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, 2020

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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, 2020

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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 Consolidated Financial Statements

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, 2020 and 2019, and the related consolidated statement of activities for the year ended June 30, 2020 and the consolidated statements of cash flows for the years ended June 30, 2020 and 2019, and the related notes to the financial statements.

Management's Responsibility 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; this includes 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.

Auditors' Responsibility

Our responsibility is to express an opinion on the consolidated financial statements based on our audits. We conducted our audits 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. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the consolidated financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the consolidated financial statements. The procedures selected depend on our judgment, including the assessment of the risks of material misstatement of the consolidated financial statements, whether due to fraud or error. In making those risk assessments, we consider internal control relevant to the Institute's preparation and fair presentation of the consolidated financial statements 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, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Opinion

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the consolidated financial position of the Massachusetts Institute of Technology and its subsidiaries as of June 30, 2020 and 2019, the changes in their net assets for the year ended June 30, 2020 and their cash flows for the years ended June 30, 2020 and 2019 in accordance with accounting principles generally accepted in the United States of America.

Emphasis of Matter

As discussed in Note A to the consolidated financial statements, the Institute changed the manner in which it presents restricted cash and certain other cash balances within the statements of cash flows. Our opinion is not modified with respect to this matter.

Other Matters

We previously audited the consolidated statement of financial position as of June 30, 2019, and the related consolidated statements of activities and of cash flows for the year then ended (the statement of activities is not presented herein), and in our report dated September 13, 2019, we expressed an unmodified opinion on those consolidated financial statements. In our opinion, the information set forth in the accompanying summarized financial information as of June 30, 2019 and for the year then ended, is consistent, in all material respects, with the audited consolidated financial statements from which it has been derived.

Other 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, 2020 and schedule of financial responsibility as of and for the year ended June 30, 2020 are presented for purposes of additional analysis as required by Title 2 U.S. *Code of Federal Regulations* Part 200, *Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards* (Uniform Guidance) and the Department of Education, respectively, and are not a required part of the consolidated financial statements. The 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 schedule of financial responsibility 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 September 11, 2020, except with respect to Note K to the consolidated financial statements and the opinion on the supplemental schedule of financial responsibility, as to which the date is March 18, 2021, on our consideration 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, 2020. 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
September 11, 2020, except with respect to Note K to the consolidated financial statements and the opinion on the supplemental schedule of financial responsibility, as to which the date is March 18, 2021

MASSACHUSETTS INSTITUTE OF TECHNOLOGY
CONSOLIDATED STATEMENTS OF FINANCIAL POSITION
as of June 30, 2020 and 2019

(in thousands of dollars)	2020	2019
Assets		
Cash	$ 572,448	$ 405,678
Accounts receivable, net	262,986	283,196
Pledges receivable, net, at fair value	620,340	583,383
Contracts in progress, principally US government	99,886	103,307
Deferred charges and other assets	186,360	201,131
Investments, at fair value	24,364,668	22,083,156
Net asset position - retiree welfare benefit plan	92,073	97,716
Land, buildings, and equipment (at cost of $6,334,817 for June 2020; $5,878,485 for June 2019), net of accumulated depreciation	4,306,769	3,993,253
Total assets	**$ 30,505,530**	**$ 27,750,820**
Liabilities and Net Assets		
Liabilities:		
Accounts payable, accruals, and other liabilities	$ 646,072	$ 596,255
Deferred revenue and other credits	206,154	157,372
Advance payments	457,567	440,110
Liabilities due under life income fund agreements, at fair value	232,921	209,611
Borrowings, net of unamortized issuance costs	4,194,017	3,168,422
Net liability position - defined benefit pension plan	551,868	410,045
Total liabilities	**$ 6,288,599**	**$ 4,981,815**
Net Assets:		
Without donor restrictions	9,582,028	9,175,946
With donor restrictions	14,634,903	13,593,059
Total net assets	**$ 24,216,931**	**$ 22,769,005**
Total liabilities and net assets	**$ 30,505,530**	**$ 27,750,820**

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, 2020
(with summarized financial information for the year ended June 30, 2019)

(in thousands of dollars)	2020 Without Donor Restrictions	2020 With Donor Restrictions	Total 2020	Total 2019
Operating Revenues				
Tuition and similar revenues, exclusive of financial aid of $387,338 in 2020 and $365,954 in 2019	$ 374,669	$ -	$ 374,669	$ 383,736
Research revenues:				
Campus	740,592	-	740,592	728,153
Lincoln	1,090,618	-	1,090,618	1,059,384
SMART	33,050	-	33,050	45,300
Total research revenues	1,864,260	-	1,864,260	1,832,837
Contributions	359,783	23,578	383,361	405,538
Fees and services	212,768	-	212,768	216,619
Other programs	87,711	-	87,711	79,632
Support from investments:				
Endowment	737,202	-	737,202	699,333
Other investments	174,672	-	174,672	176,095
Total support from investments	911,874	-	911,874	875,428
Auxiliary enterprises	115,981	-	115,981	138,132
Total revenues	$ 3,927,046	$ 23,578	$ 3,950,624	$ 3,931,922
Operating Expenses				
Salaries and wages	$ 1,593,091	$ -	$ 1,593,091	$ 1,527,709
Employee benefits	537,409	-	537,409	516,790
Supplies and services	1,066,952	-	1,066,952	1,069,183
Subrecipient agreements	164,095	-	164,095	177,168
Utilities, rent, and repairs	211,701	-	211,701	229,755
Total expenses before depreciation and interest	3,573,248	-	3,573,248	3,520,605
Results of operations before depreciation and interest	353,798	23,578	377,376	411,317
Depreciation	201,659	-	201,659	198,242
Interest expense	116,777	-	116,777	125,492
Results of operations	35,362	23,578	58,940	87,583
Net periodic benefit (cost) income other than service cost	128,066	-	128,066	133,542
Net results	$ 163,428	$ 23,578	$ 187,006	$ 221,125
Other Revenues, Gains, and Losses				
Contributions	$ -	$ 140,390	$ 140,390	$ 196,558
Net return on investments	804,828	1,337,827	2,142,655	1,970,892
Distribution of accumulated investment gains	(365,207)	(546,667)	(911,874)	(875,428)
Other changes	13,702	(1,184)	12,518	148,973
Postretirement plan changes other than net periodic benefit cost (income)	(122,769)	-	(122,769)	(409,896)
Net asset reclassifications and transfers	(87,900)	87,900	-	-
Total other revenue, gains, and losses	242,654	1,018,266	1,260,920	1,031,099
Increase in net assets	406,082	1,041,844	1,447,926	1,252,224
Net assets at the beginning of the year	9,175,946	13,593,059	22,769,005	21,516,781
Net assets at the end of the year	**$ 9,582,028**	**$ 14,634,903**	**$ 24,216,931**	**$ 22,769,005**

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, 2020 and 2019

(in thousands of dollars)	2020	2019
Cash Flow from Operating Activities		
Increase in net assets	$ 1,447,926	$ 1,252,224
Adjustments to reconcile change in net assets to net cash used in operating activities:		
Net gain on investments	(2,149,914)	(1,776,949)
Change in retirement plan asset, net of accrued benefit liability	147,466	408,956
Depreciation	201,659	198,242
Net gain on life income funds	(13,464)	(14,960)
Amortization of bond premiums and discounts and other adjustments	(2,315)	(17,508)
Change in operating assets and liabilities:		
Pledges receivable	(36,957)	(23,241)
Accounts receivable	15,492	(23,705)
Contracts in progress	3,421	(4,386)
Deferred charges and other assets	15,359	(15,116)
Accounts payable, accruals, and other liabilities, excluding building and equipment accruals	51,065	51,385
Liabilities due under life income fund agreements	43,057	40,090
Deferred revenue and other credits	57,756	34,470
Advance payments	17,457	(9,120)
Reclassification of donated securities	(9,848)	(43,286)
Reclassification of investment income for restricted purposes	(5,028)	(4,404)
Reclassification of contributions restricted for long-term investment	(142,683)	(185,885)
Net cash and restricted cash used in operating activities	(359,551)	(133,193)
Cash Flow from Investing Activities		
Purchase of land, buildings, and equipment	(516,950)	(495,164)
Purchases of investments	(8,227,259)	(8,068,067)
Proceeds from sale of investments	7,986,183	8,693,127
Student notes issued	(5,143)	(5,038)
Collections from student notes	9,586	10,478
Net cash and restricted cash (used in) provided by investing activities	(753,583)	135,336
Cash Flow from Financing Activities		
Proceeds from sale of donated securities restricted for endowment	9,848	43,286
Investment income for restricted purposes	5,028	4,404
Contributions restricted for long-term investment	142,683	185,885
Payments to beneficiaries of life income funds	(19,747)	(17,928)
Proceeds from borrowings	1,105,742	-
Repayment of borrowings	(77,030)	(89,474)
Increase (decrease) in government advances for student loans	(8,974)	338
Net cash and restricted cash provided by financing activities	1,157,550	126,511
Net increase in cash and restricted cash	44,416	128,654
Cash and restricted cash at the beginning of the year	984,542	855,888
Cash and restricted cash at the end of the year	**$ 1,028,958**	**$ 984,542**

Supplemental Information on Cash and Restricted Cash:		
Cash as shown in the statements of financial position	$ 572,448	$ 405,678
Cash and restricted cash included in Investments (see Note B)	443,876	566,818
Restricted cash included in Other Assets (see Note G)	12,634	12,046
Total cash and restricted cash as shown on the Consolidated Statements of Cash Flows	**$ 1,028,958**	**$ 984,542**

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 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. The categories are 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 where donors have specified the purpose for which the net assets are to be spent, or 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 Statement of Activities. These amounts are released back to net assets without donor restrictions, through the net asset reclassification 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, research, contributions (expendable gifts and pledge payments), fees and services, other programs, support from investments, and auxiliary revenue.

Net results, as presented in MIT's 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) income that serve as a basis for cost recovery.

The 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) 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 in net results.

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, 2020, there are no significant uncertain positions taken or expected to be taken.

Cash

Certain cash balances, totaling $82.6 million and $65.4 million as of June 30, 2020 and 2019, respectively, are restricted for use under certain sponsored research agreements or are held on behalf of a related party. These amounts are included within the cash line in the Consolidated Statements of Financial Position.

The Institute had approximately $561.7 million and $393.5 million as of June 30, 2020 and 2019, 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 $59.4 million and $49.1 million during 2020 and 2019, respectively. Land, buildings, and equipment as of June 30, 2020 and 2019 are shown in Table 1 below.

TABLE 1. LAND, BUILDINGS, AND EQUIPMENT

(in thousands of dollars)	2020	2019
Land	$ 107,557	$ 107,557
Land improvements	84,414	84,374
Educational buildings	4,787,262	4,682,090
Equipment	392,726	377,377
Software	52,757	60,408
Total	5,424,716	5,311,806
Less: accumulated depreciation	(2,028,048)	(1,885,232)
Construction in progress	909,979	562,740
Software projects in progress	122	3,939
Net land, buildings, and equipment	**$ 4,306,769**	**$ 3,993,253**

Depreciation expense was $201.7 million in 2020 and $198.2 million in 2019. Net interest expense of $31.2 million and $17.9 million was capitalized during 2020 and 2019, respectively, in connection with MIT's construction projects.

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)	2020	2019
Undergraduate and graduate programs*	$ 306,287	$ 303,593
Executive and continuing education programs	68,382	80,143
Tuition and similar revenues	**$ 374,669**	**$ 383,736**

** Undergraduate and graduate programs at published rates totaled $693,625 and $669,547 in 2020 and 2019, respectively, and financial aid applied to undergraduate and graduate programs was $387,338 and $365,954 in 2020 and 2019, 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

	2020			2019		
(in thousands of dollars)	Institute Sources	External Sponsors	Total Student Support	Institute Sources	External Sponsors	Total Student Support
Undergraduate tuition support	$ 138,041	$ 19,503	$ 157,544	$ 128,365	$ 18,956	$ 147,321
Graduate tuition support	249,297	62,963	312,260	237,589	63,437	301,026
Fellowship stipends	29,982	15,098	45,080	28,509	16,470	44,979
Student employment	51,251	85,676	136,927	48,978	83,322	132,300
Total	**$ 468,571**	**$ 183,240**	**$ 651,811**	**$ 443,441**	**$ 182,185**	**$ 625,626**

Research Revenues and Advance Payments

Direct and indirect categories of research revenues are shown in Table 4 below.

TABLE 4. RESEARCH REVENUES

(in thousands of dollars)	2020	2019
Direct:		
Campus	$ 529,410	$ 538,350
Lincoln	1,042,970	1,017,344
SMART	32,635	44,980
Total direct	1,605,015	1,600,674
Total indirect	259,245	232,163
Total research revenues	**$ 1,864,260**	**$ 1,832,837**

Almost all of Lincoln and SMART research revenue, and a portion of Campus research revenue, come from exchange contracts. Research revenue related to exchange contracts is recognized as MIT fulfills the terms of the agreements, which generally span less than five years. Almost all of Campus research revenue, and a portion of Lincoln and SMART research revenue, comes from non-exchange contracts. Research revenue associated with non-exchange contracts is recognized as the qualified expenditures are incurred. Research activities at Lincoln, for which the contractual performance obligations have not yet been met, totaled $752.3 million and $757.4 million as of 2020 and 2019, respectively. Research activities on campus, which are contractually authorized by the sponsor, but for which costs have not yet been incurred, totaled $785.6 million and $763.9 million as of 2020 and 2019, 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. The majority of these payments relate to activity at Lincoln.

Indirect research revenue includes the portion of facilities and administrative expenses that is attributed to research activities. MIT has recorded reimbursement of indirect costs relating to sponsored research at negotiated fixed billing rates. The revenue generated by the negotiated rates is adjusted each fiscal year to reflect any variance between the negotiated fixed rates and rates based on actual cost. The actual cost rate is audited by the Defense Contract Audit Agency (DCAA), and a final fixed-rate agreement is signed by the US 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 $72.9 million and $116.9 million in 2020 and 2019, 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 $10.9 million in 2020 and $0.7 million in 2019. 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.

Fees and Services, Auxiliary Enterprises, and Other Programs

For the majority of the revenue streams included in fees and services and auxiliary enterprises, revenue is recognized over the period during which the services are provided. Other program revenue primarily consists of non-research sponsored activities. Other program revenue related to exchange contracts is recognized as MIT fulfills the terms of the agreements, which generally span less than five years, and other program revenue related to non-exchange contracts is recognized as the related costs are incurred. Non-research sponsored activities, for which the contractual performance obligations have not yet been met, totaled $211.4 million and $188.7 million as of June 30, 2020 and 2019, respectively.

Life Income Funds

MIT's life income fund agreements with donors consist primarily of irrevocable charitable gift annuities, pooled income funds, and charitable remainder trusts for which MIT serves as trustee. Assets are invested and payments are made to donors and other beneficiaries in accordance with the respective agreements. MIT records the assets that are associated with each life income fund at fair value and records as liabilities the present value of the estimated future payments at current interest rates to be made to the donors and beneficiaries under these agreements. Life income fund assets are included within investments in the Consolidated Statements of Financial Position. A rollforward of liabilities due under life income fund agreements is presented in Table 5 below.

TABLE 5. LIABILITIES DUE UNDER LIFE INCOME FUNDS

(in thousands of dollars)	2020	2019
Balance at the beginning of the year	$ 209,611	$ 187,449
Addition for new gifts	9,336	19,785
Termination and payments to beneficiaries	(23,029)	(22,682)
Net investment and actuarial gain	37,003	25,059
Balance at end of the year	**$ 232,921**	**$ 209,611**

Recently Adopted Accounting Standards

On July 1, 2019, the Institute adopted ASU 2016-15 - *Statement of Cash Flows* (Topic 230): *Classification of Certain Cash Receipts and Cash Payments*, which provides clarification on classifying a variety of activities within the Statements of Cash Flows. The adoption of this standard did not have a material impact to the Institute's Statements of Cash Flows.

On July 1, 2019, the Institute adopted ASU 2016-18 - *Statement of Cash Flows* (Topic 230): *Restricted Cash*. Under this new guidance, the Institute must identify all cash, cash equivalents, and amounts generally described as restricted cash or cash equivalents within the Statements of Financial Position for inclusion in the beginning and ending totals within the Statements of Cash Flows. The Institute has evaluated and applied this guidance on a retrospective basis and included all applicable cash balances within the Statements of Cash Flows.

On July 1, 2018, the Institute adopted ASU No. 2018-08 - *Not-for-Profit Entities* (Topic 958): *Clarifying the Scope and Accounting Guidance for Contributions Received and Contributions Made*, which amends the accounting guidance related to (1) evaluating whether transactions should be accounted for as contributions or exchange transactions, and (2) determining whether a contribution is conditional. The Institute has evaluated and applied the guidance on a modified prospective basis to the financial statements and added the required additional revenue disclosures. The adoption of this standard did not have a significant impact on the Institute's financial statements.

On July 1, 2018, the Institute adopted ASU No. 2014-09 - *Revenue from Contracts with Customers* (Topic 606), which outlines a single comprehensive standard for revenue recognition across all industries and supersedes most existing revenue recognition guidance. In addition, ASU 2014-09 requires new and enhanced disclosures. These changes do not have a material impact on MIT's financial statements.

On July 1, 2018, the Institute adopted ASU No. 2017-07 - *Compensation - Retirement Benefits* (Topic 715): *Improving the Presentation of Net Periodic Pension Cost and Net Periodic Postretirement Benefit Cost.* This guidance requires the service cost component of net periodic benefit costs for pension and other postretirement benefits to be presented as a component part of employee benefit expense. The other components of net periodic benefit costs, such as interest, expected return on plan assets, and amortization of net actuarial gains and losses, are required to be presented outside of operating activities. This change is reflected in the Institute's Statement of Activities.

On July 1, 2018, the Institute adopted ASU No. 2016-14 - *Not-for-Profit-Entities* (Topic 958): *Presentation of Financial Statements of Not-for-Profit-Entities.* This guidance is intended to improve the net asset classification requirements and the information presented in the financial statements and notes about a not-for-profit entity's liquidity, financial performance, and cash flows. The main provisions of this guidance include presentation of two classes of net assets versus the previously required three, and recognition of underwater endowment funds as a reduction in net assets with donor restrictions. The guidance also enhances disclosures for board-designated amounts, composition of net assets without donor restrictions, liquidity, and expenses by both their natural and functional classifications. These changes are reflected in the Institute's financial statements and footnotes.

On July 1, 2018, the Institute adopted ASU 2018-13 - *Fair Value Measurement* (Topic 820): *Disclosure Framework - Changes to the Disclosure Requirements for Fair Value Measurement.* Following this new guidance, the Institute is no longer required to disclose the amount of and reasons for transfers between Level 1 and Level 2 of the fair value hierarchy. Additionally, the Institute has added to the disclosures in the Level 3 Valuation Techniques table to include the weighted average of the unobservable inputs presented therein. Lastly, for investments in certain entities that calculate net asset value, the requirement to disclose the estimated period of time over which the underlying assets might be liquidated is modified to only require disclosure if the investee has communicated the timing to the Institute or announced the timing publicly.

Non-Cash Items

Non-cash transactions excluded from the Consolidated Statements of Cash Flows include $33.6 million and $34.9 million of accrued liabilities related to plant and equipment purchases as of June 30, 2020 and 2019, 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.

Reclassifications

Certain June 30, 2019, balances and amounts previously reported have been reclassified to conform to the June 30, 2020, presentation.

Subsequent Events

MIT has evaluated subsequent events through September 11, 2020, 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.

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, 2019, from which the summarized information was derived.

B. Investments

Investments are presented at fair value in accordance with GAAP. 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, evaluating the overall fairness and consistent application of the valuation policies, and performing specific reviews of certain reported valuations. The Committee performs due diligence over the external managers and, based on this review, substantiates the use of net asset value (NAV) as a practical expedient for estimates of fair value of its investments in 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.

Exchange and over-the-counter investment transactions are accounted for on the trade date. External fund investment transactions are accounted for on the settle date. Dividend income is recorded on the ex-dividend date. Interest and real estate income are recorded on the accrual basis of accounting. Realized gains and losses are recorded by MIT using the average cost method. For external funds, the realized gains and losses are recognized subsequent to the return of all capital invested.

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 Statements of Cash Flows.

MIT values its investments at fair value on the Consolidated Statements of Financial Position in accordance with GAAP which 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 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, which are observable, either directly or indirectly.

• Level 3 – Valuations based upon unobservable inputs that are significant to the overall fair value measurements.

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 6.

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

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.

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 investments 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 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.

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 and equity and industry risk premiums.

Significant increases or decreases in these inputs in isolation may result in a significantly lower or higher fair value measurement, respectively. Split-interest agreements are generally valued at the present value of the future distributions expected to be received over the term of the agreement.

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. Because the swaps and other over-the-counter derivative instruments have inputs that can usually be corroborated by observable market data, they are generally classified within Level 2. Derivatives usually include exchange traded derivatives, such as futures and options, and are generally classified within Level 1.

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 6. The liabilities associated with real estate investments were $331.3 million and $606.3 million in fiscal years 2020 and 2019, respectively. MIT's 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.

All net realized and unrealized gains and losses relating to financial instruments held by MIT shown in Table 6 are reflected in the Consolidated Statement of Activities. Cumulative unrealized gains related to Level 3 investments totaled $1,549.7 million and $1,766.6 million as of June 30, 2020 and 2019, respectively.

Certain investments in real estate, equities, and private 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. 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, certain 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. Generally, MIT has no discretion as to withdrawal with respect to its investments in 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.

Table 6 presents MIT's investments at fair value as of June 30, 2020 and 2019, respectively, grouped by the valuation hierarchy as defined earlier in this note.

