPARTMENT OF HEALTH & HUMAN SERVICES	6947312	1U54TW012043-01	From medical images to healthcare practice: data science for improved clinical outcomes and impact across sub-Saharan Africa	93.310	2,202	-
			Total for Mbarara University of Science and Technology		**2,202**	**-**
La Jolla Institute for Allergy and Immunology						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6945203	20021-06-133-382	Maximizing germinal centers and somatic hypermutation to HIV Env immunogens	93.855	125,882	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6945467	27909-03-133-408 (PREVIOUSLY 27909-02-133 -408)	Consortium for Immunotherapeutics against Emerging Viral Threats	93.855	119,777	-
			Total for La Jolla Institute for Allergy and Immunology		**245,660**	**-**
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	54,804	-
			Total for University of California		**54,804**	**-**
Allen Institute for Brain Science						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6937896	2017-0572 PO# AIP044827	A comprehensive whole-brain atlas of cell types in the mouse	93.242	98,818	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6946484	2021-0590	Cell Type and Circuit Mechanisms of Non-Invasive Brain Stimulation by Sensory Entrainment	93.279	175,316	-
			Total for Allen Institute for Brain Science		**274,135**	**-**
University of California - Irvine						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6941677	2019-3795	The Neuroimaging Data Model: FAIR descriptors of Brain Initiative Imaging Experiments	93.242	19,486	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6941300	SUBAWARD NO. 2014-3129	Neuron and Glial cellular signatures from normal and diseased iPS cells	93.853	2,169	-
			Total for University of California - Irvine		**21,656**	**-**
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	61,688	-
			Total for North Carolina State University		**61,688**	**-**
University of Texas Medical Branch						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6945351	21-85074-02	Coordinating Research on Emerging Arboviral Threats Encompassing the Neotropics (CREATE-NEO)	93.855	54,465	-

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			Total for University of Texas Medical Branch		**54,465**	**-**
Massachusetts General Hospital						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6932581	226025	MRI-GENetics Interface Exploration (MRI-GENIE) Study	93.286	-48	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6944149	229297	Billing Agreement - Paul Dannenberg - Massive wavelength-division multiplexing and imaging with laser particles	93.310	-15,694	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6935377	229354	Improving Human fMRI through Modeling and Imaging Microvascular Dynamics	93.242	1,692	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6935800	229825	Role of miR-222 in pathological hypertrophy and heart failure	93.837	-36,513	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6938704	230321	Clinical Research for the Improved Prevention, Diagnosis and Treatment of Vocal Hyperfunction	93.173	-36,799	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6946297	230662	Billing Agreement - Mingjian He - Multimodal Investigation of Sleep in Normal Aging and Alzheimer's disease Patients	93.866	73,938	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6937647	230837	Reengineering obesity-induced abnormal microenvironment to improve PDAC Treatment	93.396	-1,519	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6944905	231345	Billing Agreement - Harvard Training Program in Bioinformatics Applied to Diabetes, Obesity and Metabolism	93.847	46,222	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6946132	231409 (BARKSDALE)	Billing Agreement: Alex Barksdale AY22 - A magnetic particle imager (MOI) for functional brain imaging in humans	93.286	57,597	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6945559	231409 (BARKSDALE)	Billing Agreement: Alex Barksdale SS21 - A magnetic particle imager (MOI) for functional brain imaging in humans	93.286	8,117	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6945954	231409 (DRAGO)	Billing Agreement: John Drago - A magnetic particle imager (MOI) for functional brain imaging in humans	93.286	64,614	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6945680	231409 (DRAGO)	Billing Agreement: John Drago - A magnetic particle imager (MPI) for functional brain imaging in humans	93.286	11,125	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6945960	231409 (MATTINGLY)	Billing Agreement - Eli Mattingly - A magnetic particle imager (MOI) for functional brain imaging in humans	93.286	11,623	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6947072	232578	Billing Agreement - Yong-Chul Yoon - High Power Source Development for Intraoperative Optical CoherenceTomography	93.310	30,055	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6947562	232578	Billing Agreement - Yong-Chul Yoon - Subsampled OCT for visualizing nerves and vasculature during robotic surgery	93.310	21,013	-

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DEPARTMENT OF HEALTH & HUMAN SERVICES	6940260	233405	Harnessing Diverse BioInformatic Approaches to Repurpose Drugs for Alzheimers Disease (R01 Resub)	93.866	87,353	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6940323	233811	Leveraging Artificial Intelligence for the assessment of severity of depressive symptoms	93.242	252,242	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6946487	234363	Billing Agreement - Micayla Flores - Generating a Quantitative OB Risk Score	93.837	8,296	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6947260	234408	Determining antigen recognition in systemic sclerosis	93.855	109,787	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6946489	234419	Billing Agreement - Micayla Flores - Generating a Quantitative OB Risk Score	93.847	4,546	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6947031	235400	DISCOVERY: Determinants of Incident Stroke Cognitive Outcomes and Vascular Effects on RecoverY	93.853	14,334	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6946856	235400 (POST)	Billing Agreement - Jay Patel - DISCOVERY: Administrative Core	93.853	15,656	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6944773	235663	An integrated translational approach to overcome drug resistance	93.353	93,678	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6946445	236156	Amniotic Membrane Derived Matrix for Large Bone Defect Repair - Leddy billing agreement	93.121	18,239	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6946478	236156	Bryan Bryson - Amniotic Memberan Derived Matrix for Large Bone Defect Repair - Bryson summer salary billng agreement	93.121	8,284	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6945364	236327	Billing Agreement: A proteomic approach to understanding phagosome evolution in TB infection - Sydney Solomon	93.855	51,682	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6945430	236354	Billing Agreement - Sarah Nyquist - Base Funding - Immune Mechanisms of Protection against Mycobacterium Tuberculosis Center (IMPAc-TB)	93.RD	-7	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6944903	236446 (HOEBEL)	Billing Agreement - Katharina Hoebel - Distributed Learning of Deep Learning Models for Cancer Research	93.394	27,541	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6943169	236482	Demystifying the antiviral activity of the IgG3+ antibody response	93.855	104,245	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6943529	236596	Defining the Fc-correlates of protection against influenza	93.855	121,450	-
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	96,626	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6943526	236707	Prebiotic effect of eicosapentaenoic acid treatment for colorectal cancer	93.396	77,513	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6945953	236792 (DONG)	Billing Agreement: Zijing Dong, fMRI Technologies for Imaging at the Limit of Biological Spatiotemporal Resolution	93.286	12,175	-

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DEPARTMENT OF HEALTH & HUMAN SERVICES	6944191	236887	Mechanisms of HIV-associated epithelial intestinal stem cell (ISC) dysfunction	93.847	287,481	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6947025	237342 (HOEBEL)	Billing Agreement - Katharina Hoebel - Robust AI to develop risk models in retinopathy of prematurity using deep learning	93.867	23,329	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6944456	237387	Development of Novel Bacteriophages Targeting Enteric Bacterial Pathogens	93.855	24,284	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6944721	237693	Mapping and dissecting the role of antibodies in Mtb control	93.855	27,516	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6945568	237869	Defining functional humoral correlates of immunity to guide vaccine design	93.855	197,230	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6946847	238179	Natural Language Processing and Artificial Intelligence employed in the Pediatric Proton/photon Consortium Registry	93.RD	115,377	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6945646	238406 (AGARWAL)	Billing Agreement: Vibha Agarwal - Collaborative AI for Covid-19 (CAI4C)	93.RD	11,125	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6945302	238575	Effects of inflammaging on intestinal epithelial cells and aspirin chemoprevention.	93.393	242,752	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6947041	238616 (AREFEEN)	BIlling Agreement: Yamin Arefeen, Rapid Fetal HASTE MR Imaging	93.286	20,818	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6945842	238616 (AREFEEN)	Billing Agreement: Yamin Areffn, Rapid Fetal HASTE MR Imaging	93.286	3,728	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6946808	238641	CSIBD Cellular and In Vivo Models Core - Omer Yilmaz	93.847	4,659	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6946433	238650 (HOEBEL)	Billing Agreement - Katharina Hoebel - Clinical and Genetic Analysis of Retinopathy or Prematurity	93.867	11,623	-
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	25,909	-
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	32,085	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6947315	238659	Billing Agreement - Thuyet (Tyler) Dao - Defining the impact of drug use on immune function and fitness against HIV-1	93.279	11,795	-
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	32,085	-
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	32,085	-

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DEPARTMENT OF HEALTH & HUMAN SERVICES	6945817	238695	Improving treatment of HER2+ breast cancer brain metastasis by targeting cancer metabolism	93.396	274,249	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6947254	239186	Billing Agmt_Solomon-High-dimensional characterization of phagosome composition, control and phagocytic receptor redundancy	93.859	33,821	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6946824	239186	High-dimensional characterization of phagosome composition, control and phagocytic receptor redundancy- Allsup - student billing agreement	93.859	66,929	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6946825	239186	High-dimensional characterization of phagosome composition, control and phagocytic receptor redundancy- summer salary	93.859	25,103	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6947500	240464	Billing Agreement - Sarah Quinn - I4C 2.0 Immunotherapy for Cure	93.855	10,973	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6947496	240464	Billing Agreement - Son Nguyen - I4C 2.0 Immunotherapy for Cure	93.855	30,739	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6947499	240464	Billing Agreement - Vincent Miao - I4C 2.0 Immunotherapy for Cure	93.855	13,312	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6945604	300374	The effects of unison production on speech fluency in people with aphasia	93.173	15,750	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6937425	SUBAWARD 231183	Parallel Excitation Methods for High Field MRI, NIH, PA-16-160	93.286	49,532	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6938915	SUBAWARD NO. 230203	Non-Human Primate Studies of Anesthetic Action	93.279	188,975	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6937453	SUBAWARD NO. 231125	Sleep-dependent Memory Processing in Schizophrenia	93.279	166,114	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6942989	SUBAWARD# 235289	Platelet alphaIIbeta3 activation and therapeutic targeting	93.839	63,084	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6944770	SUBAWARD# 236524	COVID-19: CIMIT Research Proposal Peko Hosoi	93.286	67,362	-
			Total for Massachusetts General Hospital		**3,448,889**	**-**
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	182,826	-
			Total for European Bioinformatics Institute		**182,826**	**-**
University of Texas-MD Anderson Cancer Center						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6943466	3001559445	Therapeutic modulation of the phagocytosis axis as a novel glioblastoma immunotherapy	93.853	46,191	-
			Total for University of Texas-MD Anderson Cancer Center		**46,191**	**-**

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Augusta University						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6942168	31733-2	Hydrogel probes for stereotaxic injection	93.847	-4,784	-
			Total for Augusta University		**-4,784**	**-**
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	74,608	-
			Total for University of Louisiana at Lafayette		**74,608**	**-**
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	475,953	-
			Total for McLean Hospital		**475,953**	**-**
National Bureau of Economic Research, Inc.						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6937964	4125B.05.MIT	Empirical Studies of the Development and Diffusion of Medical Technologies	93.866	0	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6940132	4126B.MIT	What Does Health Insurance Do? Evidence from the Oregon Health Insurance Lottery	93.866	178,854	-
			Total for National Bureau of Economic Research, Inc.		**178,854**	**-**
University of Rochester						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6945297	417479 / URFAO: GR510880	Passive Monitoring of Parkinson Disease Features at Home NINDS Morris K. Udall Centers of Excellence for Parkinson's Disease Research (P50)	93.853	167,536	-
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	144,817	-
			Total for University of Rochester		**312,353**	**-**
Boston Medical Center						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6944572	4300744001-MIT 05349	A multi-modular approach for human pluripotent stem cell-based liver regeneration	93.847	112,494	-
			Total for Boston Medical Center		**112,494**	**-**
Boston University						

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DEPARTMENT OF HEALTH & HUMAN SERVICES	6940789	4500003010	Functional reorganization of the language and domain-general multiple demand systems in aphasia	93.173	199,331	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6947545	4500003437	Multidimensional Optimization of Voltage Indicators for In Vivo Neural Activity Imaging	93.242	333,070	-
			Total for Boston University		**532,401**	**-**
The Broad Institute, Inc.						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6943347	5000419-5500001352	Genomic applications to transform Gram-negative Abx discovery	93.855	6,288	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6943383	5000428-5500001351	Infection site-specific activation and amplification of antimicrobial peptide activity	93.855	98,866	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6943346	5000657-5500001353	Innovative technologies to transform antibiotic discovery - Administrative Core	93.855	163	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6945975	5000658-5500001353	Innovative technologies to transform antibiotic discovery - Administrative Core	93.855	10,658	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6946096	5001139-5500001351	Infection site-specific activation and amplification of antimicrobial peptide activity	93.855	1,464,613	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6945980	5001141-5500001352	Genomic applications to transform Gram-negative Abx discovery	93.855	147,002	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6946901	5001242-5500001658	Single Cell Transcriptomic and Epigenomic Dissection of Opioid and Cocaine Responses in HIV	93.279	401,835	-
			Total for The Broad Institute, Inc.		**2,129,425**	**-**
Northeastern University						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6933466	500449-78050	Predictability in Complex Object Control	93.865	-770	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6935020	500489-78051	GuMI: New In Vitro Platforms to Parse the Human Gut Epithelial-Microbiome-Immune Axis	93.286	107,329	-
			Total for Northeastern University		**106,559**	**-**
Tufts Medical Center						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6944340	5017158-SERV	Johns Hopkins-Tufts Trial Innovation Center	93.350	41,479	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6943179	PO EP0182273 / 102188-00001-ELAZER_EDELMAN	Clinical and Translational Science Award U54	93.350	84,430	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6945625	PO EP0182273 /SUBAWARD NO. 102188-00043:NH9050_EDELMAN	Clinical and Translational Science Award U54	93.350	759,929	-
			Total for Tufts Medical Center		**885,837**	**-**