TABLE 6. INVESTMENTS

(in thousands of dollars)	Level 1	Level 2	Level 3	NAV	Total Fair Value
Fiscal Year 2020					
Cash and short-term investments	$ 567,092	$ 19,562	$ -	$ -	$ 586,654
US Treasury	1,881,118	-	-	-	1,881,118
US government agency	-	268,878	-	-	268,878
Domestic bonds	13,877	406,895	113,689	-	534,461
Foreign bonds	1,533	77,371	-	-	78,904
Common equity:					
Domestic	28,101	1	234,413	-	262,515
Foreign	472,971	-	13,502	-	486,473
Equity:**					
Absolute return	-	-	-	3,829,785	3,829,785
Domestic	-	-	-	2,487,684	2,487,684
Foreign	-	-	-	3,983,707	3,983,707
Private	-	-	-	5,903,638	5,903,638
Real estate*	2,579	-	2,884,164	887,799	3,774,542
Real assets*	-	-	356	202,096	202,452
Split-interest agreements	-	-	78,322	-	78,322
Other	-	-	2,507	-	2,507
Derivatives	13	3,015	-	-	3,028
Investments, at fair value	**$ 2,967,284**	**$ 775,722**	**3,326,953**	**$ 17,294,709**	**$ 24,364,668**
Fiscal Year 2019					
Cash and short-term investments	$ 1,346,557	$ -	$ -	$ -	$ 1,346,557
US Treasury	1,303,772	-	-	-	1,303,772
US government agency	635	119,688	-	-	120,323
Domestic bonds	17,923	363,871	108,735	-	490,529
Foreign bonds	6,016	89,831	-	-	95,847
Common equity:					
Domestic	24,055	-	234,516	-	258,571
Foreign	361,095	-	-	-	361,095
Equity:**					
Absolute return	-	-	-	2,777,992	2,777,992
Domestic	-	-	-	2,184,287	2,184,287
Foreign	-	-	-	4,423,446	4,423,446
Private	-	-	-	4,973,152	4,973,152
Real estate*	39,903	-	2,377,201	850,402	3,267,506
Real assets*	-	-	384	315,515	315,899
Split-interest agreements	-	-	159,098	-	159,098
Other	26	-	2,923	-	2,949
Derivatives	(274)	2,407	-	-	2,133
Investments, at fair value	**$ 3,099,708**	**$ 575,797**	**$ 2,882,857**	**$ 15,524,794**	**$ 22,083,156**

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

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

Table 7 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, 2020 and 2019.

TABLE 7. 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 2020							
Domestic bonds	$ 108,735	$ -	$ -	$ 12,581	$ (7,627)	$ -	$ 113,689
Common equity:							
Domestic	234,516	1,198	(103)	-	(1,198)	-	234,413
Foreign	-	-	(1,179)	308	-	14,373	13,502
Real estate	2,377,201	447,658	(167,180)	664,959	(516,167)	77,693	2,884,164
Real assets	384	-	(28)	-	-	-	356
Split-interest agreements	159,098	190	(47,636)	-	(33,330)	-	78,322
Other	2,923	-	(691)	275	-	-	2,507
Investments, at fair value	**$ 2,882,857**	**$ 449,046**	**$ (216,817)**	**$ 678,123**	**$ (558,322)**	**$ 92,066**	**$ 3,326,953**
Fiscal Year 2019							
Domestic bonds	$ 104,896	$ -	$ -	$ 12,929	$ (9,090)	$ -	$ 108,735
Common equity:							
Domestic	202,840	2,366	3,273	27,131	(2,371)	1,277	234,516
Foreign	-	-	-	-	-	-	-
Real estate	2,385,683	697,689	(23,269)	759,841	(1,442,262)	(481)	2,377,201
Real assets	184	-	-	200	-	-	384
Split-interest agreements	156,494	(160)	2,407	11	(107)	453	159,098
Other	4,216	(71)	72	-	(1)	(1,293)	2,923
Investments, at fair value	**$ 2,854,313**	**$ 699,824**	**$ (17,517)**	**$ 800,112**	**$ (1,453,831)**	**$ (44)**	**$ 2,882,857**

Table 8 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, 2020 and 2019.

TABLE 8. LEVEL 3 VALUATION TECHNIQUES

(in thousands of dollars)	Fair Value as of June 30, 2020	Fair Value as of June 30, 2019	Valuation Technique	Unobservable Input	2020 Rates	2020 Weighted Average	2019 Rates
Real estate	$ 2,884,164	$ 2,377,201	Discounted cash flow	Discount rate	4.75-8.25%	6.66%	4.75-8.5%
			Capitalization rate	Capitalization rate	4.25-7.0%	5.32%	4.25-7.0%
Equity securities	191,663	191,766	Discounted cash flow	Discount rate	12.5%	12.5%	12.5%
Split-interest agreements	78,322	159,098	Net present value	Discount rate	0.85%	0.85%	3.1%
Real assets	356	384	Discounted cash flow	Discount rate	25.0%	25.0%	25.0%
Total assets	**$ 3,154,505**	**$ 2,728,449**					

Certain Level 3 assets totaling $172,448 and $154,408 as of June 30, 2020, and June 30, 2019, respectively, have been valued using unadjusted third party quotations and thus have been excluded from this table.

MIT has made investments in various long-lived partnerships, and in other cases has entered into contractual arrangements that may limit its ability to initiate redemptions due to notice periods, lock-ups, and gates. Details on estimated remaining term and current redemption terms and restrictions by asset class and type of investment are provided below in Table 9 as of June 30, 2020 and 2019.

TABLE 9. UNFUNDED COMMITMENTS

	2020		2019			
(in thousands of dollars)	Unfunded Commitments	Fair Value	Unfunded Commitments	Fair Value	Redemption Terms	Redemption Restrictions
Equity:						
Absolute return	$ 76,043	$ 3,829,785	$ 100,834	$ 2,777,992	Ranges from 30 days to 27 months[3]	30 to 365 days
Domestic[1]	51,757	2,487,684	23,152	2,184,287	Ranges from 2 months to 25 months[3]	30 to 90 days
Foreign[2]	-	3,983,707	51,675	4,423,446	Ranges from daily to 38 months[3]	0 to 180 days
Private	2,100,480	5,903,638	2,060,191	4,973,152	Closed-end funds not available for redemption	Not Applicable
Real estate	698,589	887,799	570,559	850,402	Closed-end funds not available for redemption	Not Applicable
Real assets	79,850	202,096	94,787	315,515	Ranges from 1 month to 4 months[3]	Lock up provision ranges from none to not redeemable
Total	**$ 3,006,719**	**$ 17,294,709**	**$ 2,901,198**	**$ 15,524,794**		

[1]Domestic funds include funds that have remaining lock-up provisions up to 36 months.

[2]Foreign funds include funds that have remaining lock-up provisions up to 33 months.

[3]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 its exposure to extreme market events and fluctuations in asset classes or currencies. Instruments utilized include fixed income futures, options on interest rate exchange agreements, credit default swaps, equity, and index options.

Total return swaps involve commitments to pay interest in exchange for a market-linked return based on notional amounts. To the extent the total return of the security or index underlying the transaction exceeds or falls short of the offsetting interest rate obligation, MIT will respectively receive a payment from or make a payment to the counterparty.

MIT's portfolio of interest rate caps and swaptions is designed for protection from significant increases in interest rates. An interest rate swaption is an option to enter into an interest rate swap agreement on pre-set terms at a future date. The purchaser and seller of the swaption agree on the expiration date, option type, exercise style, the terms of the underlying swap, and the type of settlement. As the expiration date approaches, the swaption holder can either notify the seller of its intention to exercise or let the option expire. An interest rate cap places a ceiling on a floating rate of interest on a specified notional principal amount for a specific term. The buyer of the cap uses the cap contract to limit its maximum interest rate exposure.

If the buyer's floating rate rises above the cap strike, the cap contract provides for payments from the seller to the buyer of the cap for the difference between the floating rate and the cap strike. If the floating rate remains below the cap strike, no payments are required. The cap buyer is required to pay an upfront fee or premium for the cap. The cap premium charged by the seller depends upon the market's assessment of the probability that rates will move through the cap strike over the time horizon of the deal. The payoff is expected to occur in extreme market conditions that would negatively impact MIT's other assets.

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. To manage the counterparty credit exposure of MIT's direct off-balance sheet financial instruments, 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. MIT enters into arrangements only with counterparties believed to be creditworthy. On June 30, 2020, 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.

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Table 10 summarizes the notional exposure and net ending fair value relative to the financial instruments with off-balance sheet risk as of June 30, 2020 and 2019, related to MIT's investment management.

TABLE 10. DERIVATIVE FINANCIAL INSTRUMENTS

(in thousands of dollars)	Notional Exposure Long	Notional Exposure Short	Net Ending Fair Value*	Net Gain (Loss)**
Fiscal Year 2020				
Fixed income and equity instruments:				
Fixed income futures	$ 19,100	$ (6,100)	$ 13	$ 2
Options on interest rate exchange agreements	839,000	-	1	(24)
Equity options	53	-	43	43
Total fixed income and equity instruments	858,153	(6,100)	57	21
Index instruments:				
Equity index swaps	-	(499,730)	(321)	(7,834)
Index options	299	-	3,407	397
Total index instruments	299	(499,730)	3,086	(7,437)
Credit instruments	-	(33,806)	(115)	587
2020 Total	**$ 858,452**	**$ (539,636)**	**$ 3,028**	**$ (6,829)**
Fiscal Year 2019				
Fixed income and equity instruments:				
Fixed income futures	$ 19,400	$ (10,400)	$ (274)	$ (1,021)
Options on interest rate exchange agreements	839,000	-	26	(1,061)
Equity options	-	-	-	-
Total fixed income and equity instruments	858,400	(10,400)	(248)	(2,082)
Index instruments:				
Equity index swaps	-	-	-	10,366
Index options	299	-	3,010	(343)
Total index instruments	299	-	3,010	10,023
Credit instruments	-	(31,130)	(629)	(276)
2019 Total	**$ 858,699**	**$ (41,530)**	**$ 2,133**	**$ 7,665**

** The fair value of all derivative financial instruments is reflected in investments at fair value in the Consolidated Statements of Financial Position.*

*** Net gain (loss) from the derivative financial instruments is located in other revenue, gains, and losses as net return on investments in the Consolidated Statement of Activities.*

Table 11 below provides further details related to MIT's credit instruments and summarizes the notional amounts and fair value of the purchased credit derivatives, classified by the expiration terms and the external credit ratings of the reference obligations as of June 30, 2020 and 2019.

The act of entering into a credit default swap contract is often referred to as "buying protection" or "selling protection" on an underlying reference obligation. The buyer is obligated to make premium payments to the seller over the term of the contract in return for a contingent payment upon the occurrence of a credit event with respect to the underlying obligation. The seller bears the obligation to "protect" the buyer in the event of default of the underlying issuer. Upon this event, the cash payment that the buyer receives is equal to the clearing price established by an auction of credit default swap claims, which is designed to approximate the recovery value of an unsecured claim on the issuer in default. The swap will last for a predetermined amount of time, typically five years. Upon termination of the swap, the buyer is no longer obligated to make any premium payments, and there is no other exchange of capital.

TABLE 11. CREDIT DERIVATIVE INSTRUMENTS

	Purchased Protection		
(in thousands of dollars)	Purchased Notional Amounts	Purchased Fair Value*	Notional Amounts < 5 Years to Maturity
Fiscal Year 2020			
Credit rating on underlying or index:			
A- to AAA	$ -	$ -	$ -
BBB- to BBB+	33,806	(115)	33,806
2020 Total	**$ 33,806**	**$ (115)**	**$ 33,806**
Fiscal Year 2019			
Credit rating on underlying or index:			
A- to AAA	$ 8,018	$ (226)	$ 8,018
BBB- to BBB+	23,112	(403)	23,112
2019 Total	**$ 31,130**	**$ (629)**	**$ 31,130**

** The fair value of all instruments is reflected in Investments, at fair value, in the Consolidated Statements of Financial Position.*

Counterparty risk may be partially or completely mitigated through master netting agreements included within an International Swaps and Derivatives Association, Inc. (ISDA) Master Agreement between MIT and each of its counterparties. The ISDA Master Agreement allows MIT to offset with the counterparty certain derivative instruments' payables and/or receivables with collateral held with/from each counterparty. To the extent amounts due from the counterparties are not fully collateralized, contractually or otherwise, there is the risk of loss from counterparty non-performance.

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 Master Agreements 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.

Tables 12 and 13 below summarize the effect that the offsetting of recognized assets and liabilities could have in the Consolidated Statements of Financial Position.

TABLE 12. OFFSETTING OF FINANCIAL AND DERIVATIVE ASSETS AND LIABILITIES

	2020			2019		
(in thousands of dollars)	Gross Amount	Cash/Treasury Collateral Posted (Received)	Net Amount	Gross Amount	Cash/Treasury Collateral Posted (Received)	Net Amount
Assets						
Derivatives	$ 3,645	$ (13,690)	$ (10,045)	$ 3,089	$ (3,344)	$ (255)
Repurchase agreements	12,217	(5,068)	7,149	201,176	(206,468)	(5,292)
Total assets	15,862	(18,758)	(2,896)	204,265	(209,812)	(5,547)
Liabilities						
Derivatives	(630)	260	(370)	(682)	420	(262)
Total liabilities	(630)	260	(370)	(682)	420	(262)
Total assets and liabilities, net	**$ 15,232**	**$ (18,498)**	**$ (3,266)**	**$ 203,583**	**$ (209,392)**	**$ (5,809)**

Table 13 below reconciles the net recognized assets and liabilities, as shown in Table 12, to derivative financial instruments as shown in Table 6.

TABLE 13. RECONCILIATION OF FINANCIAL AND DERIVATIVE ASSETS AND LIABILITIES

(in thousands of dollars)	2020	2019
Derivatives from Table 6	$ 3,028	$ 2,133
Repurchase agreements	12,217	201,176
Fixed income futures	(13)	274
Total	**$ 15,232**	**$ 203,583**

Table 14 below shows the time periods in which pledges receivable as of June 30, 2020 and 2019, are expected to be realized.

TABLE 14. PLEDGES RECEIVABLE

(in thousands of dollars)	2020	2019
In one year or less	$ 316,174	$ 304,760
Between one year and five years	274,365	259,400
More than five years	98,441	83,790
Less: allowance for unfulfilled pledges	(68,640)	(64,567)
Pledges receivable, net	**$ 620,340**	**$ 583,383**

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 are discounted in the amount of $28.5 million and $60.3 million in 2020 and 2019, respectively. The pledge discount rate ranges from fiscal year 2021 at 0.2 percent to fiscal year 2046 at 2.2 percent. MIT has gross conditional pledges, not recorded, for the promotion of education and research of $367.4 million and $390.8 million in 2020 and 2019, respectively. Conditional pledges are categorized as follows: fundraising challenge, building construction progress, foundation grants, and other. As of June 30, 2020, conditional pledge amounts are broken out as follows: fundraising challenge of $157.9 million, building construction progress of $137.7 million, foundation grants of $53.7 million, and other of $18.0 million. As of June 30, 2019, conditional pledge amounts are broken out as follows: fundraising challenge of $207.0 million, building construction progress of $141.1 million, foundation grants of $32.5 million, and other of $10.2 million.

Table 15 below is a rollforward of pledges receivable as of June 30, 2020 and 2019.

TABLE 15. ROLLFORWARD OF PLEDGES RECEIVABLE

(in thousands of dollars)	2020	2019
Balance at beginning of the year	$ 583,383	$ 560,142
New pledges	182,734	192,342
Pledge payments received	(173,452)	(186,960)
Change in pledge discount	31,751	20,420
Change in reserve for unfulfilled pledges	(4,076)	(2,561)
Balance at the end of the year	**$ 620,340**	**$ 583,383**

E. Liquidity

Table 16 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 16. LIQUIDITY AND AVAILABILITY OF RESOURCES

(in thousands of dollars)	2020	2019
Financial assets:		
Cash and liquid operating investments	$ 2,190,390	$ 1,369,292
Accounts and notes receivable	241,281	256,773
Contributions receivable	201,527	196,310
Investments appropriated for spending in the following year	832,304	804,041
Total financial assets available within one year	**$ 3,465,502**	**$ 2,626,416**

As part of MIT's liquidity management strategy, financial assets are structured to be available as its general expenditures, liabilities, and other obligations come due. MIT invests its operating liquidity, 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 $137.0 million and $387.0 million was undrawn at June 30, 2020 and 2019, respectively (see Note F for further details on the line of credit).

F. Net Borrowings

MIT's outstanding borrowings as of June 30, 2020 and 2019, are shown in Table 17 below.

TABLE 17. NET BORROWINGS

(in thousands of dollars / due dates are calendar based / par values as of 2020)	2020	2019
Educational plant		
Massachusetts Development Finance Agency (MassDevelopment)		
Series I, 5.20%, due 2028, par value $30,000	$ 30,432	$ 30,490
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	183,268	183,905
Series L, 5.0%-5.25%, due 2023-2033, par value $115,670	121,149	121,686
Series M, 5.25%, due 2020-2030, par value $91,705	95,816	107,181
Series P, 5.0%, due 2050, par value $136,055	209,850	-
Total MassDevelopment	890,515	693,262
Taxable		
Medium Term Notes Series A, 7.125% due 2026, par value $17,415	17,390	17,386
Medium Term Notes Series A, 7.25%, due 2096, par value $45,604	45,472	45,468
Taxable Bonds, Series B, 5.60%, due 2111, par value $750,000	747,176	747,145
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	522,410
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 $300,000	300,000	-
Taxable Bonds, Series G, 2.294% due 2051, par value 350,000	350,000	-
Notes payable to bank, variable rate, due 2023	113,034	113,034
Total Taxable	3,079,072	2,495,443
Total educational plant*	3,969,587	3,188,705
Notes payable to bank, variable rate, due 2023**	250,000	-
Total Other	250,000	-
Total borrowings	4,219,587	3,188,705
Unamortized bond issuance costs	(25,570)	(20,283)
Total borrowings net of unamortized debt issuance cost	**$ 4,194,017**	**$ 3,168,422**

** Proceeds from recent issuances were in the process of being invested in physical assets in 2019 and 2020 with unused balances held in investments.*

*** $250M of borrowing associated with line of credit is being held as a liquidity reserve in response to the COVID-19 crisis.*

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 18 below.

TABLE 18. DEBT PRINCIPAL OBLIGATIONS

(in thousands of dollars)	
2021	$ 11,180
2022	11,765
2023	55,500
2024	51,455
2025	12,385

MIT maintains a line of credit with a major financial institution for an aggregate commitment of $500.0 million. As of June 30, 2020, $137.0 million was available under this line of credit (see Table 17). The line of credit expires on March 31, 2023.

Cash paid for interest on long-term debt in 2020 and 2019 was $138.3 million and $147.8 million, respectively.

Variable interest rates as of June 30, 2020, are shown in Table 19 below.

TABLE 19. VARIABLE INTEREST RATES

(in thousands of dollars)	Amount	Rate
MassDevelopment Series J-1	$ 125,000	1.06%
MassDevelopment Series J-2	125,000	1.12%
Notes payable to bank	363,034	1.49%

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 or short-term investments from liquid operating investments 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 19 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. As of June 30, 2020 and 2019, the swap agreement had a fair value of ($61.0) million and ($48.8) million, respectively. The notional amount of this derivative is not recorded on MIT's Consolidated Statements of Financial Position. This swap had a net loss of $12.2 million and $10.8 million in 2020 and 2019, respectively.

G. Commitments and Contingencies

Federal Government Funding

MIT receives funding or reimbursement from federal 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), MIT's cognizant federal agency. MIT's indirect cost reimbursements are based on fixed rates with carryforward of under- or over-recoveries. As of June 30, 2020 and 2019, MIT recorded a net over-recovery of $10.2 million and $41.2 million, respectively.

The DCAA is responsible for auditing indirect charges to grants and contracts in support of ONR's negotiating responsibility. The Institute has had its rates audited by DCAA through 2018. Audits and negotiations for fiscal 2019 and forward are in progress. MIT's 2020 research revenues of $1,864.3 million include reimbursement of indirect costs of $259.2 million. In 2019, research revenues were $1,832.8 million, which included reimbursement of indirect costs of $232.2 million. Both years include adjustments for the variance between the indirect cost income determined by the fixed rates and actual costs.

Leases

As of June 30, 2020, there were no capital lease obligations. MIT has commitments under certain operating (rental) leases. Rent expense incurred under operating lease obligations was $35.1 million in both 2020 and 2019. Future minimum payments under operating leases are shown in Table 20 below.

TABLE 20. LEASE OBLIGATIONS

(in thousands of dollars)

2021	$	36,587
2022		39,694
2023		41,063
2024		38,384
2025		35,309

Assets Pledged as Collateral

As of June 30, 2020, $12.6 million of assets were pledged as collateral to various suppliers and government agencies. This is classified as restricted cash on the Consolidated Statement of Cash Flows.

Future Construction

As of June 30, 2020, MIT had contractual obligations of approximately $214.6 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. At June 30, 2020, these commitments included approximately $341.0 million of contractual obligations related to the Kendall Square Initiative, and $144.2 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 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. As of June 30, 2020, $90.0 million of costs related to the construction of the new facility have been incurred.

Related Entities

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.

General

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, 2020 and 2019, are shown in Table 21 below.

TABLE 21. EXPENDITURES BY FUNCTIONAL CLASSIFICATION

(in thousands of dollars)	General and administrative	Instruction and unsponsored research	Sponsored research	Total
Fiscal Year 2020				
Compensation	$ 483,320	$ 598,880	$ 920,234	$ 2,002,434
Other operating	144,288	427,602	659,157	1,231,047
Space related	127,983	194,865	207,289	530,137
2020 Total	**$ 755,591**	**$ 1,221,347**	**$ 1,786,680**	**$ 3,763,618**
Fiscal Year 2019				
Compensation	$ 472,471	$ 569,190	$ 869,296	$ 1,910,957
Other operating	137,741	447,433	661,177	1,246,351
Space related	158,830	191,753	202,906	553,489
2019 Total	**$ 769,042**	**$ 1,208,376**	**$ 1,733,379**	**$ 3,710,797**

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 2020 and 2019. MIT designated contributions of $1.5 million and $0.7 million to the retiree welfare benefit plan in 2020 and 2019, respectively.

For the defined contribution plan, the amount contributed and expenses recognized during 2020 and 2019 were $67.3 million and $64.0 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. The annual amortization shall not be less than the total amount of unrecognized gains and losses up to $1.0 million.

Components of Net Periodic Benefit Cost

Table 22 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, 2020 and 2019.

TABLE 22. COMPONENTS OF NET PERIODIC BENEFIT COST

	Defined Benefit Pension Plan		Retiree Welfare Benefit Plan	
(in thousands of dollars)	2020	2019	2020	2019
Components of net periodic benefit cost recognized in net results:				
Service cost	$ 123,255	$ 106,779	$ 30,988	$ 26,491
Interest cost	169,792	173,331	24,309	25,761
Expected return on plan assets	(298,900)	(285,552)	(50,605)	(47,783)
Amortization of net actuarial loss (gain)	30,285	4,237	(1,000)	(1,000)
Amortization of prior service cost (credit)	265	265	(2,212)	(2,801)
Net periodic benefit cost (income) recognized in net results	24,697	(940)	1,480	668
Other amounts recognized in other revenues, gains, and losses				
Current year actuarial loss	147,676	387,429	2,431	23,168
Amortization of actuarial (loss) gain	(30,285)	(4,237)	1,000	1,000
Amortization of prior service (cost) credit	(265)	(265)	2,212	2,801
Total other amounts recognized in other revenues, gains, and losses	117,126	382,927	5,643	26,969
Total recognized	**$ 141,823**	**$ 381,987**	**$ 7,123**	**$ 27,637**

The estimated net actuarial loss and prior service cost for the defined benefit pension plan that will be amortized from net assets without donor restrictions into net periodic benefit cost during the next fiscal year are $44.5 million and $0.3 million, respectively. The estimated net actuarial gain and prior service credit for the retiree welfare benefit plan that will be amortized from net assets without donor restrictions into net periodic benefit cost during the next fiscal year are $1.0 million and zero, respectively.

Cumulative amounts recognized in net assets without donor restrictions are summarized in Table 23 below for the years ended June 30, 2020 and 2019.

TABLE 23. CUMULATIVE AMOUNTS RECOGNIZED IN NET ASSETS WITHOUT DONOR RESTRICTION

	Defined Benefit Pension Plan		Retiree Welfare Benefit Plan	
(in thousands of dollars)	2020	2019	2020	2019
Amounts recognized in unrestricted net assets without donor restrictions consist of:				
Net actuarial loss (gain)	$ 799,836	$ 682,445	$ (91,671)	$ (95,102)
Prior service cost (credit)	2,318	2,583	-	(2,212)
Total cumulative amounts recognized in net assets without donor restrictions	**$ 802,154**	**$ 685,028**	**$ (91,671)**	**$ (97,314)**

Benefit Obligations and Fair Value of Assets

Table 24 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 24, was $4,830.0 million as of June 30, 2020, up $361.7 million from a year earlier. 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 $4,664.4 million and $4,268.3 million as of June 30, 2020 and 2019, 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 24. PROJECTED BENEFIT OBLIGATIONS AND FAIR VALUE OF ASSETS

	Defined Benefit Pension Plan		Retiree Welfare Benefit Plan	
(in thousands of dollars)	2020	2019	2020	2019
Change in projected benefit obligations:				
Projected benefit obligations at beginning of year	$ 4,468,263	$ 3,931,212	$ 613,441	$ 566,642
Service cost	123,255	106,779	30,988	26,491
Interest cost	169,792	173,332	24,309	25,762
Retiree contributions	-	-	8,159	7,443
Net benefit payments, transfers, and other expenses	(161,473)	(153,584)	(35,125)	(36,127)
Employer Group Waiver Plan (EGWP) reimbursement	-	-	9,223	5,057
Assumption changes and actuarial net loss	230,130	410,524	17,478	18,173
Projected benefit obligations at end of the year	4,829,967	4,468,263	668,473	613,441
Change in plan assets:				
Fair value of plan assets at beginning of the year	4,058,218	3,903,154	711,157	691,328
Actual return on plan assets	381,354	308,648	65,652	42,788
Employer contributions	-	-	1,480	668
Employer Group Waiver Plan (EGWP) reimbursement	-	-	9,223	5,057
Retiree contributions	-	-	8,159	7,443
Net benefit payments, transfers, and other expenses	(161,473)	(153,584)	(35,125)	(36,127)
Fair value of plan assets at end of the year	4,278,099	4,058,218	760,546	711,157
(Unfunded) funded status at end of the year	**(551,868)**	**(410,045)**	**92,073**	**97,716**
Amounts recognized in the Consolidated Statements of Financial Position consist of:				
Net (liabilities) assets	**$ (551,868)**	**$ (410,045)**	**$ 92,073**	**$ 97,716**

Assumptions for Financial Parameters and Healthcare Trend Rates

Table 25 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 25. ASSUMPTIONS

	Defined Benefit Pension Plan		Retiree Welfare Benefit Plan	
(in thousands of dollars)	2020	2019	2020	2019
Assumptions used to determine benefit obligation as of June 30:				
Discount rate	3.36%	3.77%	3.42%	3.85%
Rate of compensation increase*	0.00%/4.00%	4.00%		
Assumptions used to determine net periodic benefit cost for the year ended June 30:				
Discount rate	3.77%	4.38%	3.85%	4.44%
Expected long-term return on plan assets	7.75%	7.75%	7.50%	7.50%
Rate of compensation increase	4.00%	4.00%		
Assumed health care cost trend rates:				
Healthcare cost trend rate assumed for next year			6.50%	5.00%
Rate to which the cost trend rate is assumed to decline (the ultimate trend rate)			4.75%	4.75%
Year the rate reaches the ultimate trend rate			2025	2021

** It is assumed that there will be no salary increases or cost-of-living adjustments through 2022; normative rates apply thereafter.*

As an indicator of sensitivity, a one percentage point change in the assumed healthcare cost trend rate would affect 2020's retiree welfare plan as shown in Table 26 below.

TABLE 26. HEALTHCARE COST TREND RATE SENSITIVITY

(in thousands of dollars)	1% Point Increase	1% Point Decrease
Effect on 2020 postretirement service and interest cost	$ 10,833	$ (8,499)
Effect on postretirement benefit obligation as of June 30, 2020	103,391	(84,396)

Plan Investments

The investment objectives for the assets of the plans are to minimize expected funding contributions and to meet or exceed the rate 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.

Tables 27A and 27B 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, 2020 and 2019, 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 24.

TABLE 27A. DEFINED BENEFIT PENSION PLAN INVESTMENTS

(in thousands of dollars)	Level 1	Level 2	Level 3	NAV	Total Fair Value
Fiscal Year 2020					
Cash and short-term investments	$ 89,862	$ -	$ -	$ -	$ 89,862
US Treasury	237,436	-	-	-	237,436
US government agency	-	34,237	-	-	34,237
Domestic bonds	-	-	-	-	-
Common equity:					
Domestic	28,382	-	74	-	28,456
Foreign	95,567	-	-	-	95,567
Equity:*					
Absolute return	-	-	-	700,276	700,276
Domestic	-	-	-	504,414	504,414
Foreign	-	-	-	1,003,706	1,003,706
Private	-	-	-	1,309,936	1,309,936
Real estate*	1,059	-	-	213,340	214,399
Real assets*	-	-	-	48,754	48,754
Other	-	-	419	-	419
Derivatives	737	696	-	-	1,433
Total plan investments	**$ 453,043**	**$ 34,933**	**$ 493**	**$ 3,780,426**	**$ 4,268,895**
Fiscal Year 2019					
Cash and short-term investments	$ 93,000	$ -	$ -	$ -	$ 93,000
US Treasury	329,996	-	-	-	329,996
US government agency	-	40,136	-	-	40,136
Domestic bonds	-	-	-	-	-
Common equity:					
Domestic	11,188	-	74	-	11,262
Foreign	62,546	-	-	-	62,546
Equity:*					
Absolute return	-	-	-	582,438	582,438
Domestic	-	-	-	447,243	447,243
Foreign	-	-	-	1,087,958	1,087,958
Private	-	-	-	1,093,149	1,093,149
Real estate*	12,957	-	-	220,185	233,142
Real assets*	-	-	-	70,126	70,126
Other	-	-	419	-	419
Derivatives	(101)	955	-	-	854
Total plan investments	**$ 509,586**	**$ 41,091**	**$ 493**	**$ 3,501,099**	**$ 4,052,269**

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

TABLE 27B. RETIREE WELFARE BENEFIT PLAN INVESTMENTS

(in thousands of dollars)	Level 1	Level 2	Level 3	NAV	Total Fair Value
Fiscal Year 2020					
Cash and short-term investments	$ 36,610	$ -	$ -	$ -	$ 36,610
US Treasury	58,187	-	-	-	58,187
US government agency	-	8,387	-	-	8,387
Domestic bonds	-	-	-	-	-
Common equity:					
Domestic	4,923	-	-	-	4,923
Foreign	16,988	-	-	-	16,988
Equity:*					
Absolute return	-	-	-	130,375	130,375
Domestic	-	-	-	89,370	89,370
Foreign	-	-	-	199,787	199,787
Private	-	-	-	177,749	177,749
Real estate*	187	-	-	28,570	28,757
Real assets*	-	-	-	5,583	5,583
Derivatives	119	123	-	-	242
Total plan investments	**$ 117,014**	**$ 8,510**	**$ -**	**$ 631,434**	**$ 756,958**
Fiscal Year 2019					
Cash and short-term investments	$ 22,770	$ -	$ -	$ -	$ 22,770
US Treasury	75,768	-	-	-	75,768
US government agency	-	9,753	-	-	9,753
Common equity:					
Domestic					
Foreign	1,882	-	-	-	1,882
Equity:*	10,507	-	-	-	10,507
Absolute return					
Domestic	-	-	-	98,857	98,857
Foreign	-	-	-	89,602	89,602
Private	-	-	-	225,405	225,405
Real estate*	-	-	-	139,971	139,971
Real assets*	1,306	-	-	26,881	28,187
Other	-	-	-	7,778	7,778
Derivatives	(25)	161	-	-	136
Total plan investments	**$ 112,208**	**$ 9,914**	**$ -**	**$ 588,494**	**$ 710,616**

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

The plans have made investments in various long-lived partnerships, 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 estimated remaining term 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 28 below as of June 30, 2020 and 2019.

TABLE 28. UNFUNDED COMMITMENTS

	2020		2019			
(in thousands of dollars)	Unfunded Commitments	Fair Value	Unfunded Commitments	Fair Value	Redemption Terms	Redemption Restrictions
Defined Benefit Pension Plan						
Equity:						
Absolute return	$ 22,323	$ 700,276	$ 29,770	$ 582,438	Ranges from 4 months to 27 months[3]	45 to 180 days
Domestic[1]	396	504,414	398	447,243	Ranges from 4 months to 25 months[3]	30 to 90 days
Foreign[2]	-	1,003,706	37,612	1,087,958	Ranges from 3 months to 24 months	30 to 91 days
Private	380,663	1,309,936	382,755	1,093,149	Closed-end funds not available for redemption	Not Applicable
Real estate	155,389	213,340	142,042	220,185	Closed-end funds not available for redemption	Not Applicable
Real assets	18,233	48,754	22,196	70,126	Closed-end funds not available for redemption	Not Applicable
Total	**$ 577,004**	**$ 3,780,426**	**$ 614,773**	**$ 3,501,099**		
Retiree Welfare Benefit Plan						
Equity:						
Absolute return	$ 2,703	$ 130,375	$ 3,962	$ 98,857	Ranges from 4 months to 27 months[3]	45 to 180 days
Domestic[1]	44	89,370	44	89,602	Ranges from 4 months to 25 months[3]	30 to 90 days
Foreign[2]	-	199,787	5,688	225,405	Ranges from 3 months to 24 months	30 to 91 days
Private	62,732	177,749	63,518	139,971	Closed-end funds not available for redemption	Not Applicable
Real estate	22,983	28,570	20,345	26,881	Closed-end funds not available for redemption	Not Applicable
Real assets	2,995	5,583	3,667	7,778	Closed-end funds not available for redemption	Not Applicable
Total	**$ 91,457**	**$ 631,434**	**$ 97,224**	**$ 588,494**		

[1]Domestic funds include funds that have remaining lock-up provisions up to 36 months.

[2]Foreign funds include funds that have remaining lock-up provisions up to 7 months.

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

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, 2020 and 2019 are shown in Table 29 below.

TABLE 29. PLANNED INVESTMENT ALLOCATION

	Defined Benefit Pension Plan			Retiree Welfare Benefit Plan		
	2020 Target Allocation	2020	2019	2020 Target Allocation	2020	2019
Cash and short-term investments	0-10%	2%	2%	0-10%	5%	3%
Fixed income	3-13%	7%	9%	10-20%	9%	12%
Equities	37.5-87.5%	69%	67%	37-87%	64%	66%
Marketable alternatives	9-19%	16%	14%	9.5-19.5%	17%	14%
Real assets	0-8%	1%	2%	0-5.5%	1%	1%
Real estate	2.5-12.5%	5%	6%	0-8%	4%	4%
Total		**100%**	**100%**		**100%**	**100%**

Expected Future Benefit Payments

In fiscal 2021, MIT expects to contribute $26.0 million to its defined benefit pension plan and expects to contribute $2.4 million 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 has 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-2019.

Table 30 below reflects the total expected benefit payments for the defined benefit pension plan and retiree welfare benefit plan over the next 10 years. These payments have been estimated based on the same assumptions used to measure MIT's benefit obligations as of June 30, 2020.

TABLE 30. EXPECTED FUTURE BENEFIT PAYMENTS

(in thousands of dollars)	Pension Benefits	Other Benefits*
2021	$ 178,723	$ 26,096
2022	191,190	28,998
2023	196,467	30,909
2024	201,927	32,488
2025	208,172	33,890
2026-2030	1,141,161	190,120

** Other 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 31A and 31B present the composition of net assets as of June 30, 2020, and June 30, 2019, 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 invested funds is pledges, the majority of which will be reclassified to net assets without donor restrictions when cash is received.

TABLE 31A. 2020 TOTAL NET ASSET COMPOSITION

(in thousands of dollars)	Without Donor Restrictions	With Donor Restrictions	Total
Endowment Funds			
General purpose	$ 1,120,415	$ 1,712,557	$ 2,832,972
Departments and research	933,024	2,524,714	3,457,738
Library	14,880	62,550	77,430
Salaries and wages	707,388	4,342,847	5,050,235
Graduate general	110,256	301,133	411,389
Graduate departments	220,360	937,844	1,158,204
Undergraduate	293,639	1,952,567	2,246,206
Prizes	11,832	67,555	79,387
Miscellaneous	1,459,540	1,143,778	2,603,318
Investment income held for distribution	464,639	-	464,639
Endowment funds before pledges	5,335,973	13,045,545	18,381,518
Pledges	-	114,387	114,387
Total endowment funds	5,335,973	13,159,932	18,495,905
Other Invested Funds			
Student-related loan funds	18,509	32,115	50,624
Building funds	186,666	73,316	259,982
Designated purposes:			
Departments and research	460,286	-	460,286
Other purposes	195,261	17,205	212,466
Life income funds and donor advised funds	30,968	185,937	216,905
Pledges	-	505,953	505,953
Other funds available for current expenses	2,584,428	660,445	3,244,873
Funds for educational plant	769,937	-	769,937
Total other invested funds	4,246,055	1,474,971	5,721,026
Total net assets	**$ 9,582,028**	**$ 14,634,903**	**$ 24,216,931**

J. Components of Net Assets and Endowment (continued)

TABLE 31B. 2019 TOTAL NET ASSET COMPOSITION

(in thousands of dollars)	Without Donor Restrictions	With Donor Restrictions	Total
Endowment Funds			
General purpose	$ 1,080,333	$ 1,659,769	$ 2,740,102
Departments and research	887,685	2,399,708	3,287,393
Library	14,348	59,746	74,094
Salaries and wages	677,594	4,170,306	4,847,900
Graduate general	106,312	286,439	392,751
Graduate departments	204,562	875,364	1,079,926
Undergraduate	283,109	1,861,021	2,144,130
Prizes	10,388	64,775	75,163
Miscellaneous	1,330,006	1,024,265	2,354,271
Investment income held for distribution	448,020	-	448,020
Endowment funds before pledges	5,042,357	12,401,393	17,443,750
Pledges	-	125,578	125,578
Total endowment funds	5,042,357	12,526,971	17,569,328
Other Invested Funds			
Student-related loan funds	19,018	18,650	37,668
Building funds	201,860	80,530	282,390
Designated purposes:			
Departments and research	423,830	-	423,830
Other purposes	217,280	18,064	235,344
Life income funds and donor advised funds	22,764	185,135	207,899
Pledges	-	457,805	457,805
Other funds available for current expenses	2,539,706	305,904	2,845,610
Funds for educational plant	709,131	-	709,131
Total other invested funds	4,133,589	1,066,088	5,199,677
Total net assets	**$ 9,175,946**	**$ 13,593,059**	**$ 22,769,005**

MIT's endowment consists of approximately 4,300 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 32 below reflects changes in endowment net assets without and with donor restrictions as of June 30, 2020 and 2019, respectively.

TABLE 32. CHANGES IN ENDOWMENT NET ASSETS

(in thousands of dollars)	Without Donor Restriction	With Donor Restriction	Total
Fiscal Year 2020			
Endowment net assets, July 1, 2019	$ 5,042,357	$ 12,526,971	$ 17,569,328
Investment return:			
Net Investment income	3,481	11,652	15,133
Net appreciation (realized and unrealized)	484,684	1,123,005	1,607,689
Total investment return	488,165	1,134,657	1,622,822
Contributions	-	103,436	103,436
Appropriation of endowment assets for expenditure	(222,038)	(515,164)	(737,202)
Other changes:			
Net asset reclassifications and transfers	27,489	(89,968)	(62,479)
Endowment net assets, June 30, 2020	**$ 5,335,973**	**$ 13,159,932**	**$ 18,495,905**
Fiscal Year 2019			
Endowment net assets, July 1, 2018	$ 4,806,349	$ 11,723,083	$ 16,529,432
Investment return:			
Net Investment income	47,543	117,736	165,279
Net appreciation (realized and unrealized)	376,590	876,100	1,252,690
Total investment return	424,133	993,836	1,417,969
Contributions	-	177,015	177,015
Appropriation of endowment assets for expenditure	(208,439)	(490,894)	(699,333)
Other changes:			
Net asset reclassifications and transfers	20,314	123,931	144,245
Endowment net assets, June 30, 2019	**$ 5,042,357**	**$ 12,526,971**	**$ 17,569,328**

Underwater Endowment Funds

From time to time, the fair value of assets associated with individual donor-restricted endowment funds may fall below the value of the initial and subsequent donor gift amounts (underwater). When underwater endowment funds exist, they are classified as a reduction of net assets with donor restrictions. There were no underwater endowment funds reported in net assets with donor restrictions as of June 30, 2020, and June 30, 2019.

J. Components of Net Assets and Endowment (continued)

Endowment Investment and Spending Policies

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

The Institute's primary investment pool, Pool A, is principally for endowment and funds functioning as endowment. The effective spending rate on pooled endowed funds was 4.3 percent, or 4.8 percent on a three-year-average basis, for both 2020 and 2019.

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 $81.80 and $77.90 per Pool A unit as of June 30, 2020 and 2019, 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, 2020 not already included in a previous footnote are outlined in Table 33 below.

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

(in thousands of dollars)

Financial Element		**2020**
Property, plant, and equipment- pre-implementation	$	3,791,068
Property, plant, and equipment- post-implementation with outstanding debt for original purchase		72,000
Property, plant, and equipment- post-implementation without outstanding debt for original purchase		91,970
Construction in Process		351,731
Long-term debt- for long term purposes pre-implementation		3,091,392
Long-term debt- for long term purposes post-implementation		72,000
Life income funds with donor restrictions		98,934
Net assets with donor restrictions: restricted in perpetuity		3,777,092

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Massachusetts Institute of Technology
Financial Responsibility Supplemental Schedule
June 30, 2020

(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		$ 9,582,028
Consolidated Statement of Financial Position- Net Assets with donor restrictions	Net assets with donor restrictions		14,634,903
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	$ 4,306,769	
Footnote K - Property, plant, and equipment- pre-implementation	Less: Property, plant, and equipment- pre-implementation		3,791,068
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		72,000
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		91,970
Footnote K - Construction in Process	Less: Construction in Process		351,731
Footnote I, Table 24 - Net liability for Defined Benefit Pension Plan less Net asset for Retiree Welfare Benefit	Post-employment and retirement liabilities		459,795
Footnote K - Long-term debt- for long term purposes pre-implementation and post-implementation	Long-term debt- for long term purposes	$ 3,163,392	
Footnote K - Long-term debt- for long term purposes pre-implementation	Long-term debt- for long term purposes pre-implementation		3,091,392
Footnote K - Long-term debt- for long term purposes post-implementation	Long-term debt- for long term purposes post-implementation		72,000
Footnote K - Life income funds with donor restrictions	Less: Life income funds with donor restrictions		98,934
Footnote K - Net assets with donor restrictions: restricted in perpetuity	Less: Net assets with donor restrictions: restricted in perpetuity:		3,777,092
	Total Expendable Net Assets:		**$ 19,657,323**
Total Expenses and Losses:			
Notes to the Consolidated Financial Statements- Footnote H, Table 21 - 2020 Total	Total expenses without donor restrictions		$ 3,763,618
Consolidated Statement of Activities- Postretirement plan changes other than net periodic benefit cost	Non-operating and net investment loss		122,769
Consolidated Statement of Activities- Postretirement plan changes other than net periodic benefit cost	Less: Pension- related changes other than net periodic costs		122,769
	Total Expenses and Losses:		**$ 3,763,618**
	Equity Ratio		
Modified Net Assets:			
Consolidated Statement of Financial Position- Net assets without donor restrictions	Net assets without donor restrictions		$ 9,582,028
Consolidated Statement of Financial Position- Net assets with donor restrictions	Net assets with donor restrictions		14,634,903
N/A	Less: Intangible assets		-
N/A	Less: Unsecured related party receivables		-
	Total Modified Net Assets:		**$ 24,216,931**
Modified Assets:			
Consolidated Statement of Financial Position- Total assets	Total assets		$ 30,505,530
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	-	
N/A	Less: Unsecured related party receivables		-
	Total Modified Assets:		**$ 30,505,530**
	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:		$ 406,082
	Total Change in Net Assets Without Donor Restrictions:		**$ 406,082**
Total Revenues and Gains Without Donor Restrictions:			
Consolidated Statement of Activities- Total Revenues, Net return on investments, Distribution of accumulated investment gains, Other changes	Total operating revenue and other gains without donor restrictions:		$ 4,380,369
	Total Revenues and Gains Without Donor Restrictions:		**$ 4,380,369**

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

Massachusetts Institute of Technology
Note to Financial Responsibility Supplemental Schedule
June 30, 2020

1. Basis of Presentation

The proceeding schedule of financial responsibility ratios (the "Schedule") of 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, 2020. 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 basic financial statements.