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Massachusetts Eye and Ear Infirmary						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6943500	530842	Implantable Microphones for Fully Implantable Hearing Prosthetics	93.173	17,144	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6940820	SUBAWARD NO. 530673	Implantable Microphones for Fully Implantable Hearing Prosthetics	93.173	119,468	-
			Total for Massachusetts Eye and Ear Infirmary		**136,612**	**-**
Schepens Eye Research Institute						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6946214	533468	Innate and Adaptive Immunity in the Pathogenesis of Glaucoma	93.867	116,321	-
			Total for Schepens Eye Research Institute		**116,321**	**-**
Lehigh University						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6944249	544267-78002	Promoting Receptor Protein Tyrosine Phosphatase Activity by Targeting Transmembrane Domain Interactions	93.859	128,180	-
			Total for Lehigh University		**128,180**	**-**
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	71,249	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6943537	5-54276	Consortia for HIV/AIDS Vaccine Development (CHAVD) RFA-AI-18-001	93.855	1,222	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6943959	5-54322	Consortia for HIV/AIDS Vaccine Development (CHAVD) - Supplement Project 3	93.855	-38,352	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6943988	5-54349	Consortia for HIV/AIDS Vaccine Development (CHAVD) Supplement Project 4	93.855	4,312	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6944019	5-54355	Consortia for HIV/AIDS Vaccine Development (CHAVD) - Supplement Project 2	93.855	-2,120	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6945211	5-54431	The Consortium for Viral Systems Biology (CViSB)	93.855	51,706	-
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	199,963	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6945782	5-54554	Consortia for HIV/AIDS Vaccine Development (CHAVD) RFA-AI-18-001	93.855	809,307	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6946291	5-54638	Consortia for HIV/AIDS Vaccine Development (CHAVD) Supplement Project 3	93.855	58,042	-

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DEPARTMENT OF HEALTH & HUMAN SERVICES	6946295	5-54642	Consortia for HIV/AIDS Vaccine Development (CHAVD) Supplement Project 7	93.855	163,130	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6947246	5-54696	The Consortium for Viral Systems Biology (CViSB)	93.855	33,093	-
			Total for The Scripps Research Institute		**1,351,551**	**-**
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	110,522	-
			Total for University of Connecticut		**110,522**	**-**
Northwestern University						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6940198	60047352 MIT	Bayesian Generative Methods for Extracting and Modeling Relations in EHR Narratives	93.879	37	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6944783	60056285 MIT	Modeling the Incompleteness and Biases of Health Data	93.879	58,280	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6946844	60059581 MIT	CRITICAL: Collaborative Resource for Intensive care Translational science, Informatics, Comprehensive Analytics, and Learning	93.350	4,404	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6944260	SP0046269-PROJ001311	Whole-brain recording into nucleic acids using template-independent polymerases	93.853	14,285	-
			Total for Northwestern University		**77,005**	**-**
Stanford University						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6945635	62106626-28291	Project 1 - Influenza responses and repertoire in vaccination, infection and tonsil organoids	93.855	22,720	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6945749	62196377-28291	Influenza responses and repertoire in vaccination, infection and tonsil organoids	93.855	23,351	-
			Total for Stanford University		**46,071**	**-**
Cold Spring Harbor Laboratory						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6943493	64580127/PO# 921003-SV	A High Resolution Cell Type Atlas of the Mouse Forebrain.	93.242	-291	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6946024	64580527/PO# 921003-SV	A High Resolution Cell Type Atlas of the Mouse Forebrain.	93.242	203,036	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6945336	65300112/PO#: 921072-SV	High-throughput approaches to local and long-range synaptic connectivity	93.242	139,688	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6946608	65300212	High-throughput approaches to local and long-range synaptic connectivity	93.242	428,841	-

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			Total for Cold Spring Harbor Laboratory		**771,274**	**-**
University of California-San Diego						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6945442	704347	Reverse Engineering the Brain Stem Circuits that Govern Exploratory Behavior	93.853	649,130	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6936867	91379849 (PO# S9001710)	Infection-homing nanosystems as antibacterial therapeutics-delivery platforms	93.855	228,994	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6943714	KR 703870	Antimicrobial activity of Escherichia coli Nissle 1917 microcin M	93.855	14,011	-
			Total for University of California-San Diego		**892,135**	**-**
Indiana University						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6944530	8750-MIT	Molecular engineering of complementary glucose-responsive conformational switches in insulin and glucagon	93.847	102,747	-
			Total for Indiana University		**102,747**	**-**
University of California - San Francisco						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6934999	9574SC	PROJECT 1: Defining the unique properties of the distinct signaling machinery used by TCR	93.855	40,604	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6935000	9583SC	PROJECT 2: Defining the unique properties of the distinct signaling machinery used by TCR	93.855	27,154	-
			Total for University of California - San Francisco		**67,758**	**-**
Albany Research Institute, Inc.						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6944859	96.2.03	Dynamics and Causal Functions of Large-Scale Cortical and Subcortical Networks	93.853	99,751	-
			Total for Albany Research Institute, Inc.		**99,751**	**-**
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	33,733	-
			Total for University of California - Santa Cruz		**33,733**	**-**
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	269,373	-
			Total for University of Minnesota		**269,373**	**-**

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Duke University						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6944200	A032777	Project 3: Chemical Probe Discovery for PAX3-FOXO1	93.393	242,000	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6944917	A034481	Using Genetic Tools to Dissect Neural Circuits for Social Communication	93.242	293,264	-
			Total for Duke University		**535,264**	**-**
University of California/Davis						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6943726	A18-0226-S002	Facile Synthesis of Microbial Polysaccharides	93.310	-19,072	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6946042	A19-1044-S004	Recombinant Immunolabels for Nanoprecise Brain Mapping Across Scales	93.853	72,544	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6946140	A21-1551-S003	Mutiplex imaging in vivo with an extend color-palette of neuromodulator sensors	93.853	73,165	-
			Total for University of California/Davis		**126,637**	**-**
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	191,819	-
			Total for Praevium Research Inc.		**191,819**	**-**
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	45,772	-
			Total for Collagen Medical LLC		**45,772**	**-**
InnoTech LLC						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6944893	AGRMT DATED 02/08/2021	COVID-19: A multimodal platform for Oral screening of COVID-19	93.310	104,297	-
			Total for InnoTech LLC		**104,297**	**-**
3M Innovative Properties Company						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6945061	AGRMT. DATED TBD	Low-cost, paper-based assay with high selectivity and sensitivity	93.286	23,951	-
			Total for 3M Innovative Properties Company		**23,951**	**-**
University of Pittsburgh						

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DEPARTMENT OF HEALTH & HUMAN SERVICES	6943008	AWD00001777 (133980-1)	Motor cortical signaling of impedance during manipulation	93.853	148,286	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6944892	AWD00002100 (134992-1)	Multi-cell type human liver on chip microphysiological platform to examine CRISPR-based gene modulation	93.847	60	-
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	115,149	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6939246	CNVA0060623 (131345-1)	Neural Encoding of Impedance for Object Manipulation	93.853	-14	-
			Total for University of Pittsburgh		**263,481**	**-**
University of Virginia						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6943791	GB10844.PO#2261580	Multi-scale model of microbial phenotype modulation by mucins	93.855	65,162	-
			Total for University of Virginia		**65,162**	**-**
Children's Hospital Boston						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6939788	GENFD0001538557	Novel Biologic Therapies for BMT: Mechanistic Evaluation in Rhesus Macaques	93.839	-965	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6942424	GENFD0001734192	Novel MRI Assessment of Placental Structure and Function Throughout Pregnancy	93.865	122,325	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6945637	GENFD0002058190	Molecular Circuits in the Hematopoietic Stem Cell Niche	93.847	323,832	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6947724	GENFD0002058190/GENFD0001889843	Molecular Circuits in the Hematopoietic Stem Cell Niche	93.847	20,810	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6947250	GENFD0002152100	Fetal MRI: robust self-driving brain acquisition and body movement quantification	93.286	55,850	-
			Total for Children's Hospital Boston		**521,853**	**-**
Yale University						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6935083	GK000523 (CON-80000585)	Dynamic Neuroimmune Profiling in Patients with Acute Intracerebral Hemorrhage.	93.853	30,472	-
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	8,961	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6944458	GR110761 (CON-80002664)	ELECTRO-BOOST: Electroencephalography for cerebral trauma recovery & oxygenation	93.853	21,229	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6944971	M17A12653(A10974)	Systems Immune Profiling of Divergent Responses to Infection	93.855	21,078	-
			Total for Yale University		**81,739**	**-**

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MicroBrightField, Inc						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6946605	MH124566-01A1	NeuroExM	93.242	187,114	-
			Total for MicroBrightField, Inc		**187,114**	**-**
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	66,627	-
			Total for Neural Dynamics Technologies		**66,627**	**-**
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	27,162	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6944367	OSP33133-02	Center for 3D Structure and Physics of the Genome	93.310	1,817	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6945739	OSP33133-02, PO WA01146636	Center for 3D Structure and Physics of the Genome	93.310	176,500	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6944306	OSP33133-03/WA01042853	Center for 3D Structure and Physics of the Genome	93.310	-1,318	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6944925	PO WA01069406	EDAC: ENCODE Data Analysis Center	93.172	76,462	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6945540	PO WA01146635/OSP33133 -03	Center for 3D Structure and Physics of the Genome	93.310	346,428	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6946293	SUB00000076/PO# WA01159829	Develop combinatorial non-viral and viral CRISPR delivery for lung diseases	93.310	165,770	-
			Total for University of Massachusetts Medical Center		**792,820**	**-**
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	2,949	-
			Total for Jackson Laboratory		**2,949**	**-**
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	217,194	-
			Total for Johns Hopkins University		**217,194**	**-**
University of Michigan						

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DEPARTMENT OF HEALTH & HUMAN SERVICES	6941388	PO# 3005610970/SUBK00011520	Analysis and Characterization of Trauma-Induced Coagulopathy	93.839	3,737	-
			Total for University of Michigan		**3,737**	**-**
University of Maryland						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6942722	PO#1000001612/SUBAWARD F301577-1	Internal Dynamics of the Postsynaptic Density	93.242	64,133	-
			Total for University of Maryland		**64,133**	**-**
Dartmouth College						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6942712	R1346	Computational design of novel protein binders based on structure mining and learning from data	93.859	264,950	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6945976	SUBAWARD NO. R1333	Causes and Consequences of Healthcare Efficiency	93.866	17,184	-
			Total for Dartmouth College		**282,134**	**-**
University of California-Riverside						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6939893	S-001090	RAPs-mediated post-transcriptional control in Apicomplexan parasites	93.855	183,374	-
			Total for University of California-Riverside		**183,374**	**-**
University of Texas Health Science Center						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6946594	SA0001272	Digital biomarkers for a low cost ambulatory test for early detection of Alzheimer's disease	93.866	27,017	-
			Total for University of Texas Health Science Center		**27,017**	**-**
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	90,476	-
			Total for DeNovX, LLC		**90,476**	**-**
Somagenics, Inc.						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6942104	SBIR SUB AGMT EFF 10/1/19	A novel sshRNA-antimiR combination therapy for accelerating healing of diabetic foot ulcer	93.847	2,422	-
			Total for Somagenics, Inc.		**2,422**	**-**
Ension, Inc.						

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DEPARTMENT OF HEALTH & HUMAN SERVICES	6944743	STTR EFFECTIVE 06/16/2020	Magnetic Levitation Motor for Pediatric Cardiac and Cardiopulmonary Therapies	93.837	204,423	-
			Total for Ension, Inc.		**204,423**	**-**
Integrated Laboratory Systems, Inc.						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6944233	SUB UNDER U44ES024698	SBIR Phase II: CometChip: Novel Advances in Throughput and Capacity for the in vivo Comet Assay	93.113	86,659	-
			Total for Integrated Laboratory Systems, Inc.		**86,659**	**-**
CREARE, Incorporated						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6940410	SUB# S633 / PO# 99163	Lab Drone Phase II	93.RD	32,243	-
			Total for CREARE, Incorporated		**32,243**	**-**
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	130,226	-
			Total for Trustees of Boston University		**130,226**	**-**
University of Connecticut Health Center						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6944778	UCHC7-129146661-A7	A Comprehensive Functional Map of Human Protein-RNA Interactions	93.172	432,583	-
			Total for University of Connecticut Health Center		**432,583**	**-**
University of Florida						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6939490	UFDSP00012280	PREsurgical Cognitive Evaluation via Digital clockfacE drawing	93.866	49,337	-
			Total for University of Florida		**49,337**	**-**
University of Texas - Austin						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6935645	UTA16-001174	NeuroScout: A cloud-based platform for flexible re-analysis of naturalistic fMRI datasets	93.242	4,234	-
			Total for University of Texas - Austin		**4,234**	**-**
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	146,760	-

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DEPARTMENT OF HEALTH & HUMAN SERVICES	6944261	UWSC12292 BPO: 51861	Optogenetics to improve hand function after spinal cord injury	93.853	187,154	-
			Total for University of Washington		**333,914**	**-**
Vanderbilt University Medical Center						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6941207	VUMC 36112	Etiologic Studies of Gastric Carcinoma	93.393	-6,152	-
			Total for Vanderbilt University Medical Center		**-6,152**	**-**
Vanderbilt University						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6943945	VUMC77355	The role of distinct cancer stem cell populations in colorectal cancer	93.397	72,167	-
			Total for Vanderbilt University		**72,167**	**-**
Washington University						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6944568	WU-21-57	Multiscale models of fibrous interface mechanics	93.846	91,530	-
			Total for Washington University		**91,530**	**-**
			TOTAL for Department of Health & Human Services		**27,812,520**	**-**

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DEPARTMENT OF HOMELAND SECURITY						
CNA						
DEPARTMENT OF HOMELAND SECURITY	6943998	PO-0024337/1487.0014.E196.00	FEMA LCSC - Project Management Support	97.RD	6,726	-
DEPARTMENT OF HOMELAND SECURITY	6944006	PO-0024342/1487.0015.E198.00	FEMA LCSC - Project Management Support	97.RD	6,115	-
DEPARTMENT OF HOMELAND SECURITY	6944341	PO-0024408/1487.0016.E268.00	FEMA LCSC - Project Management Support	97.RD	95,632	-
DEPARTMENT OF HOMELAND SECURITY	6945756	PO-0024727/1487.0018.E466.00	FEMA LCSC - Project Management Support	97.RD	141,232	-
DEPARTMENT OF HOMELAND SECURITY	6946235	PO-0024818/1487.0019.E499.00	FEMA LCSC - Project Management Support	97.RD	6,242	-
DEPARTMENT OF HOMELAND SECURITY	6946236	PO-0024825/1487.0020.E504.00	FEMA LCSC - Project Management Support	97.RD	15,500	-
DEPARTMENT OF HOMELAND SECURITY	6946237	PO-0024841/1487.0020.E504.00	FEMA LCSC - Project Management Support	97.RD	15,549	-
			Total for CNA		**286,995**	**-**
			TOTAL for Department of Homeland Security		**286,995**	**-**

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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	64,434	-
			Total for Boston University		**64,434**	**-**
University of Maryland - College Park						
DEPARTMENT OF TRANSPORTATION	6944808	92207-Z9609201	Trajectory-Based Operations Analysis Phase II	20.RD	40,838	-
			Total for University of Maryland - College Park		**40,838**	**-**
Utah Department of Transportation						
DEPARTMENT OF TRANSPORTATION	6947318	AGMT DTD 04/06/2022	Connected Traffic Signal Corridor Operations	20.RD	2,126	-
			Total for Utah Department of Transportation		**2,126**	**-**
General Electric Company						
DEPARTMENT OF TRANSPORTATION	6940636	PO 401138496	Design and Evaluation of a Robust Manual Locomotive Operating Mode	20.RD	44,576	-
			Total for General Electric Company		**44,576**	**-**
			TOTAL for Department of Transportation		**151,974**	**-**

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MISCELLANEOUS FEDERAL GOVT						
University of California-San Diego						
MISCELLANEOUS FEDERAL GOVT	6940175	111438341/ PO#S9002172	Nonequilibrium Order Parameter Optoelectronics for Quantum Information Processing (NOPO-QuIP)	12.910	466,412	-
			Total for University of California-San Diego		**466,412**	**-**
Purdue University						
MISCELLANEOUS FEDERAL GOVT	6940314	15200066-022	MCOQA: Mechanically-driven, COherence-enhanced Quantum Angle	12.910	103,005	-
			Total for Purdue University		**103,005**	**-**
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	25,733	-
			Total for Tufts University		**25,733**	**-**
Plasma Energy Innovation, LLC						
MISCELLANEOUS FEDERAL GOVT	6943986	SBIR DTD 09/04/2020	Biomass Gasification Engine Testing	10.212	15,158	-
			Total for Plasma Energy Innovation, LLC		**15,158**	**-**
Harvard University						
MISCELLANEOUS FEDERAL GOVT	6942990	100866-5112734	Raskin Welfare Reform: Transition to Electronic Distributions	98.001	102,329	-
			Total for Harvard University		**102,329**	**-**
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	201,940	-
			Total for Harvard School of Public Health		**201,940**	**-**
RTI International						
MISCELLANEOUS FEDERAL GOVT	6944125	1-312-0217117-65876L	Economy-Wide Modeling of Energy/Environment Policy Scenarios	66.RD	47,783	-
			Total for RTI International		**47,783**	**-**

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University of Wyoming						
MISCELLANEOUS FEDERAL GOVT	6944619	CARES-HUB4-MIT	COVID-19: Hydrogel Immunoassays for Rapid Point-of-Care COVID Testing	21.019	10,142	-
			Total for University of Wyoming		**10,142**	**-**
Millennium Challenge Account Morocco (MCA-Morocco)						
MISCELLANEOUS FEDERAL GOVT	6943692	EW-20	The J-PAL and EPoD Employment Lab	85.RD	1,519,905	1,176,241
			Total for Millennium Challenge Account Morocco (MCA-Morocco)		**1,519,905**	**1,176,241**
Yale University						
MISCELLANEOUS FEDERAL GOVT	6939096	GR103296 (CON-80001289)	Drinking Water Vulnerability and Neonatal Health Outcomes in Relation to Oil and Gas Production in the Appalachian Basin	66.511	513	-
			Total for Yale University		**513**	**-**
Institut Teknologi Bandung (ITB)						
MISCELLANEOUS FEDERAL GOVT	6940627	IIE00000078-ITB-1	Mechanical Integrity of Electric Vehicle Battery Packs	98.001	165	-
			Total for Institut Teknologi Bandung (ITB)		**165**	**-**
Vanderbilt University						
MISCELLANEOUS FEDERAL GOVT	6947300	P22011798; UNIV62036	Cognitive Attack Planning Spanning from Threats to Vulnerabilities CLIN 1	12.RD	97,131	-
			Total for Vanderbilt University		**97,131**	**-**
Pennsylvania State University						
MISCELLANEOUS FEDERAL GOVT	6946676	S002283-USAID	Current and Emerging Threats to Crops Innovation Lab (CETC IL)	98.001	99,748	-
			Total for Pennsylvania State University		**99,748**	**-**
National Academy of Sciences						
MISCELLANEOUS FEDERAL GOVT	6938265	SUBAWARD 2000009130	Water Desalination Using Solar-Powered Capacitive Deionization Technology and Abundant Natural Resources	98.001	35,673	-
			Total for National Academy of Sciences		**35,673**	**-**
			TOTAL for Miscellaneous Federal Govt		**2,725,637**	**1,176,241**

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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	7,401	-
			Total for University of California - Berkeley		**7,401**	**-**
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	235,824	-
			Total for University of Illinois-Urbana Champaign		**235,824**	**-**
University of California, Los Angeles						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6943435	1000 G XD598	Shining Light on Supersonically Induced Gas Objects	43.001	101,056	-
			Total for University of California, Los Angeles		**101,056**	**-**
Northern Arizona University						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6947816	1005096-01	The MIT-Hawaii Near Earth Object Spectroscopic Survey	43.001	14	-
			Total for Northern Arizona University		**14**	**-**
Purdue University						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6935856	12000179-009	Constraining lunar crater saturation by modeling GRAIL porosity	43.001	6,963	-
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	2,937	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6946432	12000416-003	The evolution of planetary crusts through lunar gravity and topography	43.001	5,012	-
			Total for Purdue University		**14,912**	**-**
University of Scranton						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6946826	121625	Enabling Space Weather Research with Global Scale Amateur Radio Datasets	43.001	9,675	-
			Total for University of Scranton		**9,675**	**-**
CalTech - Jet Propulsion Lab						

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NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6899758	1283622	Voyager Interstellar Mission (VIM) Plasma Science	43.RD	219,783	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6932364	1532689	EUROPA - MISE Co-I Subcontract	43.RD	20,296	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6941778	1633043	UNVEILING THE ACCRETION PHYSICS AND GEOMETRY IN OAO 1657-415 WITH NuSTAR (4181)	43.001	195	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6946722	1672484	Tool for the Study of Interstellar Object Rendezvous Missions	43.001	21,552	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6946921	1672592	Information-Driven and Risk-Bounded Autonomy for Adaptive Science and Exploration	43.001	69,313	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6947429	1674445	Impacts of Changing Sea-Ice Regime on Arctic Ocean Biology	43.001	45,497	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6936100	CREI 1572041	ECCO: Understanding Sea Level, Ice, and Earth's Climate	43.RD	116,767	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6936482	CREI 1576768	Psyche - JPL	43.RD	487,942	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6943258	CREI 1651069	Information-Driven and Risk-Bounded Autonomy for Adaptive Science and Exploration	43.001	-27,279	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6946817	CREI# 1672889	X-Racer: Resilient, adaptive, and superhuman navigation of off-road vehicles at extreme-speeds	43.RD	214,859	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6940961	CREI1628175	MIT-JPL EDU	43.001	16,858	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6943541	RSA #: 1650928	High Resolution Soil Moisture Algorithm Using Synergy of Microwave Active and Passive Observation for the NISAR MISSION	43.001	901	-
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	28,861	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6939446	RSA 1612723	Recent sea-ice and ice-sheet changes and their relation to the coupled ocean-atmosphere system	43.001	3,172	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6944800	RSA 1657710	Year 2: Quantifying the Effect of Dust on Solar Energy Generation in Burkina Faso	43.001	6,925	-
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	4,650	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6942200	RSA NO. 1640773	A Molecular Clock Architecture for Deep Space Inter-SmallSat Radio Occultation	43.001	-4,914	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6942321	RSA NO. 1643595	Accelerating MCMC to Operational Speeds	43.001	-2	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6944378	RSA NO. 1652472	Consortium on Ultracold Atoms in Space	43.RD	8,045	-

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NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6944381	RSA NO. 1657033	Accelerating MCMC to Operational Speeds	43.001	9,198	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6944382	RSA NO. 1657297	Alternative Methods for Acceleration of Wavefront Control Computation for Large Space Telescopes	43.001	-9,681	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6944556	RSA NO. 1657974	Ice sheet mechanical properties as revealed from time-varying surface velocity fields	43.001	52,744	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6944613	RSA NO. 1658304	Impacts of Changing Sea-Ice Regime on Arctic Ocean Biology	43.001	630	-
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	67,885	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6945405	RSA NO. 1660046	A Molecular Clock Architecture for Deep Space Inter-SmallSat Radio Occultation	43.001	42,243	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6946637	RSA NO. 1670737	Accelerating MCMC to Operational Speeds	43.001	28,705	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6947001	RSA NO. 1673868	A CMOS-Molecular-Clock Integrated Platform for Deep Space Communications, Navigations and Radio Science	43.001	39,022	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6944912	RSA NO.1659474	Information-Driven and Risk-Bounded Autonomy for Adaptive Science and Exploration	43.RD	83,705	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6942364	SUBCONTRACT 1642734	Specification-guided and Capability-aware Autonomy for Long-endurance Situational Awareness in Subterranean Environments	43.RD	79,159	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6930713	SUBCONTRACT NO. 1510842	Soil Moisture Science and Product Development	43.RD	233,901	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6945468	SUBCONTRACT NO. 1664286	6A Internship - Perseverance project	43.001	89,662	-
			Total for CalTech - Jet Propulsion Lab		**1,950,596**	**-**
University of Southern California						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6942679	128759572	SPCTOR: Sensing-Policy ConTroller and OptimezeR	43.001	181,643	-
			Total for University of Southern California		**181,643**	**-**
Applied Physics Lab of Johns Hopkins						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6939800	130359	Europa Imaging System (EIS)	43.RD	69,155	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6941599	158669	Dragonfly	43.RD	24,375	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6936841	SUBAWARD 141711	Anatomy of tori: comparing the extremes demonstrated by Jupiter's and Saturn's Magnetospheres	43.001	3,786	-