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

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, 2020

Federal Grantor/ Pass Through Grantor/ Program Title	Federal CFDA Number	Total $ Amount Expended	$ Amount Passed to Subrecipients
Research and Development Cluster			
U.S. Department of Defense:	12		
Air Force		$ 397,405,680	$ 36,131,065
Army		86,413,676	6,906,078
Classified		188,985,215	13,136,614
Defense Advance Research Project Agency		68,175,413	21,989,002
Missile Defense Agency		104,247,302	5,198,918
National Security Agency		8,636,769	336,964
Navy		68,429,160	4,433,331
Other DOD		152,898,287	4,707,568
Passthrough		42,220,403	182,983
Total Department of Defense		$ 1,117,411,905	$ 93,022,523
U.S. Department of Commerce	11	$ 8,997,458	$ 575,937
U.S. Department of Commerce - Passthrough	11	699,595	19,817
U.S. Department of Energy	81	50,812,199	4,898,423
U.S. Department of Energy - Passthrough	81	16,798,795	-
U.S. Department of Health and Human Services	93	113,815,252	14,088,252
U.S. Department of Health and Human Services - Passthrough	93	22,790,660	-
U.S. Department of Homeland Security	97	28,260,511	911,636
U.S. Department of Homeland Security - Passthrough	97	768,476	-
U.S. Department of Transportation	20	29,656,106	1,147,546
U.S. Department of Transportation - Passthrough	20	288,201	-
Miscellaneous Federal Government	Various	16,461,049	1,060,421
Miscellaneous Federal Government - Passthrough	Various	1,592,784	-
National Aeronautics & Space Administration	43	64,612,263	13,282,546
National Aeronautics & Space Administration - Passthrough	43	20,191,431	745,066
National Science Foundation	47	84,413,200	8,854,059
National Science Foundation - Passthrough	47	15,575,413	5,208
Total Research and Development Cluster	Appendix A	$ 1,593,145,298	$ 138,611,434

Massachusetts Institute of Technology

Schedule of Expenditures of Federal Awards

For the Year Ended June 30, 2020

Federal Grantor/ Pass Through Grantor/ Program Title	Federal CFDA Number	Total $ Amount Expended	$ Amount Passed to Subrecipients
Student Financial Assistance Cluster			
U.S. Department of Education:			
Grants:			
Pell	84.063	$ 4,306,474	
Federal Supplemental Educational Opportunity	84.007	1,875,059	
Federal Work Study	84.033	1,788,536	
Federal Perkins Loan:	84.038		
New Loans		-	
Balance outstanding at July 1, 2019		15,673,006	
Loan Administrative Cost Allowance		208,383	
William D. Ford Federal Direct Loan Program:	84.268		
Direct Subsidized and Unsubsidized Loans		6,510,202	
Direct Plus Loan for Parents and for Graduate or Professional Students		7,996,231	
Total Student Financial Assistance Cluster		$ 38,357,891	
Other Federal Programs:			
U.S. Department of Commerce	Appendix B	$ 175,353	$ 71,948
U.S. Department of Commerce - Passthrough	Appendix C	236,619	-
U.S. Department of Defense	Appendix B	1,227,188	573,440
U.S. Department of Defense - Passthrough	Appendix C	4,487,060	4,029
U.S. Department of Energy	Appendix B	185,940	18,189
U.S. Department of Energy - Passthrough	Appendix C	287,415	-
U.S. Department of Homeland Security	Appendix B	195,115	-
U.S. Department of Transportation	Appendix B	26,849	-
Miscellaneous Federal Government	Appendix B	3,279,238	-
Miscellaneous Federal Government - Passthrough	Appendix C	385,387	-
National Aeronautics & Space Administration	Appendix B	2,051,239	15,854
National Aeronautics & Space Administration - Passthrough	Appendix C	586,874	-
Total Other Federal Programs		$ 13,124,277	$ 683,460
Total Federal Programs		$ 1,644,627,466	$ 139,294,894

Massachusetts Institute of Technology
Notes to Schedule of Expenditures of Federal Awards
For the Year Ended June 30, 2020

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, 2020. Because the Schedule presents only a selected portion of the activities of the Institute, it is not intended to and does not present the financial position, changes in net assets and cash flows of the Institute. The accompanying appendices A, B, and C provide detail on the federal awards expended by the Institute.

For purposes of the Schedule, federal awards include all grants, contracts and similar agreements entered into directly between the Institute and agencies and departments of the federal government and all subawards to the Institute by nonfederal organizations pursuant to federal grants, contracts and similar agreements. The information in this schedule is presented in accordance with the provisions of the Office of Management and Budget's Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards (Uniform Guidance). Therefore, certain amounts presented in the Schedule may differ from amounts presented in, or used in preparation of, the consolidated financial statements. CFDA 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 contained in OMB Circular A-21, Cost Principles for Educational Institutions, Federal Acquisition Regulation and OMB's Uniform Guidance. Under those cost principles, certain types of expenditures are not allowable or are limited as to reimbursement. 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 2019 and negotiated fixed rates for indirect costs through the 2022 fiscal year.

Massachusetts Institute of Technology
Notes to Schedule of Expenditures of Federal Awards
For the Year Ended June 30, 2020

3. Federal Student Loan Programs

The Federal Perkins Loan Program (CFDA #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, 2020 is $11,310,852.

The William D. Ford Federal Direct Loan Programs (CFDA #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, 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 Lincoln'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 20 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	$ 20,525,570	$ 376,880,110	$ 409,118	$ 11,927,071	$ 409,741,869
Army	26,131,127	60,282,549	1,073,472	7,804,862	95,292,010
Classified	-	188,985,215	-	-	188,985,215
Defense Advanced Research Project Agency	26,172,152	42,003,261	-	9,899,020	78,074,433
Missile Defense Agency	-	104,247,302	152,703	-	104,400,005
National Security Agency	-	8,636,769	-	-	8,636,769
Navy	18,558,432	49,870,728	163,130	6,522,171	75,114,461
Other Department of Defense	1,673,689	151,224,598	95,345	4,173,511	157,167,143
Total Department of Defense	93,060,970	982,130,532	1,893,768	40,326,635	1,117,411,905
Department of Commerce	2,768,551	6,228,907	259,629	439,966	9,697,053
Department of Energy	50,812,199	-	1,466,130	15,332,665	67,610,994
Department of Health & Human Services	113,815,252	-	1,250,473	21,540,187	136,605,912
Department of Homeland Security	(16,844)	28,277,355	-	768,476	29,028,987
Department of Transportation	2,742,834	26,913,272	18,234	269,967	29,944,307
Miscellaneous Federal Government:					
Department of Agriculture	53,339	-	-	-	53,339
Department of Education	500,171	-	-	-	500,171
Department of Interior	1,701,279	-	46,244	509,872	2,257,395
Other	2,341,835	11,864,425	82,309	954,359	15,242,928
Total Miscellaneous Federal Government	4,596,624	11,864,425	128,553	1,464,231	18,053,833
Nat'l Aeronautics & Space Administration	22,881,579	41,730,684	8,206,930	11,984,501	84,803,694
National Science Foundation	84,413,200	-	254,929	15,320,484	99,988,613
Total Federal Sponsors	**$ 375,074,365**	**$ 1,097,145,175**	**$ 13,478,646**	**$ 107,447,112**	**$ 1,593,145,298**

Note for Appendices A-1, A-3, B and C details:
- Contracts without CFDA numbers were shown as ".RD" in the CFDA# 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 2020 Expenditures

Federal Agency	Government Contract Number	Master Project Name	CFDA #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
DEPARTMENT OF DEFENSE					
Air Force					
Air Force	FA2386-17-1-4661	Development of tele-operated quadrupedal robotic platform for disaster response	12.630	92,491	-
Air Force	FA8650-14-C-2472	Computational Aircraft Prototype Syntheses (CAPS)	12.RD	426,591	213,088
Air Force	FA8650-15-C-7564	ClearScope: Transparent multi-level inter-process and intra-process information scoping	12.RD	565,597	347,251
Air Force	FA8650-17-1-7713	Visible Integrated Photonics Enhanced Reality (VIPER)	12.910	30,642	-
Air Force	FA8650-17-C-9113	Nanoscale X-ray Tomosynthesis for Rapid Assessment of IC Dice (NXT-RAID)	12.RD	283,828	-
Air Force	FA8650-18-2-7838	Foundations of Scalable Non--Convex Optimization	12.910	83,658	-
Air Force	FA8650-19-2-7921	Discrete Integrated Circuit Electronics	12.910	340,655	-
Air Force	FA8750-16-2-0141	Development of a Wide -Bandgap Programmable Nanophotonic Processor	12.300	341,104	-
Air Force	FA8750-17-2-0126	Human Data Interaction Project	12.300	696,168	380,000
Air Force	FA8750-17-C-0229	Genetic circuit design for extreme environments enabled by models extracted from petabyte-scale perturbation analyses	12.RD	1,010,397	458,081
Air Force	FA8750-17-C-0239	BayesDB for Data-Centric Scientific Discovery	12.RD	694,708	-
Air Force	FA8750-19-2-1000	AI Accelorator	12.300	5,693,755	-
Air Force	FA9453-18-2-0017	Remote-epitaxy of multijunction solar cells on graphene coated III-V substrates	12.114	85,003	-
Air Force	FA9550-14-1-0035	Advanced Quantum Material - A New Frontier for Ultracold Atoms	12.800	491,611	435,079
Air Force	FA9550-14-1-0052	Optimal Measurements for Scalable Quantum Technologies	12.800	285,236	24,453
Air Force	FA9550-14-1-0060	(BRI FY14) Theory-based Engineering of Biomolecular Circuits in Living Cells	12.800	222,880	86,521
Air Force	FA9550-15-1-0038	(MURI 14)-A unified mathematical and algorithmic framework for managing multiple information sources of multi-physics systems	12.800	976,937	720,368
Air Force	FA9550-15-1-0058	VOLUME MODE TRAVELING WAVE TUBE AMPLIFIER	12.800	208,710	-
Air Force	FA9550-15-1-0514	FATE: Foldable and Adaptive Two-Dimensional Electronics	12.800	1,364,177	629,062
Air Force	FA9550-16-1-0108	Dynamic Data Driven Methods for Self-aware Aerospace Vechicles	12.800	133,229	66,444
Air Force	FA9550-16-1-0208	Automated Discovery of Important Chemical Reactions	12.800	170,840	-
Air Force	FA9550-16-1-0214	(YIP) The Hybrid Discontinuous Galerkin Method for Implicit Large Eddy Simulations of Manetohydrodynamic Flows	12.800	134,935	-
Air Force	FA9550-16-1-0231	Complementing dynamical equations with data in adaptive reduced-order subspaces	12.800	65,161	-

Appendix A1
Massachusetts Institute of Technology
Federal Research Support - On Campus
FY 2020 Expenditures

Federal Agency	Government Contract Number	Master Project Name	CFDA #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
Air Force	FA9550-16-1-0324	Quantum Gas Microscopy of Strongly Correlated Fermions	12.800	70,469	-
Air Force	FA9550-16-1-0382	Quantum Optoelectronics and Plasmonics with Novel Van der Waals Heterostructures	12.800	158,248	-
Air Force	FA9550-16-1-0391	High-Speed Quantum Communications using Silicon Photonics	12.800	130,120	-
Air Force	FA9550-16-1-0427	Uncovering and controlling the mechanisms of surface chemical and electrochemical stability on perovskite oxides	12.800	35,071	-
Air Force	FA9550-17-1-0058	Pixel matrices and other compositional analyses of interconnected systems	12.800	147,796	-
Air Force	FA9550-17-1-0081	The Marvin Minsky Institute for Society of Mind Theory	12.800	270,754	-
Air Force	FA9550-17-1-0114	The DDDAS Design of Programmable Mechanical Metamaterials	12.800	30,529	23,936
Air Force	FA9550-17-1-0136	Life-like Self-assembly through Dissipative Adaptation	12.800	119,842	-
Air Force	FA9550-17-1-0165	Learning to Plan in Hybrid Spaces	12.800	235,103	-
Air Force	FA9550-17-1-0192	Spontaneous Computation in Chemical Systems	12.800	51,179	-
Air Force	FA9550-17-1-0288	DNA-Programmed Epitaxy of Nanoparticle Superlattices	12.800	104,391	-
Air Force	FA9550-17-1-0316	High-resolution methods for passive geolocation and navigation	12.800	157,962	-
Air Force	FA9550-17-1-0362	User Interaction for Teaming with Autonomous Systems	12.800	480,702	-
Air Force	FA9550-18-1-0023	Coupling in Uncertain Multi-physics Systems	12.800	94,097	-
Air Force	FA9550-18-1-0080	Remote Sensing of Coronal Mass Ejections using Widefield Low Frequency Imaging Arrays	12.800	150,555	-
Air Force	FA9550-18-1-0341	Low Bandgap, Highly Polarizable, and Intrinsically Conductive Polymers	12.800	202,266	-
Air Force	FA9550-18-1-0376	(DURIP) Single-Photon Detection System for Photonic Quantum Technologies	12.800	246,793	-
Air Force	FA9550-18-1-0436	Empty State Electronics	12.800	1,572,194	386,354
Air Force	FA9550-19-1-0048	Harnessing Magnons for Hybrid Quantum Information Systems	12.800	131,940	-
Air Force	FA9550-19-1-0063	Competing Orders in Nanostructured High-Tc Superconductors	12.800	155,259	-
Air Force	FA9550-19-1-0065	On-Chip PHz Processing of Optical Fields using Nanostructured Electron Emitters	12.800	169,177	-
Air Force	FA9550-19-1-0104	Electro-Active Polymers for Robust and Flexible Electrospray Propulsion	12.800	92,217	-
Air Force	FA9550-19-1-0113	A Category-Theoretic Approach to Agent Interaction: Information, Communication, Planning, and Learning	12.800	141,400	-
Air Force	FA9550-19-1-0119	DURIP: Laser systems for trapping, transporting and shaping ultracold dysprosium atoms	12.800	134,304	-
Air Force	FA9550-19-1-0153	(DURIP) Simultaneous Annealing and Irradiation Furnace for Optimized Generation of Diamond Color Centers	12.800	111,000	-

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Federal Agency	Government Contract Number	Master Project Name	CFDA #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
Air Force	FA9550-19-1-0240	Scalable accelerated algorithms for exascale simulation and optimization/deep learning	12.800	147,937	-
Air Force	FA9550-19-1-0263	Building Attack Resilience into Complex Networks: Deterrence, Inspection, and Recovery	12.800	161,131	-
Air Force	FA9550-19-1-0269	Learning to Learn Concepts as Programs: Hierarchical Bayes and Amortised Inference	12.800	123,569	-
Air Force	FA9550-19-1-0319	Structured Assignment: Geometric Optimization Algorithms for Large-Scale Matching	12.800	219,900	-
Air Force	FA9550-19-1-0381	Physics and Management of Aerothermal-Mechanical Interactions for Enabling Robust Operation of Thermal System	12.800	145,690	-
Air Force	FA9550-19-1-0392	High Performance Area-Enhanced Hierarchical Evaporator for Extreme Thermal Management	12.800	99,292	-
Air Force	FA9550-20-1-0044	Design of robust and accurate biosensing systems in living cells	12.800	10,682	-
Air Force	FA9550-20-1-0066	Unraveling phonons at the atomic scale: a new tool to explore the science of thermal transport	12.800	25,689	-
		Total for Air Force		**20,525,570**	**3,770,638**
Army					
Army	W81XWH-13-1-0151	Nano-siRNA Particles and Combination Therapies for Ovarian Tumor Targeting	12.420	5,818	-
Army	W81XWH-14-1-0240	Extracellular Matrix Biomarkers for Diagnosis, Prognosis, Imaging and Targeting	12.420	1,251,004	456,775
Army	W81XWH-14-C-0111	Prosthetic Knee-Angle-Foot System with Biomechatronic Sensing, Control and Power Generation	12.RD	10,971	-
Army	W81XWH-15-1-0365	The Therapeutic Effect of the Antitumor Drug 11beta and Related Molecules on Polycystic Kidney Disease	12.420	180,902	-
Army	W81XWH-16-1-0565	Engineer Synthetic Tumor Recruited Immuno-Cellular Therapy (STRICT)	12.RD	141,067	-
Army	W81XWH-16-1-0671	Targeting MCL-1 with Unique Peptide Inhibitors Delivered Intracellularly Using a Novel Nanoparticle Formulation	12.420	36,329	-
Army	W81XWH-17-1-0159	Synthetic Tumor Recruited Immuno-Cellular Therapy (STRICT) for Lung Cancer	12.420	153,065	-
Army	W81XWH-17-1-0427	Connecting Mechanical to Biomechanical Performance of Prosthetic Feet to Design Customized Passive Devices that Provide Improved Mobility	12.420	192,258	51,924
Army	W81XWH-17-1-0669	Heritably immunizing white-footed mice against tick-borne disease	12.420	235,481	-
Army	W81XWH-18-1-0208	PR172205 Development of a lentiviral display system for highthroughput T cell ligand deorphanization and specificity-based reprogramming	12.420	77,753	-

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Federal Agency	Government Contract Number	Master Project Name	CFDA #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
Army	W81XWH1810513	Modeling of lung adenocarcinoma tumorigenesis using recombinase-driven sequential gene mutations	12.420	119,811	-
Army	W81XWH1810515	Investigating the Oligomerization of TorsinA as a Means to Develop DYT1 Dystonia Theraputics	12.420	507,093	-
Army	W81XWH-18-2-0010	Intravenous Hemostatic Nanoparticles to Stop Bleeding from Noncompressible and Unidentifiable Wounds	12.420	293,067	119,404
Army	W81XWH-19-1-0151	An Osseo-Neural Transtibial Prosthesis with Efferent-Afferent Neural Control	12.420	970,389	142,138
Army	W81XWH-19-1-0257	Leveraging rational nanoparticle design for improved treatment of pediatric and adolescent cancers (CA181202)	12.420	114,483	-
Army	W81XWH1910555	New avenues for neurofibromatosis therapy	12.420	144,590	-
Army	W911NF-11-1-0400	Multi-Qubit Enhanced Sensing and Metrology	12.431	493,533	300,001
Army	W911NF-13-D-0001, T.O. 1	ISN 3 FY'13 funding	12.RD	705,436	-
Army	W911NF-13-D-0001, T.O. 2	ISN 3 FY'13 funding	12.RD	1,250,540	2,645
Army	W911NF-13-D-0001, T.O. 8	ISN 3 FY'13 funding	12.RD	606,150	3,825
Army	W911NF-13-D-0001, T.O. 9	ISN 3 FY'13 funding	12.431	360,462	210,553
Army	W911NF-15-1-0128	Realizing Novel Phases of Materials with Light-Matter Interaction	12.431	122,449	-
Army	W911NF-15-1-0166	Managing Uncertainty: Principles For Robust And Dexterous Continuum Mechanics	12.431	3,583	5,187
Army	W911NF-15-1-0196	Explaining and Exploiting the Resistive Force Theory - Toward optimal, flexible, locomotor designs: Research Area 1.3.1	12.431	-478	-
Army	W911NF-16-1-0034	Coupled Synthesis, Transport, and Magnetization Studies to Detect New Topological Phases	12.431	197,831	-
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	261,955	-
Army	W911NF-16-1-0568	Assembling Assemblers with Functional Digital Materials	12.431	26,427	-
Army	W911NF-16-2-0023	Automated System for Knowledge-based Continuous Organic Synthesis (ASKCOS)	12.910	2,912,558	524,373
Army	W911NF-16-2-0176	A Systems Approach for Managing the Health of Force	12.431	275,862	239,384
Army	W911NF-16-2-0192	Superdetectors: Unlocking the Potential of NonEquilibrium Superconductivity at the Nanoscale	12.910	570,495	107,594
Army	W911NF-17-1-0068	Smooth Modeling of Flows on Graphs	12.431	1,845	-
Army	W911NF-17-1-0174	Physical Properties of Materials: Exotic Physical Properties of Electronically Coupled Two-Dimensional Metal-Organic Frameworks	12.431	90,990	-
Army	W911NF-17-1-0223	Improved Ceramic Manufacturability With Electric Field Assisted Sintering: Developing Underlying Principles	12.431	12,447	-