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			Total for Applied Physics Lab of Johns Hopkins		**97,317**	**-**
University of California-San Diego						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6943170	130808869	Routes of the upper limb of the global overturning circulation	43.001	17,577	-
			Total for University of California-San Diego		**17,577**	**-**
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	18,279	-
			Total for University of Colorado Boulder		**18,279**	**-**
Johns Hopkins University						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6941428	157497	Establishing the Presence of Ethane in Titan's Lakes	43.001	17,865	-
			Total for Johns Hopkins University		**17,865**	**-**
Planetary Science Institute						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6944815	1780-MIT	Studying small-body atmospheres through stellar occultations	43.001	39,850	-
			Total for Planetary Science Institute		**39,850**	**-**
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	21,835	-
			Total for University of New Hampshire		**21,835**	**-**
Arizona State University						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6937931	18-391	High Temperature GaN Microprocessor for Space Applications	43.001	25,949	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6937562	SUBCONTRACT NO. 17-257	Psyche: Journey to a Metal World (ASU)	43.RD	203,023	-
			Total for Arizona State University		**228,972**	**-**
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	122,120	-
			Total for Columbia University		**122,120**	**-**

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University of Alabama in Huntsville						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6940732	2019-064	Turbulence as Indicator of Physical Processes at the Heliospheric Interface	43.001	46,503	-
			Total for University of Alabama in Huntsville		**46,503**	**-**
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	16,594	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6938097	K99059JRG	Lucy Phase B	43.RD	61,725	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6939450	L99059JRG	Investigating clouds and fogs on Titan	43.001	15,030	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6943416	N99069EH	Wave-mean interaction in Pluto's atmosphere	43.001	6,640	-
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	36,493	-
			Total for Southwest Research Institute		**136,482**	**-**
Trustees of Boston University						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6944275	4500003542	Our Heliospheric Shield	43.001	58,630	-
			Total for Trustees of Boston University		**58,630**	**-**
Space Telescope Science Institute						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6943190	51787	JWST Telescope Scientist Investigations - 2	43.001	63,780	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6937960	HST-GO-14690.001-A	Identifing the last unkown emission component in the Herbig system HD 163296 (HST GO-14690)	43.RD	-34	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6935185	HST-GO-14698.002-A	The first spectrally resolved Ha measurement of an accreting planet (HST-GO-14698)	43.RD	2,544	-
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	30,461	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6937777	HST-GO-15129.010-A	Completing Kepler's Mission to Determine the Frequency of Earth-like Planets (HST 15129)	43.RD	64,711	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6938918	HST-GO-15163.011-A	COS Ultraviolet Baryon Survey (CUBS) (HST 15163)	43.RD	95,834	-

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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	65,466	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6942562	HST-GO-15210.002-A	The extremes of protostellar jets: Resolving the hot jet of Sz 102 (HST 15210)	43.RD	4,871	-
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	100,184	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6938678	HST-GO-15307.008-A	Building the SPT-HST Legacy: Imaging Massive Clusters to z=1.5 (HST 15307)	43.RD	-3,965	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6943867	HST-GO-15333.019-A	The Atmospheric Diversity of Mini-Neptunes in Multi-planet Systems (HST 15333)	43.RD	33,579	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6940574	HST-GO-15641.014-A	Focus on Betelgeuse	43.RD	11,096	-
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	36,087	-
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	38,698	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6942589	HST-GO-15814.001-A	Atmospheric characterization of two temperate mini-Neptunes formed in the same protoplanetary nebula (HST-GO-15814)	43.RD	3,665	-
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	67,988	-
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	14,118	-
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	-8,752	-
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	16,752	-
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	9,846	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6947220	HST-GO-16655.008-A	Betelgeuse: An Iconic and Surprising Red Supergiant	43.RD	1,169	-
			Total for Space Telescope Science Institute		**648,099**	**-**
Pennsylvania State University						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6935503	5586-MIT-NASA-B07G	MIT Participation in a U.S. Contribution to the ATHENA Wide-field Imager	43.001	-3,720	-

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NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6945150	S001534-NASA	MIT Participation in a U.S. Contribution to the ATHENA Wide-field Imager	43.001	249,856	-
			Total for Pennsylvania State University		**246,136**	**-**
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	52,696	-
			Total for Northwestern University		**52,696**	**-**
Stanford University						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6934882	61238711-122362	WFIRST - Exoplanet Coronagraphy Science Team	43.001	38,784	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6942497	62205664-136106	Development of integrated readout electronics for next generation X-ray CCDs	43.001	43,154	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6944318	62467927-176172	Safe Aviation Autonomy with Learning-Enabled Components in the Loop	43.002	164,119	-
			Total for Stanford University		**246,057**	**-**
Baylor College of Medicine						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6936096	7000000324 / TRISH PROJ# DS002	Transitional Research Institute	43.003	381,901	303,290
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	82,658	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6942902	PO#7000001107/NNX16A069A	Dummy Parent: Just in Time Medications from Gastrointestinal Resident Microbial Systems	43.003	359,637	-
			Total for Baylor College of Medicine		**824,196**	**303,290**
Combustion Research & Flow Technology, Inc.						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6946534	80NSSC21C0619/C841	Simulation of Chilldown Process with a Sub-Grid Boiling Model - Phase III	43.RD	6,175	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6943776	SBIR UNDER 80NSSC20C00195	MULTIPHASE CLOSURE MODELING DEVELOPMENT FOR APPLICATION TO CRYOGENIC BOILING (SBIR Phase II)	43.RD	68,576	-
			Total for Combustion Research & Flow Technology, Inc.		**74,751**	**-**
Cornell University						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6943483	87941-11363	Understanding Transient Changes within Smooth Terrains on 67P	43.001	19,606	-

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			Total for Cornell University		**19,606**	**-**
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	196,742	-
			Total for Woods Hole Oceanographic Institution		**196,742**	**-**
ESPACE						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6945404	AGMT DTD 1/26/2021	Bimodal Ion-Chemical Thruster System	43.RD	135,249	-
			Total for ESPACE		**135,249**	**-**
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	413,858	-
			Total for ProtoInnovations, LLC		**413,858**	**-**
Cross Trac Engineering, Inc.						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6940038	AGMT DTD 10/19/18	STTR Phase II: Optical Intersatellite Communications for CubeSat Swarms	43.001	-21	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6946037	AGMT DTD 6/15/2021	Optical Intersatellite Communications for CubeSat Swarms	43.RD	161,971	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6946046	AGMT DTD 8/5/2021	Optical Intersatellite Communications for CubeSat Swarms	43.RD	214,658	-
			Total for Cross Trac Engineering, Inc.		**376,608**	**-**
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	14,081	-
			Total for BlazeTech Corporation		**14,081**	**-**
Physical Sciences, Incorporated						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6945999	AGMT DTD 7/26/2021, # 10-10901	Design exploration for a system for Structural Printing of Solar Melted Regolith	43.RD	28,381	-
			Total for Physical Sciences, Incorporated		**28,381**	**-**
Applied NanoFemto Technologies, LLC						

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NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6946300	AGMT DTD 9/14/2021	Photonics integrated circuits enabled miniature on-chip urine test system	43.RD	134,756	-
			Total for Applied NanoFemto Technologies, LLC		**134,756**	**-**
Little Prairie Services						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6947653	AGMT DTD. 04/26/2022	NTR Fuel Testing in MIT Reactor Facilities	43.RD	2,731	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6944937	AGREEMENT DATE 07/30/2020	NTR Fuel Testing in MIT Reactor Facilities	43.RD	-595	-
			Total for Little Prairie Services		**2,136**	**-**
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	153,929	-
			Total for New Electricity Transmission Software Solutions Inc.		**153,929**	**-**
STONE AEROSPACE, INC.						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6942011	AGMT. DTD. 06/01/2019	SESAME Full Proposal with Stone Aerospace	43.001	11,341	-
			Total for STONE AEROSPACE, INC.		**11,341**	**-**
Docugami, Inc.						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6944670	AGREEMENT DATED	Next generation AI-based assisted document authoring, recommendation and understanding.	43.RD	-2,011	-
			Total for Docugami, Inc.		**-2,011**	**-**
LyteChip, Inc						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6946546	AGREEMENT DATED EFF 7/15/2021	High-Performance On-chip Spectrometer for Space Applications	43.RD	35,423	-
			Total for LyteChip, Inc		**35,423**	**-**
Smithsonian Inst. - Astrophysical Observatory						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6942692	AR0-21002B	Catalog of Serendipitous Gratings Spectra (Chandra 21200078)	43.001	29,906	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6941717	AR9-20009X	A Systematic Analysis on M31* X-ray Variability with 3 Ms of Chandra Data from 1999 to 2016 (Chandra 20620472)	43.001	4,718	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6945069	DD0-21127X	Detecting the softening of emission at very low accretion rates in a supermassive black hole (Chandra 21708736)	43.001	23,005	-

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NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6943670	DD9-20115X	Simultaneous X-ray and Radio Observations of the Second Localized Repeating Fast Radio Burst (Chandra 20508702)	43.001	-439	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6942802	GO0-21004B	Have Peter-Pan Systems Revealed the Fountain of Youth? (Chandra 21200100)	43.001	9,796	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6942803	GO0-21011X	Did RW Aur just swallow an iron-rich planet? (Chandra 21200280)	43.001	21,468	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6942757	GO0-21015A	THE TRUE NATURE OF X-RAYS FROM THE ORION TRAPEZIUM (Chandra 21200414)	43.001	173,031	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6942804	GO0-21021X	The future X-ray Sun - An HRC-I survey of old solar analogs (21200586)	43.001	30,152	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6944495	GO0-21035X	Precise Localization of Transient Low-Mass X-ray Binaries (Chandra 21400292)	43.001	29,030	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6943392	GO0-21114A	STUDYING AGN FEEDING AND FEEDBACK IN THE MOST QUENCHED COOL CORE CLUSTER (Chandra 21800206)	43.001	1,927	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6942805	GO0-21124A	Observing the Rarest Clusters at z>1 with Chandra (Chandra 21800528)	43.001	12,797	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6945507	GO1-22046X	Precise Localization of Transient Low-Mass X-ray Binaries (Chandra 22400520)	43.001	19,354	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6946861	GO1-22060X	Simultaneous Chandra, NuSTAR and Radio Observations of CHIME-discovered repeating FRBs (Chandra 22500172)	43.001	14,206	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6945861	GO1-22116X	Mapping Gas Flows in AGNs by Reverberation (Chandra 22700634)	43.001	3,395	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6946118	GO1-22131A	Building a Legacy Progenitor-Selected Cluster Sample at z>1 (Chandra 22800462)	43.001	17,044	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6933495	GO5-16044X	Filling the gap in understanding the wind structure of HDE 226868 /Cyg X-1 (Chandra 16400537)	43.RD	1,323	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6934989	GO6-17134X	Optical Depth of Si K in Bright Low-Mass X-Ray Binaries (Chandra 17910267)	43.RD	-131	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6937657	GO7-18012B	Definitive X-Ray Detection of the Class 0 Protostar HOPS 383 (Chandra 18200290)	43.RD	7,727	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6940085	GO8-19013X	An (X-ray Gratings) Tale of Two Young Stellar Objects (Chandra 19200676)	43.RD	-64	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6942234	GO8-19086B	Watching a Black Hole Feed: Sgr A* in the X-ray and Infrared (Chandra 19700482)	43.001	16,763	-
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	55,360	-

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NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6940907	GO9-20014X	Did RW Aur just swallow a planet? (Chandra 20200536)	43.001	39,047	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6941239	GO9-20018X	Does accretion effect the X-ray emission of Herbig stars? (Chandra 20200616)	43.001	16,193	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6940869	GO9-20019X	Testing X-ray activity as an age indicator (Chandra 20200630)	43.001	25,907	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6942230	GO9-20029X	Precise Localization of Transient Low-Mass X-ray Binaries (Chandra 20400272)	43.001	8,033	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6940590	GO9-20117A	Studying the Progenitors of Our Favorite Clusters at z > 1 (Chandra 20800438)	43.001	26,112	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6943184	SV0-09008	Readying X-ray Gratings and Optics for Space Applications: Manufacturability & Alignment	43.001	109,105	74,950
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	16,218	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6926645	SV2-82023	ACIS Science Support for the Chandra Program	43.RD	153,662	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6895251	SV3-73016	Support of the Chandra X-Ray Center (CXC)	43.RD	2,963,900	-
			Total for Smithsonian Inst. - Astrophysical Observatory		**3,828,545**	**74,950**
Lunar Resources						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6945609	AWARD EFFECTIVE 09/01/2020	Molten Regolith Electrolysis: The Extraction of Oxygen from Lunar Regolith	43.RD	0	-
			Total for Lunar Resources		**0**	**-**
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	90,466	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6945416	C21-201008-MIT	Revolutionary Computational Aerosciences (RCA) Institute Support	43.008	10,000	-
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	34,054	-
			Total for National Institute of Aerospace		**134,520**	**-**
Center for the Advancement of Science in Space						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6944595	GA-2020-1071	Active Deployment of first Aerospace Electronic Textile	43.007	312	-