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Federal Agency	Government Contract Number	Master Project Name	CFDA #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
Army	W911NF-17-1-0268	(DURIP) Ultrapure Reactive Ion Etching for Scalable Nanofabrication of Carbon-Based Semiconductor Quantum Devices	12.431	-84	-
Army	W911NF-17-1-0433	New Frameworks for Quantum Algorithms	12.431	276,051	-
Army	W911NF-17-1-0435	High-Quality Tunable Graphene Plasmonic Metamaterials	12.431	88,973	-
Army	W911NF-17-1-0508	10.1.2:10.1.1: Low Latency Wireless Networks for Mission Critical Communications	12.431	118,796	-
Army	W911NF-17-1-0521	Polymer Chemistry: Uniform chiral polymers by IEG: synthesis and assembly	12.431	56,010	-
Army	W911NF-17-1-0527	Quantum Machine Learning	12.431	252,154	-
Army	W911NF-17-2-0043	An Osseointegrated Transfemoral Prosthesis Offering Long-Term Bi-Directional Efferent-Afferent Neural Transmission	12.910	198,089	125,175
Army	W911NF-17-2-0077	Programming seed cells to grow and differentiate into defined patterns	12.431	157,086	-
Army	W911NF-17-2-0098	FACETS: Fabrication of Autonomously Constructed Engineered Three-dimensional Shapes	12.431	10,326	5,394
Army	W911NF-18-1-0063	Research Area 10.3: Reliability and robustness for fast Bayesian inference of complex data	12.431	114,885	-
Army	W911NF-18-1-0116	Improving Qubit Performance with Advanced, Novel, & Emerging Materials and Architectures	12.431	454,862	-
Army	W911NF-18-1-0118	Rheological Interaction Physics of Wheeled Locomotion in Soft Substrates for Improved Mobility: MIT Component	12.431	150,751	-
Army	W911NF-18-1-0407	Towards a Theory of Large-Scale Human Interactions	12.431	251,235	-
Army	W911NF1810411	High Performance Superconducting Qubit Technology Engineering Research (HiPSTER)	12.431	582,216	138,860
Army	W911NF1810432	Ab-Initio Solid-State Quantum Materials: Design, Production, and Characterization at the Atomic Scale	12.431	866,172	709,178
Army	W911NF1810436	Assessment of Nanoparticle Assemblies for Efficient Gene Therapy Vehicles	12.630	15,194	-
Army	W911NF-18-2-0048	ISN 4 Collaborative Agreement Core 6.1 Funding	12.431	4,105,631	-
Army	W911NF-18-2-0055	Synthetic Routes to Graphamid and Grapheylene by High Pressure Control of In-Plane Polymerization and Activation Volume	12.431	187,455	-
Army	W911NF-18-2-0257	SBIML: Synthetic Biology Inspired Machine Learning	12.910	358,403	-
Army	W911NF-19-1-0057	Higher-order geometry and topology of complex networks W911NF-17-S-0002	12.431	453,495	250,089
Army	W911NF-19-1-0098	Parametrized Model Order Reduction for Engineered Coastal and Hydraulic Systems: Component Libraries and Digital Twins	12.431	149,681	-

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Federal Agency	Government Contract Number	Master Project Name	CFDA #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
Army	W911NF1910156	DURIP: A Wireless Networking Testbed for Low Latency Mission Critical Communications	12.431	119,609	-
Army	W911NF-19-1-0217	Foundations of Decision Making with Behavioral and Computational Constraints	12.431	1,169,433	553,638
Army	W911NF-19-1-0275	Theoretical Investigation of Mechanically Coupled Chemical Kinetics and Phase Transitions in Energetic Materials	12.431	148,793	-
Army	W911NF-19-1-0311	Research Area 7.2: Catalyzing High Potential Redox of Inert Molecules	12.431	40,140	-
Army	W911NF-19-1-0322	Computation and Statistics in High-dimensional Problems of Autonomy	12.431	123,033	-
Army	W911NF1910372	Optical Communication with Synthetic Cells	12.431	94,896	-
Army	W911NF-19-1-0481	Development of Methods for Continuous-Variable Quantum Computing with Trapped-Ion	12.431	386,360	120,226
Army	W911NF-19-1-0511	Rotating Sensing with Superfluid Quantum Gases	12.910	178,027	-
Army	W911NF1910517	Efficient light-matter interfaces for Rydberg arrays and entanglement in topological quantum networks	12.431	105,878	2,716
Army	W911NF1920034	Machine Learning for Discovery of Routes to Energetic Materials	12.431	157,028	-
Army	W911NF1920041	Interface Exchange Coupling of TI Dirac Surface States in Proximity with Ferromagnetic Insulator: Towards Exchange Tunable Quantum Coherent Devices	12.431	54,002	-
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	92,126	-
Army	W911NF1920098	Mechanics and Design of Triply Periodic Minimal Surfaces	12.431	107,453	-
Army	W911NF1920105	Engineered biofilms to block arsenic absorption in the small intestine	12.910	446,194	206,227
Army	W911NF1920117	Structural Robotics	12.431	253,034	-
Army	W911NF1920124	More Powerful Analysis of Complex, Multiplatform, Adaptive Systems Using System Theory-- CCE-AA-6 Complex Adaptive Systems Analysis	12.431	137,680	-
Army	W911NF1920144	Human-Robot Co-Training for Unpredicted Tasks	12.630	96,486	-
Army	W911NF1920211	Expression of Recombinant Products with Butyrylcholinesterase (BChE) Activity in Pichia pastoris.	12.431	715,714	-
Army	W911NF1920228	Strategies and Emergent Properties that Contribute to Achieving Mission Objectives in Mixed Human-Autonomy Teams	12.431	74,989	-
Army	W911NF-20-1-0037	Metastable Quibits in Multi-Ion Systems	12.431	8,199	-
Army	W911NF2010084	Ultrafast Spatial Light Modulation by Optical Control	12.RD	609	-
Army	W911NF2010200	Metal-Organic Chalcogenolates	12.431	8,418	-

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Federal Agency	Government Contract Number	Master Project Name	CFDA #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
Army	W912DW-17-P-0088	Standardization of Polymeric Sampling for Measuring Feeely Dissolved Organic Contaminant Concentrations in Sediment Porewater	12.RD	45,739	-
Army	W912HQ-14-C-0028	Integrated Passive Sampler-Food Web Modeling Framework for Monitoring Remedy Effectiveness	12.RD	14,647	-
Army	W912HQ-14-C-0034	Combining Mass Balance Modeling with Passive Sampling at Contaminated Sediment Sites to Evaluate Continuing Inputs and Food Web Responses to Remedial Actions	12.RD	152,222	-
Army	W912HZ-17-2-0027	Carbon Nanotube Sensors to Enable Real-Time Distributed Sensing of Contaminates in Water	12.630	201,662	-
Army	W9132T1920004	Measuring Physical Properties of Individual Vesicles	12.630	25,211	-
		Total for Army		**26,131,127**	**4,275,305**
DARPA					
DARPA	HR0011-15-2-0047	Computer-Synthesized Protocols for Resilient Networking	12.910	291,923	-
DARPA	HR0011-15-C-0084	The MIT-Broad Foundry: TA2	12.RD	4,335,661	2,683,463
DARPA	HR0011-16-2-0041	Supporting DARPA Matrix Program via Ab Initio Simulation of Thermoelectric Transport	12.910	75,252	-
DARPA	HR0011-16-C-0030	Principles, Limits, and Methods for Computational Periscopy	12.RD	898,370	120,588
DARPA	HR00111720029	Large-scale, Reconfigurable and Multifunctional 2.5-D Conformal Optics	12.910	568,219	366,137
DARPA	HR00111720061	2D material based layer transfer for maximizing maganetoelectric coupling	12.910	181,468	75,017
DARPA	HR00111810004	Instant & Reversible Barriers through Granular Jamming	12.910	79,042	83,242
DARPA	HR00111820007	Morphing Morphogenesis	12.910	19,428	-
DARPA	HR0011-18-3-0006	Revolutionizing Computing Systems through Dense and Fine-grained Monolithic 3D Integration	12.RD	15,107,668	14,428,854
DARPA	HR001118C0018	The Hardware Security Compiler: A Rapid-Development Workflow with End-to-End Formal Verification	12.RD	1,423,868	127,897
DARPA	HR00111920025	Rethinking molecular design: Deep integration of AI, physical chemistry, and HTE	12.910	1,153,264	-
DARPA	HR00111920025	COVID-19: Rethinking molecular design: Deep integration of AI, physical chemistry, and HTE	12.910	205,094	-
DARPA	HR0011-19-9-0021	Decision Making via Hierarchy of Network Games: Algorithms, Game Theory, Artificial Intelligence, and Learning	12.RD	495,288	178,600
DARPA	HR00111990057	Acquiring language like children by grounding semantic parsing	12.RD	376,035	-
DARPA	HR00112010001	ML Assisted Superconducting Qubit Readout	12.910	65,711	-
DARPA	HR00112020013	Active Learning and Regeneration of Software Components for Cybersecurity	12.910	146,113	-
DARPA	HR00112090016	PAPPA	12.RD	65,486	-

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Federal Agency	Government Contract Number	Master Project Name	CFDA #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
DARPA	HR00112090017	High-Performance Productivity and Portability with Domain Specific Languages	12.RD	194,610	41,623
DARPA	HR00112090081	Novel vacuum-fluctuation based light sources from visible to X-Ray frequencies	12.RD	22,385	-
DARPA	HR001120C0015	Guaranteed Robust Artificial InteLligence (GRAIL)	12.RD	275,775	-
DARPA	HR0112090066	DIM3: Discrete Inverse Methods for Multiphysics Modeling	12.RD	4,874	-
DARPA	D19AP00037	Dislocation-free heteroepitaxy or IR devices by remote epitaxy	12.910	186,618	-
		Total for DARPA		**26,172,152**	**18,105,422**
Navy					
Navy	HQ00341810013	ASSESSING VULNERABILITIES IN MODEL-CENTRIC ACQUISITION PROGRAMS: PHASE 2	12.300	10,763	-
Navy	HQ00341910002	Investigation of Leading Indicators for Systems Engineering Effectiveness in Model-Centric Programs	12.300	26,640	-
Navy	N00014-14-1-0476	Long-duration Environmentally-adaptive Autonomous Rigorous Naval Systems (LEARNS)	12.300	-39,448	-
Navy	N00014-15-1-2381	A probalistic framework for the reduced-order modeling of rare events in water waves and mechanical systems	12.300	-3,606	-
Navy	N00014-15-1-2460	Computational Wave Hydromechanics in Support of Model Tests in The MASK Wave Basin	12.300	107,897	-
Navy	N00014-15-1-2616	Northern Arabian Sea Circulation - autonomous research: Optimal Planning Systems (NASCar-OPS)	12.300	1,069	-
Navy	N00014-15-1-2622	Investigating flow features near abrupt topography in the Mariana Basin	12.300	95,169	-
Navy	N00014-15-1-2626	High-Order Multi-Resolution Multi-Dynamics Modeling for FLEAT	12.300	86,828	-
Navy	N00014-16-1-2090	Time-Resolved Measurement of Physical and Chemical Evolution of Energetic Materials Under Dynamic Shock Loading	12.300	46,049	-
Navy	N00014-16-1-2141	Design and Operation of Efficient and Secure Navigation Networks	12.300	149,905	-
Navy	N00014-16-1-2333	Merger of Structure and Material for Materials By Design: Comparative Bottom-up Analysis and Manufacturing of Hierarchical Materials	12.300	-6,737	-
Navy	N00014-16-1-2432	Synthesis Genome for Novel Oxides: accelerating realization of advanced materials	12.300	159,634	93,331
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	30,601	-

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Federal Agency	Government Contract Number	Master Project Name	CFDA #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
Navy	N00014-16-1-2509	Synthetic Biology for Advanced Functional Materials	12.300	-11,083	-
Navy	N00014-16-1-2628	Resource Constrained Cooperative Underwater Localization and Mapping	12.300	-7	-
Navy	N00014-16-1-2657	Investigation of Emerging Quantum Materials and Topological Order	12.300	112,899	-
Navy	N00014-16-1-2815	Quantum simulators with ultracold atoms - mapping out possibilities for new materials	12.300	791,089	-
Navy	N00014-16-1-2945	Incorporating Distributed Systems in Early-Stage Set-Based Design of Navy Ships	12.300	136,284	-
Navy	N00014-16-1-2953	DNA Origami Scaffolds for Single-particle Cryo-Electron Microscopy of Viral RNA	12.300	52,383	17,774
Navy	N00014-16-1-2998	Lagrangian-based analysis of Kuroshio flow induced transport in the South-China Sea	12.300	-1,649	-
Navy	N00014-16-1-3031	Stability of Floating Bodies in a Stochastic Seastate	12.300	12,782	-
Navy	N00014-16-1-3105	Understanding Dynamic Stability of Advanced Ships in Steep Waves by Direct Fully-Nonlinear Computations	12.300	64,949	-
Navy	N00014-16-1-3116	Mapping the spatio-temporal dynamics of perception in the human brain	12.300	538,564	-
Navy	N00014-16-1-3163	A New Paradigm for Analysis of Complex, Networked, Social and Engineering Systems	12.300	680,293	-
Navy	N00014-17-1-2072	Context and Task-aware Active Perception for Multiagent Systems	12.300	596,117	290,729
Navy	N00014-17-1-2077	Simulation-Based Classification for Structural Health Monitoring; A Parametrized Component Model-Order-Reduction Approach	12.300	47,353	-
Navy	N00014-17-1-2089	Structures, Mechanisms & Statistics of Air-Entraining Free-Surface Turbulent Flows	12.300	19,397	-
Navy	N00014-17-1-2147	Statistical Learning Theory of Complex Causal Models	12.300	521,481	-
Navy	N00014-17-1-2177	Optimization Over Combinatorial Optimization Polytopes	12.300	125,432	-
Navy	N00014-17-1-2186	Observational Benchmarks for BSION project	12.300	125,557	-
Navy	N00014-17-1-2194	Fast, Exact, and Approximate Algorithms in Network and Combinatorial Optimization	12.300	43,267	-
Navy	N00014-17-1-2197	A Unified Approach to Passive and Active Ocean Acoustic Waveguide Remote Sensing	12.300	427,586	-
Navy	N00014-17-1-2253	Experiments with Trapped Neutral Atoms	12.300	198,921	-
Navy	N00014-17-1-2254	Optical-transition atomic clock beyond the standard quantum limit	12.300	172,464	-
Navy	N00014-17-1-2257	Topologically Protected Quantum States in Superfluid Fermi Gases	12.300	100,356	-
Navy	N00014-17-1-2379	A System for Efficient and Accurate Network Navigation (DURIP)	12.300	1,233	-

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Federal Agency	Government Contract Number	Master Project Name	CFDA #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
Navy	N00014-17-1-2474	Environmentally Adaptive Acoustic Communication and Navigation in the new Arctic	12.300	318,891	-
Navy	N00014-17-1-2598	Inference And Dynamics On Networks	12.300	28,959	-
Navy	N00014-17-1-2609	Hierarchical Nanoscale Materials Programmed using Structured DNA Nanoparticles	12.300	151,357	-
Navy	N00014-17-1-2670	Vision-based Agile Autonomous Navigation in Contested Environments using High-Performance Embedded Computing	12.300	325,312	-
Navy	N00014-17-1-2706	Glass under shock loading: Novel measurements at National Laboratory facilities.	12.300	-2,199	-
Navy	N00014-17-1-2790	Algorithmic Tractability and Computational Limits in High-Dimensional Linear Regression	12.300	99,213	-
Navy	N00014-17-1-2791	High-Dimensional Causal Prediction	12.300	87,153	-
Navy	N00014-17-1-2883	Complex Two-Dimensional Materials for Emergent Electronics	12.300	168,276	-
Navy	N00014-17-1-2920	Multi-Sensing Multi-Active Nanocomposite Coating for Quantitatively Characterizing Foulant-Surface Interactions and Controlled Fouling Release	12.300	160,032	-
Navy	N00014-17-1-2956	Computer-aided design of functional transition metal complexes	12.300	168,851	-
Navy	N00014-17-1-2959	Machine Learning Enabled Wall Modeling for LES of Turbulent Boundary Layers including Laminar Precursors	12.300	85,003	-
Navy	N00014-17-1-2977	Bridging the Nano-Macro gap for 3D Optical/Multi-functional Metamaterials	12.300	85,847	-
Navy	N00014-17-1-2985	Support Vector Machine Learning in Marine Hydrodynamic	12.300	57,282	-
Navy	N00014-18-1-2066	Optical Breakdown Acoustic Sources for Broadband Underwater Sensing	12.300	32,384	-
Navy	N00014-18-1-2079	Extended Formulations for Advanced Mixed Integer Convex Optimization	12.300	154,596	-
Navy	N00014-18-1-2085	ONR Graduate Traineeship Special Research Award in Ocean Acoustics Program for Daniel Michael Duane	12.300	98,459	-
Navy	N00014-18-1-2122	Online Optimization and Learning in a Complex Environment	12.300	150,342	-
Navy	N00014-18-1-2177	Fin-based Structures for Increasing Linearity in GaN Transistors	12.300	85,451	-
Navy	N00014-18-1-2187	Design and Metrology Support for High Power Fault Testing Systems	12.300	36,623	-
Navy	N00014-18-1-2210	Mathematical Certification of Mission Success Robustness for Multi-Agent Dynamic Group Action Models with Imperfect Perception	12.300	257,611	-
Navy	N00014-18-1-2258	Epitaxial Growth of Structural Proteins into Hierarchical Mesostructured Materials	12.300	99,224	-
Navy	N00014-18-1-2284	Tracking hydrogen: A multi-scale experimental-computational study of hydrogen influence on dislocations, plasticity, damage	12.300	220,274	-

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Federal Agency	Government Contract Number	Master Project Name	CFDA #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
Navy	N00014-18-1-2290	DURIP: DNA Synthesizer for the Development of New Modalities for DNA Nanostructures	12.300	0	-
Navy	N00014-18-1-2298	Combinatorial Statistical Inference with Mathematical Optimization	12.300	153,413	-
Navy	N00014-18-1-2378	Instrumentation To Enable Novel Real-Time Vibrational Spectroscopy Of Shocked Materials (DURIP)	12.300	48,311	-
Navy	N00014-18-1-2434	Adaptive-resolution chemical discovery strategies for precise and fast computer-aided transition metal complex design	12.300	108,260	-
Navy	N00014-18-1-2436	Thermal Management Technologies for Low-Temperature Undersea Dive Persistence: a Novel Arctic Diving Suit	12.300	26,141	-
Navy	N00014-18-1-2458	Numerical Superintensity of Tropical Cyclones: A Unique Challenge in Atmospheric Modeling	12.300	181,915	-
Navy	N00014-18-1-2496	VAMPIRE 3: A Decentralized Platform for Acoustic Diagnostics	12.300	259,384	-
Navy	N00014-18-1-2525	An Algorithmic Theory of Robustness	12.300	128,601	-
Navy	N00014-18-1-2762	Uncovering Lagrangian transport structures associated with oceanic fronts, meanders, eddies and filaments	12.300	61,417	-
Navy	N00014-18-1-2765	Robust Causal Methodology for Planning and Learning from Interventions in the Face of Uncertainty	12.300	4,836	-
Navy	N00014-18-1-2781	Four-Dimensional Lagrangian Analysis, Numerics, and Estimation Systems (4D-LANES)	12.300	164,246	-
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	253,616	-
Navy	N00014-18-1-2832	Technical Proposal: Task-Aware Non-Gaussian Perception and Planning for Distributed Marine Autonomy	12.300	313,037	-
Navy	N00014-18-1-2847	Integration of Physical Domain Knowledge and Machine Learning	12.300	539,645	-
Navy	N00014-18-1-2878	Complex Smart Colloids	12.300	607,433	-
Navy	N00014-18-1-2894	Data-Driven Non-Line-of-Sight Imaging	12.300	331,973	-
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	482,864	66,802
Navy	N00014-19-1-2091	Combat Power Monitor III	12.300	214,352	-
Navy	N00014-19-1-2114	Synthesis Genome for Novel Oxides: Accelerating Realization of Advanced Materials	12.300	60,261	-
Navy	N00014-19-1-2180	Algorithms for Distributed and Asynchronous Load Balancing in Multi-Objective Optimization for Robot Autonomy	12.300	83,589	-
Navy	N00014-19-1-2307	Thermal Management Technologies for Low-Temperature Undersea Dive Persistence: a Novel Arctic Diving Suit	12.300	158,474	-
Navy	N00014-19-1-2317	A de novo structural biopolymer library to predict, design and control the assembly of hierarchically mesostructured materials	12.300	166,162	-

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Federal Agency	Government Contract Number	Master Project Name	CFDA #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
Navy	N00014-19-1-2325	Wireless Communication through the Water-Air Interface	12.300	95,366	-
Navy	N00014-19-1-2344	DURIP: Combinatorial DNA nanoparticle libraries for structural biology and materials research	12.300	373,711	-
Navy	N00014-19-1-2359	High Current Experimental and Modeling Targeting Large Scale, Safe, Reliable and Cost-Effective Lithium Ion Battery Systems	12.300	248,744	-
Navy	N00014-19-1-2362	Enabling Crowd-Scale Deliberation For Complex Problems	12.300	145,879	-
Navy	N00014-19-1-2375	Materials By Design: Rational Modeling, Optimization and Synthesis of Heterogeneous Materials	12.300	107,845	-
Navy	N00014-19-1-2584	Towards more biologically plausible learning in neural networks	12.300	89,593	-
Navy	N00014-19-1-2605	The Integrated Sea Ice Dynamic Experiment (SIDEx)	12.300	145,888	-
Navy	N00014-19-1-2607	The Integrated Sea Ice Dynamics Experiment (SIDEx)	12.300	44,801	-
Navy	N00014-19-1-2631	Analog Quantum Computing with a Molecular Quantum Gas Microscope	12.300	464,925	-
Navy	N00014-19-1-2664	Dynamic Environmental Estimation, Prediction, and Acoustic Inference (DEEP-AI)	12.300	164,681	-
Navy	N00014-19-1-2665	Data Driven Methods for Structure Learning in Underwater Acoustic Modeling	12.300	36,303	-
Navy	N00014-19-1-2676	Laser system for array of entangled atomic clocks and quantum simulation	12.300	246,509	-
Navy	N00014-19-1-2693	Interdisciplinary Nonlinear Bayesian Data Assimilation	12.300	168,183	-
Navy	N00014-19-1-2716	Assessing Realism and Uncertainties in Navy Decision Aids	12.300	59,860	-
Navy	N00014-19-1-2724	Network Science for Time-Critical Missions: Inference, Control, Learning, and Decision Making	12.300	19,067	-
Navy	N00014-19-1-2741	Environmentally Adaptive Autonomy for Under-Ice Acoustic Navigation and Communication	12.300	204,868	51,693
Navy	N00014-20-1-2023	Machine Learning for Submesoscale Characterization, Ocean Prediction, and Exploration (ML-SCOPE)	12.300	240,552	118,367
Navy	N00014-20-1-2035	A Unified Approach to Passive and Active Ocean Acoustic Waveguide Remote Sensing	12.300	70,725	-
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	114,773	-
Navy	N00014-20-1-2084	Synthetic Nucleic Acid Nanoparticles for RNA Structural & Synthetic Biology	12.300	94,874	12,367
Navy	N00014-20-1-2119	Management and Control of Highly-Dynamic Tactical Networks in Disruptive Environments	12.300	2,944	-
Navy	N00014-20-1-2150	A database for functional transition metal complex discovery	12.300	19,498	-
Navy	N00014-20-1-2221	Searching for new aluminum/gallium and electrolyte combinations for high-energy energy generation systems	12.300	29,511	-

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Federal Agency	Government Contract Number	Master Project Name	CFDA #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
Navy	N00014-20-1-2280	Synthesis Genome for Inorganic Materials: Case Oriented Proposal	12.300	5,347	-
Navy	N00014-20-1-2300	Nano-Curing Embedded Heaters for Extreme Performance of Sea-based Airframe Structures	12.300	18,056	-
Navy	N00014-20-1-2353	Dashboard Maintenance and Tactical Decision Aid	12.300	17,099	-
Navy	N00014-20-1-2366	Physics-informed, machine learning methods for the quantification of extreme ocean events for naval vessels	12.300	14,165	-
Navy	N00014-20-1-2394	Optimization, Federated learning, and high dimensional statistics for large-scale machine learning	12.300	13,743	-
Navy	N00014-20-1-2428	Optical-transition atomic clock beyond the standard quantum limit	12.300	31,526	-
Navy	N00014-20-1-2561	Understanding Extreme Response and Damage of Biological Materials	12.300	4,648	-
Navy	N00014-20-1-2749	Security Monitors for Control Systems	12.300	134,136	-
Navy	N00173-18-1-G011	Broadband Data Communications through Guided T-Ray	12.300	33,703	-
Navy	N00173-19-1-G003	STROBE-X Science Requirements and Wide Field Monitor Definition	12.300	19,931	-
Navy	N00189-14-C-Z082	Engineering Support for the Interagency Correlator	12.RD	13,851	-
Navy	N0018918PZ468	VLBI Storage and Data Validation Depot	12.RD	9,041	-
Navy	N0018919PZ315	Engineering Support for the Interagency Very-Long Baseline Interferometry (VLBI) Correlator	12.RD	85,993	-
Navy	N66001-13-C-4025	INSCyT 2: Phase II Parent	12.RD	20,564	-
Navy	N66001-13-C-4025	Integrated and Scalable Cyto-Technologies (INSCyT) for Flexible Microbial Manufacturing	12.RD	392,266	-
Navy	N66001-14-2-4058	Synthetic polymer xenoproteins	12.910	7,979	-
Navy	N66001-16-1-4038	Enhancing Lifetime and Performance of Field Emitter Array Cathodes	12.910	3,479	-
Navy	N66001-16-C-4005	Pharmacy on Demand Phase III: Compact, On-Demand Continuous Flow Manufacturing of Pharmaceuticals	12.RD	0	-
Navy	N66001-16-C-4039	Novel Millimeter Wave Klystron Amplifier	12.RD	336,293	33,739
Navy	N66001-17-1-4039	The Promise of Diversity: Geometry, Probability, Optimization and Machine Learning	12.910	171,670	-
Navy	N66001-17-2-4054	Daisy drive systems for the precise alteration of local populations	12.910	1,398,539	1,346,496
		Total for Navy		**18,558,432**	**2,031,298**
Other DOD					
Other DOD	H98230-19-C-0292	MIT Center for Quantum Engineering (MIT-CQE)	12.RD	46,479	-
Other DOD	2019-19020100001	Exploring and Understanding Co-designed Systems	12.RD	439,530	-

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Federal Agency	Government Contract Number	Master Project Name	CFDA #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
Other DOD	HDTRA1-13-1-0038	Nucleopore Membrane Mimics As Selective Filters for Biological Agents	12.351	1,471	-
Other DOD	HDTRA1-14-1-0007	Engineered Autonomous Distributed Circuits for Adaptive Threat Elimination	12.351	91,129	-
Other DOD	HDTRA1-14-1-0057	Radiation Effects in III-V MOSFETs for sub-10 nm CMOS	12.351	166,597	87,325
Other DOD	HDTRA1-15-1-0040	Development of Synthetic Probiotics to Detect and Eliminate Biothreat Agents	12.351	-50	-
Other DOD	HDTRA1-15-1-0050	Deciphering Novel Mechanisms of Antimicrobial Resistance with Massively Parallel Combinatorial Genetics	12.351	410,503	-
Other DOD	HDTRA1-15-1-0051	Gene Duplication and Amplification in the Evolution of Antimicrobial Resistance: Clinical Significance and Diagnostic Potential	12.351	370,647	-
Other DOD	HDTRA1-16-1-0038	Using Coacervates to Maximize Enzymatic Activity at Interfaces for Heavy Metal Detection	12.351	147,383	-
		Total for Other DOD		**1,673,689**	**87,325**
		TOTAL for Department of Defense		**93,060,970**	**28,269,988**

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Federal Agency	Government Contract Number	Master Project Name	CFDA #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
DEPARTMENT OF COMMERCE					
DOC	70NANB17H177	Situational Awareness For Emergencies Through Network-Enabled Technologies (SafeT-N	11.609	244,052	-
DOC	70NANB18H211	Expanding Access to Materials Measurement, Modeling, and Design	11.609	67,832	-
DOC	70NANB20H014	Open Materials Metrology and Modeling (OM3)	11.609	21,731	-
DOC	NA14OAR4170077	2014 Parent Account: Sea Grant College Program	11.417	33,906	15,216
DOC	NA16OAR4310112	Influence of atmospheric ageing on fire-derived carbonaceous particles: laboratory studies and modeling in support of FIREX	11.431	139,907	-
DOC	NA16OAR4310177	Exploring linkages between AMOC and ITCZ variability	11.431	127,114	-
DOC	NA17OAR4170295	Tlusty- Real Time Detection of Vibrio for Oyster Aquaculture	11.417	125,138	82,832
DOC	NA18NWS4680058	New Frameworks for Predicting Extreme Rapid Intensification	11.468	128,189	105,139
DOC	NA18OAR4170105	2018 Omnibus: Sea Grant College Program	11.417	1,633,712	300,696
DOC	NA18OAR4310110	The aging of aerosol nitrate and implications for the global nitrogen cycle	11.431	225,341	-
DOC	NA19OAR4310180	Exploring the trend in inorganic aerosol deposition	11.431	21,631	-
		Total for Department of Commerce		**2,768,551**	**503,883**
		TOTAL for Department of Commerce		**2,768,551**	**503,883**

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Federal Agency	Government Contract Number	Master Project Name	CFDA #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
DEPARTMENT OF ENERGY					
DOE	656002	US CMS DAQ Subsystem	81.RD	241,414	-
DOE	659688	High Luminosity (HL) LHC CMS Detector Upgrade Project Trigger & DAQ: Track Correlator Trig	81.RD	5,996	-
DOE	DE-AR0000625	INTEGRATED MICRO-OPTICAL CONCENTRATOR PHOTOVOLTAICS WITH LATERAL MULTIJUNCTION CELLS	81.135	-347	-
DOE	DE-AR0000632	Wafer-Level Integrated Concentrating Photovoltaics	81.135	182,516	-
DOE	DE-AR0000713	Generating Realistic Information for Development of Distribution and Transmission Algorithms	81.135	180,027	129,977
DOE	DE-AR0000847	Seamless Hybrid-integrated Interconnect NEtwork (SHINE)	81.135	399,878	203,741
DOE	DE-AR0001005	Thermal Energy Grid Storage (TEGS) Using Multi-Junction Photovoltaics (MPV)	81.135	297,293	-
DOE	DE-AR0001066	Multimetallic Layered Composites (MMLCs) for Rapid, Economical Advanced Reactor Deployment	81.135	292,645	104,451
DOE	DE-AR0001130	MULTISCALE POROUS HIGH-TEMPERATURE HEAT EXCHANGER USING CERAMIC COEXTRUSION	81.135	406,116	155,029
DOE	DE-AR0001133	CARBONHOUSE: A SCALABLE ALL-CARBON BUILDING LOGIC DERIVED FROM HYDROCARBON RESOURCES	81.135	38,380	-
DOE	DE-AR0001154	Distributed nuclear reactor core monitoring with single-crystal harsh-environment optical fibers	81.135	42,834	-
DOE	DE-AR0001218	Machine learning assisted models for understanding and optimizing boiling heat transfer on scalable random surfaces	81.135	76,893	-
DOE	DE-EE0007531	Improving Tolerance of Yeast to Lignocellulose-Derived Feedstocks and Products	81.087	348,432	-
DOE	DE-EE0007535	Low Cost (CAPEX and variable): Tool design for cell and module fabrication with thin, free-standing silicon wafers	81.087	56,019	-
DOE	DE-EE0007662	Modeling Photovoltaics Innovation and Deployment Dynamics	81.117	188,812	-
DOE	DE-EE0007810	Self-assembling rechargeable Li batteries from alkali and alkaline-earth halides	81.086	330,027	156,605
DOE	DE-EE0007982	Rapid Construction of Validated Chemistry Models for Advanced Biofuels	81.087	333,644	192,574
DOE	DE-EE0008316	A direct process for wire production from sulfide concentrates	81.086	586,363	-
DOE	DE-EE0008375	Ceramic Castable Cement Tanks and Piping for Molten Salt	81.087	798,254	488,303
DOE	DE-EE0008381	High temperature pumps and valves for molten salt	81.087	1,133,734	693,635
DOE	DE-EE0008558	Low-cost, high-efficiency III-V photovoltaics enabled by remote epitaxy through graphene	81.087	354,895	113,721

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Federal Agency	Government Contract Number	Master Project Name	CFDA #	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	132,749	-
DOE	DE-EE0009165	Multifunctional Optical Outcouplers for Efficient and Stable White OLEDs	81.086	37,224	-
DOE	DE-EM0004484	NRI: Extra Robotic Limbs for Body Support in Kneeling and Crouching Works	81.104	5,349	-
DOE	DE-FC02-08ER54966	Center for the Study of Microturbulence	81.049	111,727	-
DOE	DE-FC02-93ER54186	Fusion Development and Technology - Parent	81.049	548,801	-
DOE	DE-FC02-99ER54512	Alcator C-Mod	81.049	62	-
DOE	DE-FE0026489	Electrochemically-Mediated AmineRegeneration In CO2 Scrubbing Processes	81.089	492,607	-
DOE	DE-FE0031668	Robust highly durable solid oxide fuel cell cathodes - Improved materials compatibility & self-regulating surface chemistry	81.089	221,683	-
DOE	DE-FE0031677	AOI 4 Capillary-driven Condensation for Heat Transfer Enhancement in Steam Power Plants	81.089	288,136	-
DOE	DE-FG02-00ER15087	Ultrafast Coherent Soft X-Rays: A Novel Tool for Spectroscopy of Collective Behavior in Complex Materials	81.049	0	-4,593
DOE	DE-FG02-02ER45977	Fundamental Studies on Heat Conduction in Polymers	81.049	182,785	-
DOE	DE-FG02-03ER46076	Strongly Correlated Electronic Systems: Local Moments and Conduction Electrons	81.049	156,051	-
DOE	DE-FG02-03ER54700	Physics of High Energy Plasmas	81.049	38,200	-
DOE	DE-FG02-07ER46454	PROBING EXCITONS IN CONFINED ENVIRONMENTS USING PHOTON-RESOLVED METHODS	81.049	338,377	-
DOE	DE-FG02-07ER46474	Bimolecular Interactions in Organic Semiconductors: Hot charge, Hot excitons, Efficiency Droop, and Instability	81.049	305,365	-
DOE	DE-FG02-08ER46488	Materials Exhibiting Biomimetic Carbon Fixation and Self-Repair: Theory and Experiment	81.049	198,810	-
DOE	DE-FG02-08ER46514	Novel Temperature Limited Tunneling Spectroscopy of Quantum Hall Systems	81.049	167,441	-
DOE	DE-FG02-08ER46521	Ultrafast Electronic and Structural Dynamics in Quantum Materials	81.049	322,664	-
DOE	DE-FG02-87ER13671	Dynamics Encoded in Eigenstate-Resolved Spectra of Small, Reactive Molecules	81.049	39,308	-
DOE	DE-FG02-91ER54109	Theoretical Research in Advanced Physics and Technology (Renewal/Continuation of 6931788)	81.049	1,305,598	-
DOE	DE-FG02-94ER40818	Research in Nuclear Physics: Medium Energy Nuclear Physics	81.049	276,372	-
DOE	DE-FG02-94ER54235	APTE Parent	81.049	92,518	-
DOE	DE-FG02-94ER61937	An Integrated Framework for Climate Change Assesment	81.049	0	-

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Federal Agency	Government Contract Number	Master Project Name	CFDA #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
DOE	DE-FG02-94ER61937	An Integrated Framework for Climate Change Assessment	81.049	368,064	49,920
DOE	DE-FG02-94ER61937	Sectoral Interactions, Compounding Influences and Stressors, and Complex Systems: Understanding Tipping Points and Non-Linear Dynamics	81.049	323,253	-
DOE	DE-FG02-99ER15004	Physics of Channelization: Theory, Experiment, and Observation	81.049	33,000	-
DOE	DE-FG02-99ER54563	Fast Particle Wave Interaction and Alfven Eigenmodes in the JET Tokamak Plasma	81.049	-617	-
DOE	DE-NA0002949	STUDYING HYDRODYNAMICS, KINETIC/MULTI-ION EFFECTS, AND CHARGED-PARTICLE STOPPING IN HED PLASMAS AND ICF IMPLOSIONS AT OMEGA, OMEGA-EP AND AT THE NIF	81.112	9,340	-
DOE	DE-NA0003539	HEDP EXPLORATIONS OF KINETIC PHYSICS, PLASMA STOPPING POWER, HOHLRAUM FIELDS AND NUCLEAR ASTROPHYSICS	81.112	8,938	-
DOE	DE-NA0003868	Center for Advanced Nuclear Diagnostics and Platforms for ICF and HED Physics at Omega, NIF, and Z	81.113	1,600,946	100,960
DOE	DE-NA0003938	High-Energy-Density Physics, Laboratory Astrophysics, and Student Training on OMEGA	81.112	152,238	-
DOE	DE-NE0008285-001	Integrated FHR Technology Development: Tritium Management, Materials Testing, Salt Chemistry Control, Thermal-Hydraulics and Neutronics with Associated Benchmarking	81.121	0	-
DOE	DE-NE0008413	Multilayer Composite Fuel Cladding for LWR Performance Enhancement and Severe Accident Tolerance	81.121	63,053	2,226
DOE	DE-NE0008578	MULTI-GROUP TRANSPORT CROSS SECTION & DIFFUSION COEFFICIENT GENERATION FOR DETERMINISTIC REACTOR MODELS USING MONTE CAROL CALCULATIONS.	81.121	144,004	-
DOE	DE-NE0008693	Determination of Critical Heat Flux and Leidenfrost Temperature on Candidate Accident Tolerant Fuel Materials	81.121	210,808	197,112
DOE	DE-NE0008734	Establishing MIT's Experimental Capabilities for Fuel Performance Investigations	81.121	94,477	-
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	270,207	-
DOE	DE-NE0008752	Evaluation of Economics Benefits of Accident Tolerant Plants Through Risk-Informed Approaches	81.121	240,702	58,436
DOE	DE-NE0008827	Nanodispersion Strengthened Metallic Composites with Enhanced Neutron Irradiation Tolerance	81.121	207,999	-
DOE	DE-NE0008871	Simultaneous Corrosion/Irradiation Testing in Lead and Lead-Bismuth Eutectic: The Radiation Decelerated Corrosion Hypothesis	81.121	163,728	24,796
DOE	DE-NE0008872	Demonstrating Reactor Autonomous Control Framework using Graphite Exponential Pile	81.121	49,961	-

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Federal Agency	Government Contract Number	Master Project Name	CFDA #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
DOE	DE-NE0008873	Design of risk informed autonomous operation for advanced reactor	81.121	113,886	38,260
DOE	DE-SC0001299	Solid-State Solar-Thermal Energy Conversion Center (S3TEC)	81.049	0	158
DOE	DE-SC0002626	Electrochemically-Driven Phase Transitions in Battery Storage Compounds	81.049	12,909	-
DOE	DE-SC0002633	SISGR: Chemomechanics of Far-From Equilibrium Interfaces	81.049	644,971	-
DOE	DE-SC0007106	Engineered Protein Nanostructures for Advanced Functional Materials	81.049	255,187	-
DOE	DE-SC0008739	Unconventional Metals in Strongly Correlated Systems	81.049	115,169	-
DOE	DE-SC0008744	Optimizing oil production in oleaginous yeast by cell-wide measurements and genome-based models.	81.049	330,515	175,000
DOE	DE-SC0010492	Control and Extension of High Performance Scenarios to Long Pulse	81.049	535,144	-
DOE	DE-SC0010492	Long Pulse High Performance Scenarios and Control in EAST	81.049	15,660	-
DOE	DE-SC0010720	Development of long-pulse heating and current drive actuators and operational techniques compatible with a high-Z divertor and first wall	81.049	431	-
DOE	DE-SC0011088	MIT Relativistic Heavy Ion Group	81.049	1,732,159	-
DOE	DE-SC0011090	FY2017-2019 Task R-Theoretical Nuclear	81.049	569,529	-
DOE	DE-SC0011090	FY2020 - 2022 Task R Theoretical Nuclear Physics	81.049	534,613	-
DOE	DE-SC0011091	Neutrino Physics – Task W	81.049	184,272	-
DOE	DE-SC0011091	Task W - Neutrino Physics	81.049	150,009	-
DOE	DE-SC0011755	AMS Operations	81.049	1,666,592	-
DOE	DE-SC0011755	PARENT OF AMS-02 OPERATIONS	81.049	1,300,821	-
DOE	DE-SC0011848	AMS Research	81.049	769,322	-
DOE	DE-SC0011848	PARENT OF AMS-02 RESEARCH	81.049	721,515	-
DOE	DE-SC0011939	Task A: Particle Physics Collaboration	81.049	969,780	-
DOE	DE-SC0012071	Support of US Burning Plasma Organization	81.049	191,899	-
DOE	DE-SC0012371	Interface-Driven Chiral Magnetism in Ultrathin Metallic Ferromagnets: Towards Skyrmion Spintronics	81.049	-301	-
DOE	DE-SC0012470	MDSPlus Development and Support 2017-20	81.049	651,545	-
DOE	DE-SC0012555	Systems Biology Towards a Continuous Platform for Biofuels Production	81.049	427	1,372
DOE	DE-SC0012567	Task C: Theoretical High Energy Physics	81.049	748,029	-
DOE	DE-SC0013905	Study of Heavy Flavor Mesons and Flavor-Tagged Jets with the CMS Detector	81.049	43,599	-
DOE	DE-SC0013999	Confronting Dark Matter with the Multiwavelength Sky	81.049	149,246	-

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Federal Agency	Government Contract Number	Master Project Name	CFDA #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
DOE	DE-SC0014176	Tunable Oxygen Reduction Electrocatalysis by Phenazine-Modified Carbons	81.049	97,221	-
DOE	DE-SC0014229	Phase Contrast Imaging for Wendelstein 7-X	81.049	306,594	69,307
DOE	DE-SC0014251	Gas-Puff-Imaging for Diagnosis of Boundary and SOL Physics in W7-X	81.049	193,075	-
DOE	DE-SC0014264	MIT Plasma Science and Fusion Center Magnetic Confinement Fusion Experiment Research and Related Activities	81.049	7,796,091	-
DOE	DE-SC0014901	Computer-Aided Construction of Chemical Kinetic Models	81.049	108,049	-
DOE	DE-SC0015566	High Frequency High Gradient Accelerator Research	81.049	407,237	-
DOE	DE-SC0015566	High Frequency, High Gradient Accelerator Research	81.049	-4	-
DOE	DE-SC0016154	Measurement of Helicons and Parametric Decay Waves in DIII-D with Phase Contrast Imaging	81.049	372,204	-
DOE	DE-SC0016214	Catalysis Beyond the Active Site: Pore Engineering in Lewis Acid Zeolites for Enhanced Cycloaddition Chemistry	81.049	138,183	-
DOE	DE-SC0016214	Molecular Understanding of Bifunctional Solid Lewis Acid Zeolites for the C-C Coupling of Alpha Keto Acids	81.049	48,364	-
DOE	DE-SC0016215	Magnetic Reconnection in Strongly-Magnetized, Weakly-Collisional Plasmas: Onset, Turbulence, and Energy-Partition in 3D, Plasmoid-Dominated Regimes	81.049	49,601	-
DOE	DE-SC0016285	AMS THERMAL COOLING SYSTEM	81.049	113,293	-
DOE	DE-SC0016408	Control of the Plasma-Material Interface for Long Pulse Optimization in EAST and KSTAR	81.049	273,392	-
DOE	DE-SC0016409	Disruption Prediction and Avoidance in High Beta Long Pulse KSTAR Plasmas	81.049	35,041	-
DOE	DE-SC0017381	Electron Temperature Fluctuation and n-T Phase Angle Measurements for Validation of Gyrokinetic Transport Models at ASDEX Upgrade	81.049	463,736	-
DOE	DE-SC0017936	Collaborative Proposal: R&D Toward CUPID, a Tonne-Scale Bolometric OvBB Experiment	81.049	20,847	-
DOE	DE-SC0018090	Center for Integrated Simulation of Fusion Relevant RF Actuators	81.049	520,529	217,762
DOE	DE-SC0018091	Microparticle Supersonic Impact: A Testbed for the Exploration of Metals under Extreme Conditions	81.049	295,868	-
DOE	DE-SC0018094	Nonequilibrium Properties of Driven Electrochemical Interfaces	81.049	108,167	-
DOE	DE-SC0018095	Development of an Ultrahigh-bandwidth Phase Contrast Imaging System for detection fo Electron scale turbulence and Gigahertz Radiofrequecny Waves	81.049	116,267	-
DOE	DE-SC0018096	Simultaneous mitigation of density and energy errors in approximate DFT for transition metal chemistry	81.049	74,714	-