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			Total for Center for the Advancement of Science in Space		**312**	**-**
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	8,871	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6945185	GA-2021-9806	Analysis of Cartilage, Bone, Synovium, and Medium Samples from Spaceflight	43.RD	29,364	-
			Total for Center for Advancement of Science in Space		**38,236**	**-**
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	13,939	-
			Total for The Boeing Company		**13,939**	**-**
Michigan Technological University						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6937520	NNX17AJ32G	Institute for Ultra-Strong Composites By Computational Design (US-COMP)	43.012	43,454	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6937089	SUB 1607060Z6 / PO P0100197	Institute for Ultra-Strong Composites By Computational Design (US-COMP)	43.012	176,219	-
			Total for Michigan Technological University		**219,673**	**-**
University of Arizona						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6938420	PO NO. 440148	GUSTO: Gal/Xgal U/LDB Spectroscopic/Stratospheric THz Observatory	43.RD	19,147	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6924918	PURCHASE ORDER 6473	OSIRIS-REx Near-Earth Asteroid Sample Return	43.RD	19,385	-
			Total for University of Arizona		**38,532**	**-**
Michigan State University						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6946281	RC112871A	High Resolution Soil Moisture Algorithm Using Synergy of Microwave Active and Passive Observation for the NISAR MISSION	43.001	41,694	-
			Total for Michigan State University		**41,694**	**-**
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	132,483	-
			Total for University of California-Riverside		**132,483**	**-**

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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	192,892	-
			Total for California Institute of Technology		**192,892**	**-**
Photon Spot, Inc.						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6945777	STTR UNDER 80NSSC21C0126	Integrated Photonics for Quantum Information Processing	43.RD	3,522	-
			Total for Photon Spot, Inc.		**3,522**	**-**
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	12,490	-
			Total for Princeton University		**12,490**	**-**
Massachusetts General Hospital						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6946004	SUBAWARD 238399	Personalized Performance Optimization Platform (P-POP)	43.003	186,422	-
			Total for Massachusetts General Hospital		**186,422**	**-**
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	4,605	-
			Total for Navajo Technical University		**4,605**	**-**
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	21,418	-
			Total for Univ. Corporation For Atmos. Research		**21,418**	**-**
University of Michigan						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6941524	SUBK00011438/3005617618	Europa Clipper Facility Magnetometer Phases C&D	43.001	31,663	-
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	46,926	-
			Total for University of Michigan		**78,589**	**-**

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University Space Research Assoc.						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6942336	SUBK-20-0006	ODM and UTM Synergies	43.RD	-4	-
			Total for University Space Research Assoc.		**-4**	**-**
University of Texas - Austin						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6945944	UTA21-000383	Autonomous Aerial Cargo Operations at Scale	43.001	144,242	-
			Total for University of Texas - Austin		**144,242**	**-**
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	16,270	-
			Total for Washington University in St. Louis		**16,270**	**-**
			TOTAL for National Aeronautics and Space Administration		**12,026,964**	**378,240**

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NATIONAL SCIENCE FOUNDATION						
University of California - Berkeley						
NATIONAL SCIENCE FOUNDATION	2744466	00007444	Center for Energy Efficient Electronics Science (E3S)	47.041	105,700	-
NATIONAL SCIENCE FOUNDATION	6935339	00009391	HERA: Illuminating Our Early Universe	47.049	-1,077	-
NATIONAL SCIENCE FOUNDATION	6945469	00010001	HERA: Unveiling the Cosmic Dawn	47.049	117,142	-
NATIONAL SCIENCE FOUNDATION	6944369	00010462	Collaboration on the Theoretical Foundations of Deep Learning.	47.049	66,741	-
NATIONAL SCIENCE FOUNDATION	6946148	00010799	EFRI E3P: Program plastic lifecycle by rationally design enzyme-containing plastics	47.041	41,947	-
NATIONAL SCIENCE FOUNDATION	6944407	10434	QLCI - CL: Present and Future Quantum Computation	47.049	124,868	-
NATIONAL SCIENCE FOUNDATION	6944675	10462	Collaboration on the Theoretical Foundations of Deep Learning.	47.079	194,809	-
NATIONAL SCIENCE FOUNDATION	6929285	SUBAWARD 00008317/MCB-1330914	Synthetic biology of yeast	47.074	-93	-
			Total for University of California - Berkeley		**650,036**	**-**
University of California, Los Angeles						
NATIONAL SCIENCE FOUNDATION	6937849	0160 G VB426	EFRI ACQUIRE: A chip-scale high-dimensional entanglement and quantum memory module for secure communications	47.041	44,147	-
			Total for University of California, Los Angeles		**44,147**	**-**
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	44,414	-
NATIONAL SCIENCE FOUNDATION	6942057	092992-17667	Collaborative Research: A Search for the Electric Dipole Moment of the Neutron	47.049	59,304	-
			Total for University of Illinois-Urbana Champaign		**103,718**	**-**
Columbia University						
NATIONAL SCIENCE FOUNDATION	6931173	1(GG008891) / PO G05323	CNH: Competing Demands and Future Vulnerability of Groundwater: Drinking Water Quality and Food Security in Arsenic-Impacted South and Southeast Asia	47.050	-58	-
NATIONAL SCIENCE FOUNDATION	6935295	46(GG009393)	Participation of David T. Wang on Expedition 370	47.050	192	-
			Total for Columbia University		**134**	**-**
Harvard Kennedy School of Government						

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NATIONAL SCIENCE FOUNDATION	6945481	100886-5117755	Optimal Public Transportation Networks: Theory and Evidence from Jakarta's Public Bus System	47.075	9,988	-
			Total for Harvard Kennedy School of Government		**9,988**	**-**
Internet2						
NATIONAL SCIENCE FOUNDATION	6940634	1042-B	Investigating Large Scale Heterogeneous computing with the Large Hadron Collider	47.070	-457	-
NATIONAL SCIENCE FOUNDATION	6943616	1042-B-1	Investigating Large Scale Heterogeneous computing with the Large Hadron Collider	47.070	79,756	-
			Total for Internet2		**79,299**	**-**
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	15,000	-
NATIONAL SCIENCE FOUNDATION	6944724	93943-Z3687203	NSF Convergence Accelerator - Track C Interconnecting Quantum Computers for the Next-generation Internet	47.083	141,997	-
			Total for University of Maryland - College Park		**156,997**	**-**
University of Wisconsin-Madison						
NATIONAL SCIENCE FOUNDATION	6944936	1174	Market-Level Effects of Competition in Agricultural Input Markets: Prices, Quality, and Mechanisms	47.075	2,203	-
			Total for University of Wisconsin-Madison		**2,203**	**-**
Harvard University						
NATIONAL SCIENCE FOUNDATION	6941998	123826-5056263	Center for Integrated Quantum Materials	47.049	1,601,422	-
NATIONAL SCIENCE FOUNDATION	6940828	124127-5110072	RAISE: TAQS - Towards a Quantum Cloud	47.041	46,825	-
NATIONAL SCIENCE FOUNDATION	6942548	124189-5112398	DMREF: Hydrogel-actuated cellular soft robotic materials with programmable mechanical properties	47.049	88,733	-
NATIONAL SCIENCE FOUNDATION	6947125	124381-5119999	QuIC-TAQS:Integrated Lithium Niobate Quantum Photonics Platform	47.049	26,345	-
NATIONAL SCIENCE FOUNDATION	6943694	AGMT DTD 8/03/2020	Billing Agreement: Lu Mi, Collaborative Research: Formation of a High Flux Student Research Network (HF-SRN) as a Laboratory for Enhancing Interaction in the PoLS SRN	47.049	0	-
NATIONAL SCIENCE FOUNDATION	6943696	AGMT EFF 9/1/20	Billing Agreement: Lu Mi, Ideas Lab Collaborative Research: Using natural odor stimuli to crack the olfactory code	47.074	0	-

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NATIONAL SCIENCE FOUNDATION	6947461	AGREEMENT REFERENCE # LUKINSP2022-124305	Billing Agreeement: Madison Sutula - Development, Characterization and Measurement of Solid-State Quantum Systems	47.041	17,089	-
NATIONAL SCIENCE FOUNDATION	6946139	HARVARD FUND #134378	Billing Agreement: Kushal Seetharam - EAGER-QAC-QCH: Hybrid Quantum-Classical Algorithm for NMR Inference	47.049	61,965	-
NATIONAL SCIENCE FOUNDATION	6945558	HARVARD FUND #134378	Billing Agreement: Kushal Seetharam - Project Title: EAGER-QAC-QCH: Hybrid Quantum-Classical Algorithm for NMR Inference	47.049	11,508	-
			Total for Harvard University		**1,853,886**	**-**
George Washington University						
NATIONAL SCIENCE FOUNDATION	6935442	16-S08	PIRE: Promoting Urban Sustainability in the Arctic	47.083	-1,737	-
			Total for George Washington University		**-1,737**	**-**
University of California/Davis						
NATIONAL SCIENCE FOUNDATION	6936421	201601893-02	High-Performance, High-Level Tools for Statistical Inference and Unsupervised Learning	47.049	13	-
NATIONAL SCIENCE FOUNDATION	6941718	A19-3499-S001	Leveraging in-context online discussion of course materials to enhance student engagement and learning	47.076	300,105	-
			Total for University of California/Davis		**300,118**	**-**
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	552	-
			Total for University of California - Irvine		**552**	**-**
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	31,771	-
			Total for University of Oklahoma (Norman, OK)		**31,771**	**-**
Computing Research Association						
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	100,140	-
NATIONAL SCIENCE FOUNDATION	2749233	CIF2020-MIT-17	Computing Innovation Fellows 2020 Project	47.070	142,338	-
NATIONAL SCIENCE FOUNDATION	2749161	CIF2020-MIT-48	Computing Innovation Fellows 2020 Project	47.070	138,781	-

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			Total for Computing Research Association		**381,260**	**-**
University of Notre Dame						
NATIONAL SCIENCE FOUNDATION	6946429	204303MIT	SII-Center: SpectrumX - An NSF Spectrum Innovation Center	47.049	143,518	-
			Total for University of Notre Dame		**143,518**	**-**
West Virginia University						
NATIONAL SCIENCE FOUNDATION	6945310	20-494-MIT / PO MM000350453	MRI: Development of a CHIME Outrigger Telescope	47.049	122,904	-
			Total for West Virginia University		**122,904**	**-**
Stevens Institute of Technology						
NATIONAL SCIENCE FOUNDATION	6943990	2103115-02	SII Planning: SPECTRA: Spectrum Policies, Economics, Coexistence, and Technological Research Advancements	47.049	-6	-
			Total for Stevens Institute of Technology		**-6**	**-**
University of Nebraska						
NATIONAL SCIENCE FOUNDATION	6947597	25-0521-0244-007	U.S. CMS Operations at the Large Hadron Collider	47.RD	242,179	-
			Total for University of Nebraska		**242,179**	**-**
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	3,925	-
			Total for Temple University		**3,925**	**-**
Duke University						
NATIONAL SCIENCE FOUNDATION	6939557	333-2439	Center for the Chemistry of Molecularly Optimized Networks	47.049	70,254	-
NATIONAL SCIENCE FOUNDATION	6939582	333-2457	STAQ: Software-Tailored Architecture for Quantum co-design	47.049	52,257	-
NATIONAL SCIENCE FOUNDATION	6946083	333-2765	NSF Center for Molecularly Optimized Networks	47.049	551,069	-
			Total for Duke University		**673,581**	**-**
National Bureau of Economic Research, Inc.						
NATIONAL SCIENCE FOUNDATION	6943720	36373.00.00.00.7700	COVID-19: RAPID: COVID19 Information Campaigns for Vulnerable Populations	47.075	10,550	-

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			Total for National Bureau of Economic Research, Inc.		**10,550**	**-**
University of Rochester						
NATIONAL SCIENCE FOUNDATION	6932946	416750G	PIRE: DUST stimulated drawn-down of atmospheric CO2 as a trigger for Northern Hemisphere Glaciation	47.083	3,935	-
NATIONAL SCIENCE FOUNDATION	6944701	417873-G / UR FAO GR511147	Center for Matter at Atomic Pressures	47.049	250,041	-
			Total for University of Rochester		**253,976**	**-**
Boston University						
NATIONAL SCIENCE FOUNDATION	6938043	4500002547	CIF21 DIBBs: EI: North Eastern Storage Exchange	47.070	48,214	-
NATIONAL SCIENCE FOUNDATION	6940191	4500002879	RAISE Integrating machine learning and biological neural networks	47.041	-671	-
			Total for Boston University		**47,543**	**-**
Virginia Polytechnic Institute & State University						
NATIONAL SCIENCE FOUNDATION	2389822	479590-19825C	MolSSI Software Fellowship	47.070	25,000	-
NATIONAL SCIENCE FOUNDATION	2389811	479590-DUAN	A Database that Integrates Automated Multi-Level Quantum Chemistry Calculations and Machine Learning for Functional Transition Metal Complex Discovery	47.070	50,838	-
NATIONAL SCIENCE FOUNDATION	6944790	480458-19825	Spectrum Innovation Initiative: National Center for Wireless Spectrum Research (SII-Center) – Planning Grant	47.049	7,668	-
			Total for Virginia Polytechnic Institute & State University		**83,506**	**-**
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	227,679	-
			Total for Ohio State University		**227,679**	**-**
American Society/Engineering Education						
NATIONAL SCIENCE FOUNDATION	2749533	769-2053	Engineering Fellows Postdoctoral Fellowship Program	47.041	91,919	-
			Total for American Society/Engineering Education		**91,919**	**-**
University of Maryland						
NATIONAL SCIENCE FOUNDATION	6941887	81350-Z3438201	QII-TAQS:Quantum machine learning with photonics	47.049	332,867	-
			Total for University of Maryland		**332,867**	**-**