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Federal Agency	Government Contract Number	Master Project Name	CFDA #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
DOE	DE-SC0018097	Interrogating protein-protein association through spectroscopic studies of model membranes	81.049	181,522	-
DOE	DE-SC0018121	Computing the Properties of Matter with Leadership Computing Resources	81.049	476,324	-
DOE	DE-SC0018229	MIT-Bates Research and Engineering Center	81.049	1,823,959	-
DOE	DE-SC0018235	Fundamental studies of thermal and electrical transport in microporous metal-organic frameworks	81.049	192,484	-
DOE	DE-SC0018357	Nonequilibrium Physics of Multiphase Flow in Porous Media: Wettability and Disorder	81.049	309,448	-
DOE	DE-SC0018652	Quantum simulation: From spin models to gauge-gravity correspondence	81.049	-107	-
DOE	DE-SC0018934	Exploring Natural Aerosol Formation from DMS Oxidation and Implications for Aerosol Forcing	81.049	190,143	-
DOE	DE-SC0018935	Interplay of Magnetism and Superconductivity in van der Waals Heterostructures	81.049	275,692	-
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	133,845	-
DOE	DE-SC0018944	The Black Hole Interior in AdS/CFT and Beyond	81.049	164,427	-
DOE	DE-SC0018945	Predictive Theory of Topological States of Matter	81.049	105,648	-
DOE	DE-SC0018947	Portable Parallel Algorithms and Frameworks for Exascale Graph Analytics	81.049	101,990	-
DOE	DE-SC0019087	Rational Sub-Nanometer Manipulation of Polymer Morphology for Efficient Chemical Separations	81.049	177,367	-
DOE	DE-SC0019089	Feasibility Study: High-k Temperature (HiT) Fluctuation Diagnostic	81.049	87,411	-
DOE	DE-SC0019112	The Center for Enhanced Nanofluidic Transport (CENT)	81.049	2,189,305	1,460,050
DOE	DE-SC0019126	Novel Terahertz-Induced Quantum States Probed with Ultrafast Coherent X-Rays	81.049	692,069	174,057
DOE	DE-SC0019127	Algebraic Approach Toward Quantum Information in Quantum Field Theory and Holography	81.049	135,660	-
DOE	DE-SC0019128	Quantum Algorithms for Collider Physics	81.049	114,084	-
DOE	DE-SC0019129	Bosonic Dark Matter Search Using Superconducting Nanowire Single-Photon Detectors	81.049	230,661	-
DOE	DE-SC0019295	Investigating Natural Radioactivity in Superconducting Qubits	81.049	373	-
DOE	DE-SC0019345	Excitons in Low-Dimensional Perovskites	81.049	232,091	-
DOE	DE-SC0019383	Real-time Measurements of Complex Transition Metal Oxide Nanostructure Growth	81.049	82,302	6,784
DOE	DE-SC0019768	Search for a Non-Zero Value of the Electric Dipole Moment of the Neutron	81.049	119,535	-

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Federal Agency	Government Contract Number	Master Project Name	CFDA #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
DOE	DE-SC0019998	Controlling Exciton Dynamics with DNA Origami for Quantum Information Science	81.049	246,141	-
DOE	DE-SC0019999	Medium Energy Nuclear Physics: Exotic Physics & Advanced Tools at J.Lab and the EIC	81.049	416,804	-
DOE	DE-SC0020042	Novel 2D materials and Structures via Janus Manipulation	81.049	168,227	-
DOE	DE-SC0020148	Tracing the Topological Fingerprint of Weyl Semimetals Using Neutron Probes	81.049	232,116	-
DOE	DE-SC0020149	Creating and Probing Large Gap 2D Topological Insulators for Quantum Computing	81.049	456,153	-
DOE	DE-SC0020180	Discovery and Design of Stable Nanocrystalline Alloys: The Grain Boundary Segregation Genome	81.049	147,499	-
DOE	DE-SC0020181	Quantum Devices for Neutrino and Rare Particle Detection	81.049	74,581	50,922
DOE	DE-SC0020240	Short-Range Correlations in Nuclei and the EMC Effect	81.049	916,891	-
DOE	DE-SC0020264	Quantum algorithms for fusion-plasma dynamics	81.049	68,720	37,858
DOE	DE-SC0020265	Study of Short-Range Correlations in Nuclei Using Electro-induced Nucleon-knockout Reactions at High Momentum-Transfer	81.049	16,343	-
DOE	DE-SC0020327	Boundrary, SOL, and Divertor Physics Studies on TCV	81.049	393,151	-
DOE	PO #629763	US CMS Common Operations	81.RD	-50	-
DOE	PO 101633	Investigation of Nucleate Boiling Suppression in Annular Flow using Advanced Imaging Diagnostics and CFD Simulations	81.RD	-3,094	-
DOE	PO NO. 646969	High Luminosity (HL) LHC CMS Detector Upgrade Project Trigger & DAQ: Track Correlator Trig	81.RD	-4,284	-
DOE	PO-606667	US CMS HCAL Subsystem	81.RD	0	-
DOE	SC-19-487	Center for the Advancement of Topological Semimetals (CATS)	81.RD	163,920	-
DOE	SUB NO. 652561	LPC Distinguished Researchers award - Markus Klute	81.RD	-2,764	-
DOE	SUB NO. 656089	US CMS COMMON OPERATIONS	81.RD	27,903	-
DOE	SUBCONTRACT NO. 655714	US CMS Hadron Calorimeter (HCAL) Subsystem	81.RD	36,563	-
		Total for Department of Energy		**50,812,199**	**4,898,423**
		TOTAL for Department of Energy		**50,812,199**	**4,898,423**

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Federal Agency	Government Contract Number	Master Project Name	CFDA #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
DEPARTMENT OF HEALTH & HUMAN SERVICES					
Other HHS					
HHS	1-U01FD006483-01	Smart Data Analytics for Risk Based Regulatory Science and Bioprocessing Decisions	93.103	884,977	-
HHS	1-U01-FD006751-01	Novel Process Analytic Technology for Continuous Bioprocessses	93.103	982,034	-
HHS	5-R01-FD006584-02	Continuous Viral Vector Manufacturing based on Mechanistic Modeling and Novel Process Analytics	93.103	463,774	-
HHS	5-R01-FD006584-03	Continuous Viral Vector Manufacturing based on Mechanistic Modeling and Novel Process Analytics	93.103	290,831	-
HHS	5-U01FD006483-02	Smart Data Analytics for Risk Based Regulatory Science and Bioprocessing Decisions	93.103	929,679	-
HHS	75A50119C00076	3D Vaccine Printer	93.RD	206,880	-
HHS	HHSP233201500054C DUNS# 001425594	Web Accessibility Initiative (WAI) Core	93.RD	495,161	-
HHS	U01FD006755-01	Integrated Continuous Processing Facility for Small Molecule and Biologic Lyophilized Final Dosage Forms	93.103	184,470	-
		Total for Other HHS		**4,437,804**	**-**
NIH					
NIH	1 K99 GM126277-02 REVISED	Non-cleaved Electro-Mechanical Expansion (NEME) technology for super-resolution imaging of biological samples with conventional optical microscopes	93.859	28,585	-
NIH	1 RF1 MH117809-01	From Electron Microscopy to Neural Circuit Hypotheses: Bridging the Gap	93.242	660,186	145,009
NIH	1DP2AI136597-01	Developing powerful daisy drive systems for the precise alteration of local populations	93.310	732,508	-
NIH	1DP2ES027992	Proteome-Driven Holistic Reconstruction of Organ-Wide Multi-Scale Networks	93.310	292,828	-
NIH	1-DP2-GM119162-01	Continuous Directed Evolution of Biomolecules in Human Cells for Medical Research	93.310	137,287	-
NIH	1DP2GM119419	"Bottom-up" Profiling of Interacting Cellular Systems	93.310	602,765	-
NIH	1DP2GM128200-01	Nanometer distance assay to uncover protein dynamics	93.859	530,325	-
NIH	1-F30-CA236179-02 REVISED	Regulation by mTORC1 of the lysosomal efflux of essential amino acids	93.398	51,272	-
NIH	1-F30-CA239407-01 REVISED	Automatic Volumetric Treatment Response Assessment and Determination of Regional Genetic Characteristics in Glioblastoma	93.398	44,949	-
NIH	1-F31-CA250171-01	Characterizing the Physicochemical Properties of Estrogen Receptor-mediated Transcriptional Condensates in Breast Cancer	93.398	9,886	-

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Federal Agency	Government Contract Number	Master Project Name	CFDA #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NIH	1-F31-GM131648-01	Structural Basis of Metallocofactor Delivery and Repair	93.859	20,408	-
NIH	1-F31-HG010818-01A1	Leveraging biological pathways, gene networks, and functional annotations to understand the genetic architecture of diseases and complex traits	93.172	22,140	-
NIH	1-F32-CA247274-01-REVISED	Genomic incorporation of stapled peptides for cost effective discovery and synthesis of novel therapeutics - PDF: Emma Chory	93.398	19,449	-
NIH	1-F32-DK122762-01A1 REVISED	Simultaneous gastric and brain electrical interfacing for development of endoscopic gastric stimulation treatments for gastroparesis	93.847	23,565	-
NIH	1-F32-EB025688-01A1 REVISED	Engineering damage associated molecular patterns to promote tissue regeneration	93.286	10,950	-
NIH	1-F32-GM126645-01 REVISED	Structurally Deformed Phosphorus Catalysis for Amidation, Hydroamination, and Olefin Metathesis Reaction	93.859	-810	-
NIH	1-F32-GM131633-01 REVISED	Synthesis of C-Glycosides and a-Aryl Ethers via Metal-Redox Catalysis	93.859	-207	-
NIH	1-F32-GM133116-02	Chemical probes of mycobacterial growth and persistence	93.859	70,860	-
NIH	1-F32-GM134568-01A1	Defining Adaptors for mRNA Degradation in Bacteria	93.859	21,100	-
NIH	1F32GM136023-01 REVISED	Design and synthesis of nucleoside-based small molecules to inhibit phosphoglycosyl transferases	93.859	28,775	-
NIH	1-F32-GM137477-01	Developing glycan-directed tools to investigate microbial infection	93.859	20,225	-
NIH	1-F32-GM137478-01	Primary and Secondary Sphere Effects on the Valence Isomerism of Fe-S Clusters	93.859	16,265	-
NIH	1-F32-GM137543-01	Developing Cyclopentadiene as a Reagent in Bioorthogonal Chemistry	93.859	17,912	-
NIH	1-F32-NS114358-01	Molecular mechanism of CPG15 mediated activity-dependent synaptic plasticity	93.853	30,359	-
NIH	1-F32-NS116107-01	New molecular pathways that link gut microbiota to neural circuit activity and behavior	93.853	13,313	-
NIH	1K08MH116135-02	Determining optimal parameters for dynamic cholinergic modulation of associative learning	93.242	30,521	-
NIH	1-K99-CA241072-01A1	Exploring the impact of HSP90 inhibition on antigen presentation and anti-tumor immune responses	93.398	41,371	-
NIH	1-K99-DK123407-02	Elucidating the role of fasting in intestinal stemness and tissue regeneration	93.847	77,065	-
NIH	1K99EB027706-01A1	Developing next generation multiphoton systems to reveal cortico-thalamic interactions underlying short-term memory in behaving mice	93.286	12,165	-
NIH	1-K99-EB028311-01 REVISED	Engineering a diagnostic platform for rapid breath-based respiratory pathogen identification and treatment monitoring	93.286	73,371	-

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Federal Agency	Government Contract Number	Master Project Name	CFDA #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NIH	1-K99-GM135536-01	In-depth characterization of the metabolic effect of the bacterial alamorne ppGpp	93.859	48,309	-
NIH	1-P41-GM132079 -01	MIT Harvard Center for Magnetic Resonance-Year 1	93.859	68,414	-
NIH	1-P41-GM132079-02	MIT Harvard Center for Magnetic Resonance-Year 1	93.859	82,847	-
NIH	1-R01-AG062335-01	Elucidating the Molecular Mechanisms of Neuropsychiatric Symptoms in Alzheimer's Disease	93.866	267,933	-
NIH	1-R01-CA206218-01A1	Reprogramming the tumor microenvironment via self-amplified RNA (SafeR) circuits	93.396	236,035	-
NIH	1-R01-CA207029-01A1	RNA circuits for cell state determination in mammalian cells in vitro and in vivo	93.394	194,028	194,028
NIH	1-R01-CA220468-01	Organic nanoparticles for dual MRI-guided therapeutic selection and ovarian cancer drug delivery	93.394	121,859	104,506
NIH	1-R01-CA226898-01A1	RNA-Binding Proteins as Molecular Integrators that Control the Response of HGSOC to Ant-Cancer Therapies	93.395	542,185	-
NIH	1-R01-CA233477-02	Identifying and targeting evolutionary trajectories in cancer	93.396	230,473	-
NIH	1-R01-CA233983-01A1 REVISED	Development of novel metastatic mouse models that recapitulate the major immune contexts of human colon cancer	93.396	156,266	-
NIH	1-R01-CA235375-01A1	Delivery of cytokines for cancer immunotherapy using nanolayer-controlled trafficking of liposomal nanoparticles	93.395	59,816	-
NIH	1-R01-CA247632-01	Enhancing CAR-T cell activity against solid tumors by vaccine boosting through the chimeric receptor	93.395	171,791	-
NIH	1-R01-DA038642-01A1	Molecular imaging of dopaminergic signaling in rodent brain	93.279	72,869	-
NIH	1-R01-DA045549-01	High-Performance Imaging Through Scattering Living Tissue	93.279	195,209	-
NIH	1-R01-EB024591-01	Synthetic Genetic Controller Circuits to Reprogram Cell Fate	93.286	325,812	-
NIH	1-R01-EB025854-01	Synthetic biology-regulated RNA vaccines	93.286	327,563	-
NIH	1-R01-EB026344-01	Multivalent Nano-conjugates for Targeted Penetration of and Delivery to Dense Extracellular Matrices	93.286	356,409	-
NIH	1-R01-EB027717-01A1	Micro-invasive biochemical sampling of brain interstitial fluid for investigating neural pathology	93.286	126,784	-
NIH	1-R01-ES031576-01	Epigenetics of the human gut microbiome	93.310	94,195	-
NIH	1-R01-GM130936-01A1	Reagents for Chemical Oligophosphorylation, Synthesis of Oligophosphate-Organic Molecule Conjugates, and Biochemical Studies	93.859	66,512	-
NIH	1-R01-GM135413-01	Dissecting the functional organization of the serotonergic system in C. elegans	93.859	113,573	-
NIH	1-R01-GM136882-01	Modeling the Organometallic Chemistry of Radical S-adenosylmethionine Enzymes	93.859	87,645	-
NIH	1-R01-MH111872-01	Multi-Site Non-Invasive Magnetothermal Excitation and Inhibition of Deep Brain Structures	93.242	304,585	304,585

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Federal Agency	Government Contract Number	Master Project Name	CFDA #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NIH	1-R01-MH111916-01A1	Development of an Integrated System for Monitoring Home-Cage Behavior in Non-Human Primates	93.242	292,471	-
NIH	1-R01-MH111916-03	Development of an Integrated System for Monitoring Home-Cage Behavior in Non-Human Primates	93.242	142,315	-
NIH	1-R01-MH112694-01	Simultaneous multiplexed in situ fluorescence imaging of neuronal proteins and messenger RNAs	93.242	96,850	96,850
NIH	1-R01-MH114031-01	RNA Scaffolds for Cell Specific Multiplexed Neural Observation	93.242	63,698	-
NIH	1-R01-MH115037-01	Elucidating neural substrates that mediate autism-like behaviors	93.242	-1,304	-
NIH	1-R01-MH115920-01	Exploring neural circuit mechanisms of social contact and social isolation	93.242	215	-
NIH	1-R01-MH120118-01A1	Behavioral and mechanistic dissection of a cognitive thalamo-cortical network	93.242	86,950	-
NIH	1-R01-NS089076-01A1	Epigenetic pathology and therapy in Huntington's disease	93.853	244,054	149,069
NIH	1-R01-NS113245-01	Functional dissection of thalamocortical interactions through genetically-defined TRN subnetworks	93.853	218,979	-
NIH	1-R21-AI149694-01	Systematic discovery, characterization, and design of novel genome editing and delivery tools using a high-throughput metagenomic screening pipeline	93.855	5,213	-
NIH	1-R21-AI151827-01	Dissecting the mechanism of cyclophosphamide-enhanced antibody efficacy	93.855	46,665	-
NIH	1-R21-CA236685-02	Building microenvironment-containing organoids from patient samples with single-cell precision	93.394	104,634	-
NIH	1-R21-EB022729-01A1	Multifunctional fibers for high-throughput microfluidics	93.286	0	-
NIH	1-R21-EY025863-02	Post-natal development of high-level visual representation in primates	93.867	-23	-
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	8,957	-
NIH	1-R21-NS102762-01	Improving in vitro generation of human oligodendrocyte lineage cells by mechanical stimulation	93.853	35,000	35,000
NIH	1R33CA223904-01	Advanced development and validation of microdevices for high-throughput in situ drug sensitivity testing in tumors	93.394	262,178	262,178
NIH	1R35CA242379-01	Understanding the role of metabolism in cancer	93.396	391,849	-
NIH	1R35GM136354-01	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	55,128	-
NIH	1-RF1-AG047661-01 REVISED	Examination of neural circuits underlying mood disorders in Alzheimer's disease	93.866	-143	-
NIH	1-RF1-AG048029-01 REVISED	Alzheimer's Disease Risk Genes in Human Microglia and Neurons Derived from iPSCs	93.866	86,192	166,245

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Federal Agency	Government Contract Number	Master Project Name	CFDA #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NIH	1-RF1-AG054012-01	Cell type specific epigenetic analysis to understand complex mechanisms underlying Alzheimer's disease phenotypes	93.866	301,449	-
NIH	1-RF1-AG054012-01 REVISED	Cell type specific epigenetic analysis to understand complex mechanisms underlying Alzheimer's disease phenotypes	93.866	668,959	-
NIH	1-RF1-AG054321-01 REVISED	Demystifying Microglia in Aging and Alzheimer's Disease	93.866	659,602	306,658
NIH	1-RF1-AG058504-01 REVISED	Solid State NMR Studies of Amyloid Proteins	93.866	638,862	-
NIH	1-RF1-AG059661-01 REVISED	Molecular structures of tau aggregates studied by solid-state NMR	93.866	386,418	-
NIH	1-RF1-AG062377-01 REVISED	Dissection of endosomal trafficking mechanisms in Alzheimers Disease	93.866	1,163,313	-
NIH	1-RF1-DA049005-01	Novel tools for spatiotemporal modulation of astrocytes in neuronal circuits	93.279	512,133	164,383
NIH	1-RF1-MH120017-01	Re-engineering Rabies Virus	93.242	472,772	-
NIH	1-RF1-MH121270-01 REVISED	Highly specific, renewable, and cost-effective antibody toolbox for 3D proteomic phenotyping of the brain	93.242	760,745	335,857
NIH	1-RM1-GM135102-01	A universal pipeline for functional characterization of the human microbiota at a massive scale	93.859	10,416	-
NIH	1-T32-NS105587-01A1	Computationally Enabled Integrative Neuroscience	93.853	293,690	-
NIH	1-U01-AG066757-01	Development of PU.1 Inhibitory Modulators as Novel Therapeutics for Alzheimer's Disease	93.866	26,894	-
NIH	1U01CA214381-01A1	Development of Physiologic Tissue Models to Assess Tumor Explant Response to Immune Checkpoint Blockade	93.396	178,901	87,381
NIH	1U01CA215798-01	Systems approaches to understanding the relationships between genotype, signaling, and therapeutic efficacy	93.396	-1,358	-1,358
NIH	1-U01-CA231079-01	Development of multifunctional probes for profiling microbial glycans	93.310	476,827	-
NIH	1-U01-CA238720-01	Identification of adaptive response mechanisms in breast cancer by information theory and proteomics	93.396	221,064	35,326
NIH	1-U01-EB029132-01	Microvascular Permeability, Inflammation, and Lesion Physiology in Endometriosis: A Microphysiological Systems Approach	93.286	513,140	-
NIH	1-U01-MH114819-01	A Molecular and Cellular Atlas of the Marmoset Brain	93.242	-37,383	92,969
NIH	1-U01-MH117072-01	Towards integrated 3D reconstruction of whole human brains at subcellular resolution	93.242	244,615	108,484
NIH	1-U01-MH119509-01	Single Cell Transcriptional and Epigenomic Dissection of Schizophrenia and Bipoloar Disease	93.242	621,223	-
NIH	1-U01-NS103470-01	Genetically-targeted hemodynamic functional imaging	93.853	-20,791	-
NIH	1-U01-NS110453-01	Single-cell transcriptional and epigenomic dissection of Alzheimer's Disease and Related Dementias	93.853	-209,819	-
NIH	1-U19-AI131135-01	3D Models of Engineered Human iPS Cells to Investigate Neurotropic Virus Infections	93.855	1,074	-