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Prime Sponsor Name	Project WBS id	Passthrough Number	WBS Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
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	52,349	-
			Total for University of Southern California		**52,349**	**-**
Kansas State University						
NATIONAL SCIENCE FOUNDATION	6937873	A00-0361-S002	PIRE: High Temperature Ceramic Fibers: Polymer-Based Manufacturing, Nanostructure, and Performance	47.079	115,675	-
			Total for Kansas State University		**115,675**	**-**
Woods Hole Oceanographic Institution						
NATIONAL SCIENCE FOUNDATION	6946535	A101550	Center for Chemical Currencies of a Microbial Planet (C-COMP)	47.050	21,141	-
			Total for Woods Hole Oceanographic Institution		**21,141**	**-**
Emory University						
NATIONAL SCIENCE FOUNDATION	6944300	A375897	CCI Center in Selective C-H Functionalization	47.049	140,749	-
			Total for Emory University		**140,749**	**-**
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	19,319	-
NATIONAL SCIENCE FOUNDATION	6937959	PO 359999	Enabling New Science with the ALMA Phasing System "Phase 2"	47.049	285,184	-
NATIONAL SCIENCE FOUNDATION	6944190	PO 370764	Beyond Black Hole Images: Extending New Imaging Techniques from EHT to ALMA	47.049	99,162	-
NATIONAL SCIENCE FOUNDATION	6946902	PO#374975	Enabling New VLBI Science with the ALMA Phasing System - Phase 3	47.049	53,025	-
			Total for National Radio Astronomy Observatory		**456,691**	**-**
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	8,562	-
NATIONAL SCIENCE FOUNDATION	2749575	AGMT. DTD. 09/15/2021	Dilemmas of Accommodation	47.075	3,693	-
NATIONAL SCIENCE FOUNDATION	2749573	AGMT. DTD. 09/15/2021	Enlisting the Market: Trade Policy as Industrial Policy in Post-WTO China	47.075	697	-
			Total for American Political Science Association		**12,951**	**-**

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Prime Sponsor Name	Project WBS id	Passthrough Number	WBS Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
Transaera, Inc.						
NATIONAL SCIENCE FOUNDATION	6944840	AGREEMENT EFFECTIVE 1/1/2021	Using Metal-Organic Framework Materials to Increase Sustainability of Indoor Farming	47.041	53,534	-
			Total for Transaera, Inc.		**53,534**	**-**
NEROC						
NATIONAL SCIENCE FOUNDATION	6945122	AST-2034306	The Event Horizon Telescope: Resolving Black Holes in Time and Space	47.049	2,713,147	1,868,406
			Total for NEROC		**2,713,147**	**1,868,406**
Arizona State University						
NATIONAL SCIENCE FOUNDATION	6942459	ASUB00000433	Mid-Scale RI-1 (M1:DP): Compact X-ray Free-Electron Laser Project (CXFEL)	47.074	15,594	-
NATIONAL SCIENCE FOUNDATION	6942199	ASUB00000443	Center to Center (C2C) International Collaboration on Advanced Photovoltaics: Electrode Manufacturing and Indoor Power Applications	47.041	38,572	-
NATIONAL SCIENCE FOUNDATION	6946120	ASUB00000832	U.S. Technology Review of Thin Film Cadmium Telluride Photovoltaics	47.050	20,549	-
NATIONAL SCIENCE FOUNDATION	6939979	SUBAWARD NO: 17-096	QESST: ERC for Quantum Energy and Sustainable Solar Technologies	47.041	-26,586	-
			Total for Arizona State University		**48,130**	**-**
Georgia Institute of Technology						
NATIONAL SCIENCE FOUNDATION	6944226	AWD-001496-G1	A Hybrid Programmable Biological-Nanoelectric System	47.041	397,359	-
			Total for Georgia Institute of Technology		**397,359**	**-**
University of Chicago						
NATIONAL SCIENCE FOUNDATION	6946172	AWD101244 (SUB00000549)	Materials Research and Science Engineering Center - Renewal 02	47.049	41,315	-
			Total for University of Chicago		**41,315**	**-**
AMERICAN MUSEUM OF NATURAL HISTORY						
NATIONAL SCIENCE FOUNDATION	6945784	B52-2021-1, PO# 118733	Developing and Testing Innovations [DTI]: SRMPmachine	47.076	136,061	-
			Total for AMERICAN MUSEUM OF NATURAL HISTORY		**136,061**	**-**
Florida A&M University						
NATIONAL SCIENCE FOUNDATION	6937333	C-4979	CREST Center for Complex Materials Design for Multidimensional Additive Processing (CoMan)	47.076	90,238	-

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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 Florida A&M University		**90,238**	**-**
New York University						
NATIONAL SCIENCE FOUNDATION	6937547	F0394-03	Science And Integrated Language Plus Computational Thinking and Modeling with English Learners (SAIL +CTM with ELs)	47.076	-105	-
			Total for New York University		**-105**	**-**
Montana State University						
NATIONAL SCIENCE FOUNDATION	6929216	G111-14-W4576	Engineering Synthetic Symbiosis between Plant and Bacteria to Deliver Nitrogen to Crops	47.074	-45,040	-
			Total for Montana State University		**-45,040**	**-**
University of California-San Diego						
NATIONAL SCIENCE FOUNDATION	6945410	KR 704225	US Global Ocean Repeat and Hydrography Program (US GO-SHIP)	47.050	1,932	-
NATIONAL SCIENCE FOUNDATION	6946307	KR 704702	AI Institute: TILOS: The Institute for Learning-enabled Optimization at Scale	47.070	142,853	-
NATIONAL SCIENCE FOUNDATION	6946774	KR 704800	Mid-scale RI-1 (M1:DP): Designing a global measurement infrastructure to improve Internet security	47.070	147,856	-
NATIONAL SCIENCE FOUNDATION	6937009	SUB # 89409643 PO#S9001704	PFI:BIC: Smart Factories: An Intelligent Material Delivery System to Improve Human-Robot Workflow	47.041	-10	-
NATIONAL SCIENCE FOUNDATION	6939284	SUBAWARD AGREEMENT #106786383 ; PO S9002094	Platform for Applied Network Data Analysis (PANDA)	47.070	82,258	-
			Total for University of California-San Diego		**374,889**	**-**
Texas A & M						
NATIONAL SCIENCE FOUNDATION	6947179	M2201483	CCI Phase I: NSF Center for the Mechanical Control of Chemistry (CMCC)	47.049	63,140	-
			Total for Texas A & M		**63,140**	**-**
University of Colorado Boulder						
NATIONAL SCIENCE FOUNDATION	6945274	PO 1001483847	QLCI-CI: Enhanced Sensing and Distribution Using Quantum States	47.RD	305,094	-
			Total for University of Colorado Boulder		**305,094**	**-**
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	90,035	-

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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 Rutgers University		**90,035**	**-**
Rice University						
NATIONAL SCIENCE FOUNDATION	6944167	R3K023	EFRI DCheM: Electrifying CO2 From Point Sources into Pure Liquid Fuels	47.041	97,990	-
			Total for Rice University		**97,990**	**-**
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	115,881	-
			Total for UNAVCO		**115,881**	**-**
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	71,621	-
			Total for Oregon State University		**71,621**	**-**
University of Massachusetts-Lowell						
NATIONAL SCIENCE FOUNDATION	6944280	S52100000048202	FMNet: A Network for Rapid Execution for Scaling Production of Needed Designs (RESPOND)	47.075	45,617	-
			Total for University of Massachusetts-Lowell		**45,617**	**-**
Smithsonian Inst. - Astrophysical Observatory						
NATIONAL SCIENCE FOUNDATION	6943629	SAO PO# 448574	Understanding Interstellar Aromatic Chemistry: An Integrated Experimental, Theoretical, and Astronomical Approach	47.049	5,789	-
			Total for Smithsonian Inst. - Astrophysical Observatory		**5,789**	**-**
Tufts University						
NATIONAL SCIENCE FOUNDATION	6941932	SF0069/PO EP0190879	Convergence Accelerator Phase I (RAISE): Network Science of Census Data	47.083	-458	-
			Total for Tufts University		**-458**	**-**
Santa Fe Institute						
NATIONAL SCIENCE FOUNDATION	6944411	SFI20200915	Novel wisdom-of-crowds approaches to improving predictions of election polls	47.075	19,507	-
			Total for Santa Fe Institute		**19,507**	**-**

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Prime Sponsor Name	Project WBS id	Passthrough Number	WBS Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
University of Washington						
NATIONAL SCIENCE FOUNDATION	6947741	SUB# UWSC13243 / PO# 61724	HDR Institute: Accelerated AI Algorithms for Data-Driven Discovery	47.070	18,565	-
NATIONAL SCIENCE FOUNDATION	6924726	UWSC6200 (BPO39607)	NSF Engineering Research Center for Sensorimotor Neural Laboratory of Electronics	47.041	-2,809	-
NATIONAL SCIENCE FOUNDATION	6934497	UWSC6200 (BPO4405)	NSF Engineering Research Center for Sensorimotor Neural Laboratory of Electronics	47.041	267	-
			Total for University of Washington		**16,024**	**-**
Princeton University						
NATIONAL SCIENCE FOUNDATION	6935980	SUB0000178	US CMS Software & Computing Subsystem (Year 2017)	47.049	561,234	-
NATIONAL SCIENCE FOUNDATION	6939873	SUB0000276	Institute for Research and Innovation in Software for High Energy Physics (IRIS-HEP)	47.070	110,777	-
NATIONAL SCIENCE FOUNDATION	6945111	SUB0000478	The Science of Deep Specication: Formalizing The Hardware-Software Interface	47.070	13,824	-
			Total for Princeton University		**685,836**	**-**
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	160,581	-
			Total for Educational Testing Service		**160,581**	**-**
Purdue University						
NATIONAL SCIENCE FOUNDATION	6922873	SUBAWARD #10000686-015	Emerging Frontiers of Science of Information	47.070	137,208	-
			Total for Purdue University		**137,208**	**-**
University of Arizona						
NATIONAL SCIENCE FOUNDATION	6946210	SUBAWARD 586648	NSF Engineering Research Center for Quantum Networks (CQN)	47.041	354,646	-
			Total for University of Arizona		**354,646**	**-**
California Institute of Technology						
NATIONAL SCIENCE FOUNDATION	6941437	SUBAWARD NO. S458042	LIGO Operations FY19 through FY23	47.049	4,333,588	-
			Total for California Institute of Technology		**4,333,588**	**-**
University of Michigan						

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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	6946531	SUBK00015726 / PO# 3006717538	NSF Convergence Accelerator Track F: Misinformation Judgments with Public Legitimacy	47.083	68,576	-
			Total for University of Michigan		**68,576**	**-**
The Smithsonian Astrophysical Observatory						
NATIONAL SCIENCE FOUNDATION	6942136	SV0-09003	Mid-scale RI-1 (M1:DP): Next Generation Event Horizon Telescope Design	47.049	513,421	-
			Total for The Smithsonian Astrophysical Observatory		**513,421**	**-**
University of Alaska-Fairbanks						
NATIONAL SCIENCE FOUNDATION	6944274	UA 21-0033	Collaborative Research: US GEOTRACES PMT: Pb and Cr isotopes	47.050	14,037	-
			Total for University of Alaska-Fairbanks		**14,037**	**-**
University of Texas - Austin						
NATIONAL SCIENCE FOUNDATION	6939541	UTA18-001151	Dimensions: Ordering the microbial world into natural genetic, ecological, and functional units	47.074	-832	-
			Total for University of Texas - Austin		**-832**	**-**
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	42,543	-
			Total for Wayne State University		**42,543**	**-**
			TOTAL for National Science Foundation		**17,595,440**	**1,868,406**
			TOTAL Federal Research Support - Passthrough - On Campus		**$126,525,408**	**$3,750,104**

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Federal Agency	Government Contract Number	Master Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
DEPARTMENT OF DEFENSE					
Navy					
12.300					
Navy	N00014-18-1-2890	Competency, Community, Career: A technician apprenticeship certificate for advanced manufacturing	12.300	499,867	476,897
Navy	N00014-19-1-2753	Virtual Manufacturing Lab (VM-Lab):A Multimedia Design House for Digital Learning in Manufacturing-USA Workforce Education	12.300	1,858,023	683,120
		Total for AL # 12.300		*2,357,890*	*1,160,017*
		Total for Navy		**2,357,890**	**1,160,017**
Other DOD					
12.900					
NSA	H98230-21-1-0052	Choose to Study Russian for Professional Needs	12.900	38,955	-
		Total for AL # 12.900		*38,955*	-
12.U04					
NSA	H98230-19-C-0292	MIT Center for Quantum Engineering (MIT-CQE)	12.U04	-84	-
		Total for AL # 12.U04		*-84*	-
12.U08					
NSA	H98230-19-C-0292	MIT Center for Quantum Engineering (MIT-CQE)	12.U08	8,569	-
		Total for AL # 12.U08		*8,569*	-
12.U09					
NSA	H98230-19-C-0292	MIT Center for Quantum Engineering (MIT-CQE)	12.U09	7,184	-
		Total for AL # 12.U09		*7,184*	-
12.U10					
NSA	H98230-19-C-0292	MIT Center for Quantum Engineering (MIT-CQE)	12.U10	11,480	-
		Total for AL # 12.U10		*11,480*	-

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Federal Agency	Government Contract Number	Master Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
12.U26					
NSA	H98230-19-C-0292	MIT Center for Quantum Engineering (MIT-CQE)	12.U26	54,149	-
		Total for AL # 12.U26		*54,149*	-
12.U37					
NSA	H98230-19-C-0292	MIT Center for Quantum Engineering (MIT-CQE)	12.U37	51,505	-
		Total for AL # 12.U37		*51,505*	-
12.U38					
NSA	H98230-19-C-0292	MIT Center for Quantum Engineering (MIT-CQE)	12.U38	90,738	-
		Total for AL # 12.U38		*90,738*	-
12.U39					
NSA	H98230-19-C-0292	MIT Center for Quantum Engineering (MIT-CQE)	12.U39	97,982	-
		Total for AL # 12.U39		*97,982*	-
12.U40					
NSA	H98230-19-C-0292	MIT Center for Quantum Engineering (MIT-CQE)	12.U40	97,982	-
		Total for AL # 12.U40		*97,982*	-
12.U41					
NSA	H98230-19-C-0292	MIT Center for Quantum Engineering (MIT-CQE)	12.U41	86,559	-
		Total for AL # 12.U41		*86,559*	-
12.U56					
NSA	H98230-19-C-0292	MIT Center for Quantum Engineering (MIT-CQE)	12.U56	4,517	-
		Total for AL # 12.U56		*4,517*	-
12.U57					
NSA	H98230-21-1-0354	Machine Learning and Modern Algorithms	12.U57	215,094	-
		Total for AL # 12.U57		*215,094*	-
		Total for Other DOD		**764,630**	**-**
		TOTAL for Department of Defense		**3,122,520**	**1,160,017**

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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	NA21OAR4170031	FY 2021 Knauss Fellowship - Catherine Tobin	11.417	30,446	-
DOC	NA21OAR4170047	FY2021 Knauss Fellowship - Lucila Houttuijn Bloemendaal	11.417	7,265	-
DOC	NA22OAR4170046	FY2022 Knauss Fellowship_Sheron Luk	11.417	64,140	-
		Total for AL # 11.417		*101,850*	-
		Total for Department of Commerce		**101,850**	**-**
		TOTAL for Department of Commerce		**101,850**	**-**

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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	123,962	-
DOE	DE-SC0018354	Convergence QL: NSF/DOE Quantum Science Summer School	81.049	24,773	20,020
DOE	DE-SC0021638	Computational Physics School for Fusion Research (CPS-FR) 2021-2023	81.049	2,772	-
		Total for AL # 81.049		*151,507*	*20,020*
81.121					
DOE	DE-NE0000102	MIT Nuclear Energy University Fellowship Program	81.121	40,738	-
DOE	DE-NE0009063	IUP Scholarship and Fellowship Support	81.121	7,500	-
		Total for AL # 81.121		*48,238*	-
		Total for Department of Energy		**199,745**	**20,020**
		TOTAL for Department of Energy		**199,745**	**20,020**

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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	19,709	-
HHS	90PD0314-01-00	Perceived Discrimination and its Effects on Morale, Effort, Cooperation, and Labor Market Participation	93.647	745	-
		Total for AL # 93.647		*20,454*	-
		Total for Other HHS		**20,454**	**-**
		TOTAL for Department of Health & Human Services		**20,454**	**-**

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Federal Agency	Government Contract Number	Master Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
DEPARTMENT OF TRANSPORTATION					
20.215					
DOT	693JJ32145055	Zhongxia Yan - DDETFP Student Fellowship	20.215	-75	-
		Total for AL # 20.215		*-75*	-
		Total for Department of Transportation		**-75**	**-**
		TOTAL for Department of Transportation		**-75**	**-**

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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 Education					
84.047A					
ED	P047A170618	MIT/Wellesley Upward Bound Program	84.047A	254,508	-
		Total for AL # 84.047A		*254,508*	-
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	8,945,156	-
		Total for AL # 84.425E		*8,945,156*	-
		Total for Department of Education		**9,199,664**	**-**
Other Agencies					
45.024					
Misc.	1865772-44-21	Museums: Support for the ongoing exhibition series List Projects	45.024	22,146	-
Misc.	1884387-34-21	To support Immerse, an online publication that fosters dialogue and provides information about emerging non-fiction media	45.024	19,348	-
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	3,480	-
Misc.	1889090-44-22	To support the ongoing exhibition series List Projects	45.024	32,418	-
		Total for AL # 45.024		*77,392*	-
45.149					
Misc.	PW-253800-17	History from Chicago's Former Steel Mill Neighborhoods: Digitizing and Providing Access to the Southeast Chicago Historical Museum Collection	45.149	0	-
		Total for AL # 45.149		*0*	-
45.169					
Misc.	HAA-284908-22	Latent Archive: Immersive Storytelling Platform for Examining Spatial History	45.169	15,963	-
		Total for AL # 45.169		*15,963*	-

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Federal Agency	Government Contract Number	Master Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
45.301					
Misc.	MA-245643-OMS-20	IMLS Archive Digitization Project	45.301	81,649	-
		Total for AL # 45.301		*81,649*	-
45.313					
Misc.	RE-246380-OLS-20	Building Library Professionals' Creative Learning Competency for Facilitating STEM Programming	45.313	140,662	-
		Total for AL # 45.313		*140,662*	-
77.008					
Misc.	31310018M0021	NRC Fellowship Program	77.008	25,000	-
Misc.	31310018M0038	MIT Nuclear Education Faculty Development Program	77.008	99,202	-
		Total for AL # 77.008		*124,202*	-
98.001					
Misc.	72026319CA00003	Center of Excellence in Energy Research, Education and Entrepreneurship	98.001	0	-
		Total for AL # 98.001		*0*	-
		Total for Other Agencies		**439,868**	**-**
		TOTAL for Miscellaneous Federal Govt		**9,639,532**	**-**

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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					
43.001					
NASA	80NSSC18K1324	Tectonic and climatic controls on changing continental river networks	43.001	5,652	-
NASA	80NSSC20K1366	Determining the Structure of a Primitive Achondrite Parent Body Using Paleomagnetism	43.001	25,158	-
NASA	80NSSC20K1367	Effects of rotation and magnetic fields in the weakly conducting regions of gas giant planets.	43.001	25,532	-
NASA	80NSSC20K1510	Multiscale Dynamics of Magnetic Flux Tubes in the Heliosphere and Beyond	43.001	45,538	-
NASA	80NSSC21K1619	Inferring sub-ice-shelf melt rates using ICESat-2 altimetry and simple physical models	43.001	44,178	-
NASA	80NSSC21K1842	Evolution of the AGN Feedback Cycle in Galaxy Clusters	43.001	36,068	-
		Total for AL # 43.001		*182,125*	-
43.008					
NASA	80NSSC20M0048	Massachusetts Space Grant Proposed Opportunities in NASA STEM 2020-2024, Year 1 Augmentation	43.008	1,105,715	4,617
		Total for AL # 43.008		*1,105,715*	*4,617*
43.012					
NASA	80NSSC17K0077	Enhancing Docking and Manipulation Capability for Microgravity Robotic Free Flyers	43.012	44,505	-
NASA	80NSSC17K0081	2D Materials for Energy Harvesting and Sensing	43.012	992	-
NASA	80NSSC17K0082	Additive Manufacturing of Low Work Function Oxides for Spaceborne Thermionic Emission Applications	43.012	8,065	-
NASA	80NSSC17K0083	A Ground-Based Analog for CNS Exposure to Space Radiation: A System for Integrating Microbeam Technology and Neuronal Culture	43.012	33,762	-
NASA	80NSSC17K0090	Modeling Oxygen Production on Mars and Extension to a Human-Scale Mission	43.012	24,030	-
NASA	80NSSC18K1141	Optimal Trajectory Design for Innovative Low-Thrust Spacecraft Missions	43.012	71,319	-
NASA	80NSSC18K1182	Optical Technology for Exoplanet Characterization	43.012	77,446	-
NASA	80NSSC18K1185	Commercial Feasibility of In-Space Manufacturing Applications with Technology Development Targets	43.012	3,115	-

Appendix B
Massachusetts Institute of Technology
Federal Non-Research Support - On Campus
FY 2022 Expenditures

Federal Agency	Government Contract Number	Master Project Name	Assistance Listing #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NASA	80NSSC18K1186	Guidance and Control of Electrospray Thruster Actuated CubeSat	43.012	66,019	-
NASA	80NSSC19K1154	Calcium-based Battery Development for Space Technology Applications	43.012	67,710	-
NASA	80NSSC19K1173	Controlling and imaging electronic fluids for radiation-resistant high-speed logic in graphene (Student: Sarah Muschinske)	43.012	61,459	-
NASA	80NSSC20K1178	Development and Optimization of a Bimodal Ion-Chemical Thruster System Using Novel Ionic Liquid Monopropellants	43.012	69,186	-
NASA	80NSSC20K1180	Bayesian Uncertainty Propagation Using Multi-Fidelity Subsystem Models in Design of Precision-Pointed Space Telescopes	43.012	65,983	-
NASA	80NSSC20K1201	A diamond nanophotonics platform for quantum communication with multiplexed qubit repeaters	43.012	60,274	-
NASA	80NSSC21K1254	Applying a Model-Based Systems Engineering Approach to Simulation and Testing for Ground and Space Applications	43.012	62,708	-
NASA	80NSSC21K1277	Reconfigurable Single Photon Detecting System for Small Satellites	43.012	63,295	-
NASA	80NSSC21K1301	Computationally-Efficient Large Divert Guidance	43.012	50,000	-
NASA	80NSSC21K1303	Distributed Collaboration and Coordination for Planetary Exploration Mission Support	43.012	55,616	-
		Total for AL # 43.012		*885,484*	-
43.U07					
NASA	80NSSC21P1904	NASA Participation in MIT Innovation Lab	43.U07	60,000	-
		Total for AL # 43.U07		*60,000*	-
		Total for National Aeronautics and Space Administration		**2,233,324**	**4,617**
		TOTAL for National Aeronautics and Space Administration		**2,233,324**	**4,617**
		TOTAL Federal Non-Research Support - On Campus		**15,317,350**	**1,184,654**

Appendix C
Massachusetts Institute of Technology
Federal Non-Research Support - Passthrough - On Campus
FY 2022 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						
SUNY: AIM Photonics						
DEPARTMENT OF DEFENSE	2749052	AGMT. DTD. 3/22/2016	IP-IMI	12.800	159,768	-
DEPARTMENT OF DEFENSE	2749489	2021-01	MITE-ARG (Massachusetts Integrated photonics Technology Engagement - Alternate Reality Game)	12.800	80,863	-
DEPARTMENT OF DEFENSE	2749490	2021-02	Integrated Photonics Devices for Application-Specific Design	12.800	68,728	-
			Total for SUNY: AIM Photonics		**309,360**	**-**
Research Foundation of SUNY-Buffalo						
DEPARTMENT OF DEFENSE	2749638	AGREEMENT DATED 1-1-2021	AIM Phase II	12.800	149,500	-
			Total for Research Foundation of SUNY-Buffalo		**149,500**	**-**
Lincoln Laboratory						
DEPARTMENT OF DEFENSE	2749335	PO 7000513402	Support of the MIT Security Studies Program	12.U55	59,397	-
			Total for Lincoln Laboratory		**59,397**	**-**
American Society/Engineering Education						
DEPARTMENT OF DEFENSE	2291100	LETTER DATED 8/11/99	NDSEG Fellowship Program	12.300	3,273,738	-
			Total for American Society/Engineering Education		**3,273,738**	**-**
Florida State University						
DEPARTMENT OF DEFENSE	2748751	R02117	A SUMMER PROGRAM TO INTRODUCE ENGINEER RESEARCH TO UNDERGRADUATES	12.300	2,155	-
			Total for Florida State University		**2,155**	**-**
Advanced Functional Fabrics of America (AFFOA)						
DEPARTMENT OF DEFENSE	2749285	EXHIBIT 1-A	Shape-Shifting Climate-Adaptive Garments	12.U54	8,374	-
			Total for Advanced Functional Fabrics of America (AFFOA)		**8,374**	**-**
National Center for the Advancement of STEM Education						
DEPARTMENT OF DEFENSE	2749281	NP000	Plan to stand up an Open edX platform and develop a policy study	12.560	575,567	-
			Total for National Center for the Advancement of STEM Education		**575,567**	**-**
Draper Laboratory Incorporated						

Appendix C
Massachusetts Institute of Technology
Federal Non-Research Support - Passthrough - On Campus
FY 2022 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	2389477	PO001-0001054392	Draper Fellow Reporting Parent FY19/20	12.U01	0	-
DEPARTMENT OF DEFENSE	2389502	PO001-0001054619	Draper Fellow Reporting Parent FY19/20	12.U03	-13	-
DEPARTMENT OF DEFENSE	2389489	PO001-000105617	Draper Fellow Reporting Parent FY19/20	12.U02	0	-
DEPARTMENT OF DEFENSE	2389606	PO001-0001058252	Draper Fellow Reporting Parent FY20/21	12.U06	0	-
DEPARTMENT OF DEFENSE	2389612	PO001-0001058272	Draper Fellow Reporting Parent FY20/21	12.U07	-400	-
DEPARTMENT OF DEFENSE	2389744	PO001-0001061954	Draper Fellow Reporting Parent FY21/22	12.U19	14,549	-
DEPARTMENT OF DEFENSE	2389735	PO001-0001061977	Draper Fellow Reporting Parent FY21/22	12.U12	55,510	-
DEPARTMENT OF DEFENSE	2389734	PO001-0001061983	Draper Fellow Reporting Parent FY21/22	12.U11	71,942	-
DEPARTMENT OF DEFENSE	2389746	PO001-0001061990	Draper Fellow Reporting Parent FY21/22	12.U20	73,970	-
DEPARTMENT OF DEFENSE	2389737	PO001-0001061991	Draper Fellow Reporting Parent FY21/22	12.U14	69,647	-
DEPARTMENT OF DEFENSE	2389736	PO001-0001061993	Draper Fellow Reporting Parent FY21/22	12.U13	65,563	-
DEPARTMENT OF DEFENSE	2389741	PO001-0001061994	Draper Fellow Reporting Parent FY21/22	12.U18	71,624	-
DEPARTMENT OF DEFENSE	2389738	PO001-0001062000	Draper Fellow Reporting Parent FY21/22	12.U15	69,647	-
DEPARTMENT OF DEFENSE	2389739	PO001-0001062004	Draper Fellow Reporting Parent FY21/22	12.U16	65,630	-
DEPARTMENT OF DEFENSE	2389740	PO001-0001062006	Draper Fellow Reporting Parent FY21/22	12.U17	71,343	-
DEPARTMENT OF DEFENSE	2389756	PO001-0001062011	Draper Fellow Reporting Parent FY21/22	12.U23	66,515	-
DEPARTMENT OF DEFENSE	2389755	PO001-0001062045	Draper Fellow Reporting Parent FY21/22	12.U22	64,902	-
DEPARTMENT OF DEFENSE	2389759	PO001-0001062081	Draper Fellow Reporting Parent FY21/22	12.U25	38,817	-
DEPARTMENT OF DEFENSE	2389754	PO001-0001062111	Draper Fellow Reporting Parent FY21/22	12.U21	95,427	-
DEPARTMENT OF DEFENSE	2389758	PO001-0001062145	Draper Fellow Reporting Parent FY21/22	12.U24	67,092	-
DEPARTMENT OF DEFENSE	2389776	PO001-0001062673	Draper Fellow Reporting Parent FY21/22	12.U30	66,722	-
DEPARTMENT OF DEFENSE	2389771	PO001-0001062675	Draper Fellow Reporting Parent FY21/22	12.U27	61,973	-
DEPARTMENT OF DEFENSE	2389778	PO001-0001062677	Draper Fellow Reporting Parent FY21/22	12.U32	55,510	-
DEPARTMENT OF DEFENSE	2389803	PO001-0001062679	Draper Fellow Reporting Parent FY21/22	12.U33	55,510	-
DEPARTMENT OF DEFENSE	2389777	PO001-0001062681	Draper Fellow Reporting Parent FY21/22	12.U31	60,610	-
DEPARTMENT OF DEFENSE	2389772	PO001-0001062683	Draper Fellow Reporting Parent FY21/22	12.U28	64,363	-
DEPARTMENT OF DEFENSE	2389773	PO001-0001062688	Draper Fellow Reporting Parent FY21/22	12.U29	58,939	-
DEPARTMENT OF DEFENSE	2389814	PO001-0001063189	Draper Fellow Reporting Parent FY21/22	12.U34	58,601	-
DEPARTMENT OF DEFENSE	2389815	PO001-0001063211	Draper Fellow Reporting Parent FY21/22	12.U35	1,270	-
DEPARTMENT OF DEFENSE	2389821	PO001-0001063213	Draper Fellow Reporting Parent FY21/22	12.U36	58,937	-
DEPARTMENT OF DEFENSE	2389892	PO001-0001065384	Draper Fellow Reporting Parent FY22/23	12.U50	4,169	-
DEPARTMENT OF DEFENSE	2389888	PO001-0001065385	Draper Fellow Reporting Parent FY22/23	12.U48	4,169	-
DEPARTMENT OF DEFENSE	2389880	PO001-0001065388	Draper Fellow Reporting Parent FY22/23	12.U42	4,378	-
DEPARTMENT OF DEFENSE	2389882	PO001-0001065445	Draper Fellow Reporting Parent FY22/23	12.U44	3,462	-

Appendix C
Massachusetts Institute of Technology
Federal Non-Research Support - Passthrough - On Campus
FY 2022 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	2389881	PO001-0001065449	Draper Fellow Reporting Parent FY22/23	12.U43	4,169	-
DEPARTMENT OF DEFENSE	2389884	PO001-0001065450	Draper Fellow Reporting Parent FY22/23	12.U46	3,808	-
DEPARTMENT OF DEFENSE	2389883	PO001-0001065453	Draper Fellow Reporting Parent FY22/23	12.U45	4,348	-
DEPARTMENT OF DEFENSE	2389886	PO001-0001065469	Draper Fellow Reporting Parent FY22/23	12.U47	4,169	-
DEPARTMENT OF DEFENSE	2389898	PO001-0001065501	Draper Fellow Reporting Parent FY22/23	12.U52	4,169	-
DEPARTMENT OF DEFENSE	2389890	PO001-0001065541	Draper Fellow Reporting Parent FY22/23	12.U49	4,850	-
DEPARTMENT OF DEFENSE	2389894	PO001-0001065544	Draper Fellow Reporting Parent FY22/23	12.U51	3,808	-
DEPARTMENT OF DEFENSE	2389899	PO001-0001065625	Draper Fellow Reporting Parent FY22/23	12.U53	3,880	-
			Total for Draper Laboratory Incorporated		**1,553,579**	**-**
			TOTAL for Department of Defense		**5,931,671**	**-**

Appendix C
Massachusetts Institute of Technology
Federal Non-Research Support - Passthrough - On Campus
FY 2022 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	2749354	AGREEMENT EFFECTIVE 5/4/17	The National Institute for Innovation in Manufacturing Biopharmaceuticals (NIIMBL) - Memberships	11.619	50,910	-
DEPARTMENT OF COMMERCE	2748701	PC1.0-007	NIIMBL Projects	11.619	15	-
DEPARTMENT OF COMMERCE	2749515	PC4.1-206, PO# UDR0000041	NIIMBL Projects	11.619	126,268	-
		Total for U Delaware: National Institute for Innovation in Manufacturing Biopharmaceuticals (NIIMBL)			**177,192**	**-**
			TOTAL for Department of Commerce		**177,192**	**-**

Appendix C
Massachusetts Institute of Technology
Federal Non-Research Support - Passthrough - On Campus
FY 2022 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 ENERGY						
Jefferson Science Associates, LLC						
DEPARTMENT OF ENERGY	2389702	AGRMT DATED 09/14/20	Absolute Cross Section Measurement of Deeply Virtual Pion Production - JSA Grad Fellowship - Robert Johnston	81.U04	0	-
DEPARTMENT OF ENERGY	2389703	AWD LTR DTD 9/14/2020	DVCS Cross Section Measurement with a Hydrogen Target - JSA Grad Fellowship - Sangbaek Lee	81.U05	11,000	-
			Total for Jefferson Science Associates, LLC		**11,000**	**-**
Georgia Institute of Technology						
DEPARTMENT OF ENERGY	2749544	AWD-000372-G2	CONSORTIUM FOR ENABLING TECHNOLOGIES & INNOVATION (ETI)	81.113	5,000	-
			Total for Georgia Institute of Technology		**5,000**	**-**
Battelle Energy Alliance, LLC						
DEPARTMENT OF ENERGY	2749500	CONTRACT 00112583/RELEASE 00003	INL-NUC Collaboration Activities at Massachusetts Institute of Technology	81.U07	125,882	-
DEPARTMENT OF ENERGY	2749246	RELEASE 00003/CONTRACT 00112583	INL-NUC Collaboration Activities at Massachusetts Institute of Technology	81.U06	119,412	-
			Total for Battelle Energy Alliance, LLC		**245,295**	**-**
			TOTAL for Department of Energy		**261,295**	**-**

Appendix C
Massachusetts Institute of Technology
Federal Non-Research Support - Passthrough - On Campus
FY 2022 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
MISCELLANEOUS FEDERAL GOVT						
Institute of International Education, Inc.						
MISCELLANEOUS FEDERAL GOVT	2389825	3000225139	Hubert H. Humphrey Fellowship Program (SPURS) 2021-2022	19.010	24,098	-
MISCELLANEOUS FEDERAL GOVT	2389823	3000228844	Hubert H. Humphrey Fellowship Program (SPURS) 2021-2022	19.010	196,312	-
MISCELLANEOUS FEDERAL GOVT	2389685	SUBAWARD DATED 7/1/2020	Hubert H. Humphrey Fellowship Program (SPURS) 2020-2021	19.010	57,097	-
			Total for Institute of International Education, Inc.		**277,507**	**-**
Ashesi University						
MISCELLANEOUS FEDERAL GOVT	2748627	AGMT DTD 9/1/18	Accelerating Local Potential	98.U01	27,174	-
			Total for Ashesi University		**27,174**	**-**
Washington Business Dynamics, LLC						
MISCELLANEOUS FEDERAL GOVT	2749567	AGRMT DTD 9/8/2021	Catalyst Spring Program 2022	64.U02	162,130	-
			Total for Washington Business Dynamics, LLC		**162,130**	**-**
Atlas Research LLC						
MISCELLANEOUS FEDERAL GOVT	2749268	SC-HCATS-U-IDIQ-MIT	Catalyst Spring Program 2021	64.U01	102,664	-
			Total for Atlas Research LLC		**102,664**	**-**
Aspen Network for Development Entrepreneurs, The Aspen Institute						
MISCELLANEOUS FEDERAL GOVT	2749261	SUBAWARD DATED MARCH 4, 2021 UNDER COOP AGMT 7200AA19CA00016	Scale-up Financing-Inclusive acceleration to close participation, knowledge and connectivity gaps for women-led SGB's in South Asia	98.001	77,623	-
			Total for Aspen Network for Development Entrepreneurs, The Aspen Institute		**77,623**	**-**
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	4,522	-
			Total for American Council on Education		**4,522**	**-**
			TOTAL for Miscellaneous Federal Govt		**651,620**	**-**

Appendix C
Massachusetts Institute of Technology
Federal Non-Research Support - Passthrough - On Campus
FY 2022 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 AERONAUTICS AND SPACE ADMINISTRATION						
Space Telescope Science Institute						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	2389368	HST-HF2-51410.001-A	Fundamental Physics in the Era of Gravitational Wave Astronomy (Fellow: Maximiliano Isi)	43.U03	18,061	-
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.U02	93,282	-
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	93,347	-
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.U06	109,638	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	2389707	HST-HF2-51470.001-A	Dark sectors in highredshift observations (HF2-51470; Fellow: Katelin Schutz)	43.U05	9,060	-
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	79,198	-
			Total for Space Telescope Science Institute		**402,587**	**-**
Baylor College of Medicine						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	2748341	PO# 7000000554	Dean of Science Education	43.003	28,375	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	2389522	PO# 7000000937	In Situ Expression Analysis of Therapeutic Microbes with Gastrointestinal Devices	43.003	-111	-
			Total for Baylor College of Medicine		**28,264**	**-**
CalTech - Jet Propulsion Lab						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	2749243	RSA NO. 1657148	Concurrent Engineering & Lifecycle Product Development: Research Opportunities for the next Generation of Space Systems Engineers	43.001	-5,050	-
			Total for CalTech - Jet Propulsion Lab		**-5,050**	**-**
			TOTAL for National Aeronautics and Space Administration		**425,801**	**-**
			TOTAL Federal Non-Research Support - Passthrough - On Campus		**$7,447,578**	**-**

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, 2022, 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 7, 2022, 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 29, 2023.

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 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 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 7, 2022, 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 29, 2023.

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, 2022. 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, 2022.

Basis for Opinion on Each Major Federal Program

We conducted our audit of compliance in accordance with auditing standards generally accepted in the United States of America (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.

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.

Boston, Massachusetts
March 29, 2023

Massachusetts Institute of Technology
Schedule of Findings and Questioned Costs
Year Ended June 30, 2022

Section I Summary of Auditors' 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	
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

AL Number	**Name of Federal Program or Cluster**
Various	Research & Development Cluster
84.425E	COVID 19: Higher Education Emergency Relief Fund II – Student Aid under the Coronavirus Response and Relief Supplement Appropriate Act, 2021

Dollar threshold used to distinguish between Type A and Type B programs	$5,137,089	
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, 2022

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