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Federal Agency	Government Contract Number	Master Project Name	CFDA #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NIH	1-UF-1NS107712-01 REVISED	Intracellular calcium sensing with molecular fMRI	93.853	659,129	-
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	416,935	-
NIH	1-UG3-NS115064-01S1	Construction of an integrated immune - vascular brain - chip as a platform for the study, drug screening, and treatments of Alzheimer's disease	93.853	6	-
NIH	2-P01-CA026731-35A1	Endogenous Nitrite Carcinogenesis In Man	93.393	229,107	-
NIH	2-P30-CA014051	Cancer Center Support (Core) Grant – (Parent)	93.397	-467	-
NIH	2-P30-CA014051-47	Cancer Center Support (Core) Grant – (Parent)	93.397	-1,162	-
NIH	2-P30-CA014051-48	Cancer Center Support (Core) Grant – (Parent)	93.397	3,759,888	-
NIH	2-P30-CA014051-49	Cancer Center Support (CCSG) Grant	93.397	608,468	-
NIH	2-P30-EY002621-41	Core-Vision Processes	93.867	-11,646	-
NIH	2-P41-EB015871-31	MIT Laser Biomedical Research Center	93.286	780,418	294,670
NIH	2-R01-AI055258-16	Synthetic Ligands for Directing Immune Responses	93.855	36,522	-
NIH	2-R01-CA168653-06A1 REVISED	Regulation of glucose metabolism to allow tumor initiation and growth	93.396	226,724	-
NIH	2-R01-DA029639-09	Novel Platforms for Systematic Optical Control of Complex Neural Circuits In Vivo	93.279	45,829	-
NIH	2-R01-EB001965-14	Advanced Instrumentation for Dynamic Nuclear Polarization NMR Research	93.286	55,653	-
NIH	2-R01-EB002804-27	High Field DNP and EPR in Biological Systems	93.286	-30	-
NIH	2-R01-EB017205-05A1	Critical Care Informatics	93.286	261,880	-
NIH	2-R01-EB017755-05	Mucin Glycans in the Regulation of Microbial Virulence	93.286	189,339	36,874
NIH	2-R01-EY011289-29A1	Novel Diagnostics With Optical Coherence Tomography	93.867	105,265	105,265
NIH	2R01EY011289-34	Novel Optical Diagnostics with Optical Coherence Tomography	93.867	1,573	-
NIH	2-R01-GM059426-17	Catalytic Stereoselective Olefin Metathesis Reactions	93.859	275,747	275,747
NIH	2R01GM066976-14A1	Structures and lipid interactions of curvature-inducing membrane peptides by NMR	93.859	7,755	-
NIH	2-R01-GM074825-10A1	Synthesis and Study of Complex Natural Products	93.859	5,381	5,381
NIH	2R01GM105984-07 REVISED	Investigating Mechanisms of Force Transmission in Tissue Morphogenesis	93.859	363,536	-
NIH	2-R01-GM114547-07	Synthetic Methods based on Biphilic Phosphorus Catalysts	93.859	80,702	-
NIH	2R56EB017205-05	Critical Care Informatics	93.286	54,126	-
NIH	2-T32-GM008334-29	Interdepartmental Biotechnology Training Program	93.859	-5,633	-
NIH	2-T32-GM008334-30	Interdepartmental Biotechnology Training Program	93.859	436,382	-
NIH	2-T32-GM087237-11	Graduate Training in Computational and Systems Biology	93.859	314,312	-

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Federal Agency	Government Contract Number	Master Project Name	CFDA #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NIH	3 R01-MH111872-02S1	Multi-Site Non-Invasive Magnetothermal Excitation and Inhibition of Deep Brain Structures	93.242	62,124	45,332
NIH	3-F32-GM126765-03 REVISED	Investigating the VapBC family of toxin-antitoxin systems in Mycobacterium tuberculosis – PDF Nocedal	93.859	60,365	-
NIH	3-K00-CA212227-05S1	Imaging Cancer Angiogenesis with Acoustic Angiography Ultrasound	93.398	61,747	-
NIH	3P24ES027707-03	Science and Engineering for Sensors, Mechanisms, and Biomarkers of Exposures	93.143	147,499	-
NIH	3P42ES027707-03	Science and Engineering for Sensors, Mechanisms, and Biomarkers of Exposures	93.143	75,571	-
NIH	3P42ES027707-03S1	Science and Engineering for Sensors, Mechanisms, and Biomarkers of Exposures	93.143	151,568	-
NIH	3-R01-AG032449-12S1	Determinants of Elderly Health: The Role of Place-Based Factors	93.866	14,551	-
NIH	3-R01-DC016607-01A1S1	The neural architecture of pragmatic processing	93.173	103,589	-
NIH	3-R01-EB002804-30S1	High Field DNP and EPR in Biological Systems	93.866	-430	-
NIH	3R01EB022062-04S1 REVISED	Tabletop liquid-helium-free, persistent-mode 1.5-T/70-mm osteoporosis MRI magnet	93.286	19,323	-
NIH	3-R01-EY023037-05S1	Behavioral Consequences and cellular substrates of plasticity in visual cortex	93.867	3,258	-
NIH	3-R01-EY025437-04S1	in vivo imaging of inhibitory circuit remodeling in mouse visual cortex	93.867	-1,936	-
NIH	3-R01-GM044783-27S1	Protein Chemistry	93.859	125,000	-
NIH	3R01GM074825-12S1	Synthesis and Study of Complex Natural Products	93.859	2,204	-
NIH	3-R01-GM097241-06	Inhibition of Prokaryote-Specific Saccharide Biosynthesis in Microbial Pathogens	93.859	335	-
NIH	3-R01-HG008754-03S1	High-Throughput Native Context Mapping and Modeling of Regulatory DNA	93.172	86,890	86,890
NIH	3-R01-NS104892-03S1	Neuromodulatory control of collective circuit dynamics in C. elegans	93.853	69,430	-
NIH	3-R35-GM122483-03S1	Metal-Catalyzed Methods for Organic Synthesis	93.859	56,765	-
NIH	3-R35-GM124732-03S1	Evolution and Regulation of Bacterial Proteome Composition	93.859	57,971	-
NIH	3-R35-GM124732-04	Evolution and Regulation of Bacterial Proteome Composition	93.859	460,157	-
NIH	3T32EB001680-14S1	Neuroimaging Training Program	93.286	8,093	-
NIH	3-U01-CA202177-04S1	Quantitative analyses of tumor cell extravasation	93.396	27,668	-
NIH	3-U01-CA202177-05S2	Quantitative analyses of tumor cell extravasation	93.396	163,313	-
NIH	3-U54-CA210180-03S1	MIT/Mayo Physical Sciences Center for Drug Delivery and Efficacy in Brain Tumors	93.397	107,900	107,900

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Federal Agency	Government Contract Number	Master Project Name	CFDA #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NIH	4DP2DK102256-02 REVISED	A Novel Strategy for Combating Obesity: Reprogramming Neural Circuits	93.310	69,650	-
NIH	4-R00-GM130896-02	Molecular Mechanisms regulating chromatin looping in time and space	93.859	100,101	-
NIH	4-R01-CA096504-14	Engineered Antibody EGFR Antagonist Cancer Therapeutics	93.395	276	276
NIH	4-R01-CA178636-04	Intraoperative real time breast cancer margin assessment with nonlinear microscopy	93.394	25,708	20,119
NIH	4R01EB017755-04 REVISED	Mechanistic analysis of transport through the mucus barrier	93.286	-3	-
NIH	4-R01-GM081393-08	MEIII2_Y_Me_Fe_Mn_Cluster Assembly and Maintenance in Ribonucleotide Reductase	93.859	-5,396	-
NIH	4-R01-GM104948-05	Redesigning General Anesthesia	93.310	-1,233	-1,233
NIH	4-R01-MH097104-05	Shank3 in Synaptic Function and Autism	93.242	8,593	-
NIH	4-UH3-TR002186-03	Cartilage-Bone-Synovium MPS: Musculoskeletal Disease Biology in Space	93.350	771,516	110,999
NIH	5 K99 GM118907-02	Effects of Host Metabolic Variation on Antibiotic Susceptibility	93.859	1,521	-
NIH	5 U01 CA215798-03	Systems approaches to understanding the relationships between genotype, signaling, and therapeutic efficacy	93.396	728,487	659,494
NIH	5 U01 CA215798-03 REVISED	Systems approaches to understanding the relationships between genotype, signaling, and therapeutic efficacy	93.396	21,191	-
NIH	5-DP1-HD091947-05	How Does the Functional Organization of the Human Brain Arise in Development?	93.865	976,468	59,507
NIH	5-F30-CA228229-03	Elucidating the role of GATOR2 in nutrient sensing by mTORC1	93.398	55,314	-
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	46,221	-
NIH	5-F31-AI145181-02	Quadruplet Decoding for Multiplexed Non-Canonical Amino Acid Incorporation	93.855	47,340	-
NIH	5-F31-CA228241-03	Genetic identification of novel mTORC1 regulators and homeostatic signaling mechanisms	93.398	46,240	-
NIH	5F31CA232340-03	Determining the mechanism of serine sensing by the mTOR pathway	93.398	45,052	-
NIH	5-F31-CA232355-02	Defining the mechanism of starvation-induced ribophagy	93.398	43,041	-
NIH	5-F31-CA236036-02	The Effect of Serine Source on Nucleotide Metabolism in Cancer: Manipulating Environmental Nutrient Availability to Impact Tumor Growth	93.398	40,880	-
NIH	5-F31-CA239493-02 REVISED	Rebalancing protein homeostasis enhances tumor antigen presentation	93.398	40,160	-
NIH	5-F31-DK113665-03 REVISED	Leucine Sensing by the mTORC1 Pathway in the Liver - PDF Cangelosi	93.847	51,573	-

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Federal Agency	Government Contract Number	Master Project Name	CFDA #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NIH	5F31GM129905-02	Understanding the Starvation Induced Selective Autophagy of Specific mRNAs and lncRNAs	93.859	46,108	-
NIH	5-F31-MH117886-02	Genome-scale transcription factor screen for neural differentiation - J. Joung	93.242	12,460	-
NIH	5-F32-AI136459-03 REVISED	Characterizing spatio-temporal changes in immune cell landscapes of multiple sclerosis patients in response to B cell depletion with Ocrelizumab	93.855	63,170	-
NIH	5-F32-CA232386-02 REVISED	Handheld two-photon microscopy for intra-operative cancer margin assessment	93.398	7,117	-
NIH	5-F32-CA239362-02	Cytosolic Delivery of Tumor Antigens into Dendritic Cells - Postdoctoral Fellow: Nicholas Truex	93.398	35,916	-
NIH	5-F32-DC015163-03	Mechanisms of adaptation in (healthy and aphasic) noisy-channel comprehension	93.173	8,501	-
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	66,726	-
NIH	5-F32-DK118785-03	Glycemic Control by Glucose-Responsive Hydrogels Based on Synthetic Lectin Mimics	93.847	62,170	-
NIH	5-F32-EY028028-03	Contributions of glial neurotransmitter transport in balancing excitation and inhibition in visual cortex	93.867	46,474	-
NIH	5-F32-GM122356-02	Magnetic complex colloidal sensors for continuous in vitro measurement of nitric oxide	93.859	5,869	-
NIH	5-F32-GM123710-03	Chiral polymer nanoparticles for probing biological systems	93.859	59,333	-
NIH	5-F32-GM125163-03 REVISED	Copper-Catalyzed Enantioselective Addition of Styrene-Derived Nucleophiles to Thiocarbenium Ions by Ligand-Controlled Chemoselective Hydrocupration (PDF: Thomas)	93.859	60,435	-
NIH	5F32GM125165-02	Identification and Characterization of Ligand Binding Profiles for Human Intelect	93.859	-37	-
NIH	5-F32-GM126643-02 REVISED	Molecularly Imprinted Polymer-Carbon Nanotube Sensors for the Detection of Magnesium	93.859	58,038	-
NIH	5-F32-GM126844-02 REVISED	A Small-Molecule Mask for Traceless Protein Delivery	93.859	58,775	-
NIH	5F32GM126913-02 REVISED	Efficient Synthesis of Modular Fluorinated Brush- Arm Star Polymers for 19F MRI	93.859	60,582	-
NIH	5-F32-GM128238-03 REVISED	Catalytic Asymmetric Amine Synthesis using Ni/Photoredox Decarboxylations (PDF: McCann)	93.859	64,904	-
NIH	5-F32-GM129882-03	Taming radical enzymes through directed evolution and structural analysis	93.859	58,718	-
NIH	5-F32-GM130071-03	Materials Approaches for Understanding Biological Energy Transduction and Bifurcation	93.859	58,418	-

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Federal Agency	Government Contract Number	Master Project Name	CFDA #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NIH	5-F32-GM131592-02	Chemo- and Regio- Selective Lysine Modification on the Surface of Native Proteins: Synthetic Methods for the Improvement of Cancer Therapeutics (PDF: Dhanjee)	93.859	36,298	-
NIH	5-F32-GM133056-02	Structural Characterization of AdoMet Radical Enzyme-Catalyzed Posttranslational Modifications in Bacterial Anaerobic Metabolism	93.859	47,343	-
NIH	5-F32-GM133073-02	Site-Selective Modification of Peptides and Proteins through Noncovalent Interactions	93.859	66,675	-
NIH	5-F32-GM134576-02	Structural and functional characterization of phosphoglycosyl transferases from human pathogens	93.859	52,561	-
NIH	5-F32-GM134577-02	Investigating mechanisms regulating cell adhesion during tissue remodeling	93.859	51,112	-
NIH	5-F32-HD096829-03 REVISED	How infants use the affiliations of their caregivers to evaluate others.	93.865	51,657	-
NIH	5-F32-HD097982-02	Linguistic Experience and Generalization: Early Links between Sounds,Words, and Grammar	93.865	36,855	-
NIH	5-F32-HD100064-02	Neurocognitive Basis of Language Comprehension in Children with Dyslexia	93.865	48,554	-
NIH	5-F32-MH114525-03	Adolescent Brain Bases of Intergenerational Risk for Depression	93.242	7,725	-
NIH	5-F32-MH115441-03 REVISED	Development of Line-Scan Temporal Focusing for fast structural imaging of synapse assembly/disassembly in vivo	93.242	51,859	-
NIH	5-F32-MH115446-02	Investigating the Role of Neurotensin on Valence Assignment During Associative Learning in the Basolateral Amygdala	93.242	-1,398	-
NIH	5-F32-MH117933-02	Characterizing Neural Adaptation in Autism Spectrum Disorder	93.242	56,851	-
NIH	5-F32-NS100356-03 REVISED	Revealing the Functional Role of Theta and Gamma Rhythms in Encoding and Retrieval of Spatial Memory	93.853	42,481	-
NIH	5-F32-NS110481-03 REVISED	Correlation of astrocyte Ca2+ microdomain activity with motor learning and neuronal function	93.853	55,682	-
NIH	5-K99-AG055697-03 REVISED	Deciphering cell-type specific mechanisms of APOE4 in Alzheimer's disease	93.866	43,029	-
NIH	5-K99-AG063896-02	Development of In Vitro Compression-Induced Rotator Cuff Injury Model: Aging and Inflammation in Tendon Degeneration	93.866	119,763	-
NIH	5-K99-CA226396-02	Investigating functional sites in protein kinases as targets for cancer mutations and novel drugs	93.398	129,866	-
NIH	5-K99-CA226400-02 REVISED	Investigating immune-microbiota interaction in lung cancer	93.398	164,686	-
NIH	5-K99-CA234221-02S1	Understanding metabolic heterogeneity in pancreatic cancer	93.398	102,522	-
NIH	5-K99-CA237861-02	Developing multiplexed microenvironmental sensors for precision diagnostics of cancer metastasis	93.398	45,020	-
NIH	5-K99-DA045103-02	Defining the role of cortical circuit dynamics in learning and addiction	93.279	36,936	-

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Federal Agency	Government Contract Number	Master Project Name	CFDA #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NIH	5-K99-EB025254-02	High-throughput micro-RNA profiling of single cells and its application in leukemia	93.286	80,962	-
NIH	5-K99-EY029326-02 REVISED	Synaptic and intrinsic mechanisms underlying visual cortical enhancement following retinal inactivation	93.867	99,356	-
NIH	5-K99-GM134153-02	Control of topoisomerase activity during DNA replication by bacterial chromosome structuring proteins	93.859	85,980	-
NIH	5-K99-MH112855-02	Prefrontal circuits for attention and motor planning	93.242	27,647	-
NIH	5-K99-MH116100-02S1	Testing the Mechanisms, Layers, and Frequencies of Prediction Encoding and its Violation	93.242	137,357	-
NIH	5-K99-MH120279-02	Magnetic Modulation on Targeted Neural Circuits in Autism	93.242	94,462	-
NIH	5-K99-NS107639-02 REVISED	Mapping neurochemical activity of the basal ganglia in pathological behaviors	93.853	92,537	-
NIH	5-P01-CA026731-39	Endogenous Nitrite Carcinogenesis In Man	93.393	9,914	-
NIH	5-P01-CA042063-32	Characterization of Pathways Controlling Cancer at the Level of Gene Regulation	93.393	1,442,613	-
NIH	5P30ES002109-38	MIT Center for Environmental Health Sciences (YR 36-40)	93.113	-8,641	-
NIH	5P30ES002109-39	MIT Center for Environmental Health Sciences (YR 36-40)	93.113	848,879	-
NIH	5-P30-EY002621-38	Core - Vision Processes	93.867	0	-
NIH	5-P30-EY002621-42	Core-Vision Processes	93.867	636,150	-
NIH	5-P41-EB002026-42	MIT/Harvard Center for Magnetic Resonance	93.286	0	-
NIH	5P41EB002026-43	MIT/Harvard Center for Magnetic Resonance	93.286	-8,339	-
NIH	5-P41-EB015871-32	MIT Laser Biomedical Research Center	93.286	73,623	57,769
NIH	5-P41-EB015871-33	MIT Laser Biomedical Research Center	93.286	24,805	-
NIH	5-P41-EB015871-34	MIT Laser Biomedical Research Center	93.286	345,125	-
NIH	5-P41-GM132079 -02	MIT Harvard Center for Magnetic Resonance-Year 1	93.859	1,028,975	-
NIH	5P42ES027707-02 REVISED	Science and Engineering for Sensors, Mechanisms, and Biomarkers of Exposures	93.143	650,225	-
NIH	5P42ES027707-03 REVISED	Science and Engineering for Sensors, Mechanisms, and Biomarkers of Exposures	93.143	631,782	-
NIH	5-P50-GM098792-05	MIT Center for Integrative Synthetic Biology	93.859	1,922	-
NIH	5-R00-AG050749-05	Quantitation and biochemical characterization of autophagy's role in aging	93.866	146,205	-
NIH	5-R00-CA204595-05	Tumor-intrinsic oncogenic alterations and evasion of anti-tumor immunity	93.396	172,893	-
NIH	5-R00-GM115765-05S1	Elucidating how intracellular bacterial pathogens hijack host intercellular communication to promote spread	93.859	279,146	-

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Federal Agency	Government Contract Number	Master Project Name	CFDA #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NIH	5-R01 EB 016101-5	A New Device for Electrical & Chemical Modulation of Pathological Neural Activity	93.286	-24,925	-
NIH	5-R01-AG049897-05	A Randomized Controlled Trial of Health Care Hotspotting	93.866	357,465	-
NIH	5-R01-AG058002-04	Epigenomic, transcriptional and cellular dissection of Alzheimer's variants	93.866	3,168,731	799,084
NIH	5-R01-AG062335-03	Elucidating the Molecular Mechanisms of Neuropsychiatric Symptoms in Alzheimer's Disease	93.866	1,752,850	55,443
NIH	5-R01-AI016892-41 REVISED	AAA+ proteolytic machines	93.855	572,296	-
NIH	5-R01-AI055258-15	Synthetic Ligands for Modulating Immune Cell Responses	93.855	441,205	-
NIH	5-R01-AI111395-05	Characterization and Development of a Cross Spectrum Anti-Dengue Antibody	93.855	557,555	-
NIH	5-R01-AI111860-05	T-cell-mediated targeting of therapeutics to HIV reservoirs	93.855	278,633	270,885
NIH	5-R01-AI126592-05	The Chemistry and Biology of Galactofuranose-Containing Glycans	93.855	457,240	-
NIH	5-R01-AI141543-02	Target-specific antimalarial compound identification using phenotypic assays	93.855	187,365	-
NIH	5-R01-AR065484-05	Structure-Function of the Nuclear Envelope Bridge and its Role in Laminopathies	93.846	120,660	-
NIH	5-R01-AR071443-04	Defining and Modulating Mechanisms of Collagen Proteostasis	93.846	196,765	-
NIH	5-R01-AT008764-05 REVISED	Antimicrobial discovery from metabolomics of nematode pathogen interactions	93.213	15,124	24,960
NIH	5-R01-CA021615-42	Mutagenesis and Repair of DNA	93.393	167,137	-
NIH	5-R01-CA034992-36 REVISED	Understanding and Improving Platinum Anticancer Drugs	93.395	38,474	-
NIH	5R01CA073808-22 REVISED	Ribonucleases in Cancer Chemotherapy	93.395	-2,677	-
NIH	5-R01-CA075289-21	Optical Biopsy Using Coherence Tomography	93.394	42,522	-
NIH	5-R01-CA080024-23	Intra and Extra-Chromosomal Probes for Mutagenesis by Carcinogens	93.393	378,884	-
NIH	5-R01-CA096504-15 REVISED	Engineered Antibody EGFR Antagonist Cancer Therapeutics	93.395	-750	-
NIH	5-R01-CA178636-05	Intraoperative real time breast cancer margin assessment with nonlinear microscopy	93.394	119,075	-
NIH	5-R01-CA184956-04	(PQB6)Elucidating metastasis by real-time monitoring and tagging of CTCs in GEMMs	93.396	49,852	-
NIH	5-R01-CA206157-25 REVISED	Regulation of MITOSIS by Proteolysis in Yeast	93.393	303,993	-
NIH	5-R01-CA206218-05 REVISED	Reprogramming the tumor microenvironment via self-amplified RNA (SafeR) circuits	93.396	217,538	-
NIH	5-R01-CA207029-05	RNA circuits for cell state determination in mammalian cells in vitro and in vivo	93.394	273,121	-
NIH	5-R01-CA211184-05	Dietary control of stem cells in physiology and cancer	93.396	472,650	-

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Federal Agency	Government Contract Number	Master Project Name	CFDA #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NIH	5-R01-CA218094-03	Deep learning based antibody design using high-throughput affinity testing of synthetic sequences	93.394	860,358	-
NIH	5-R01-CA220468-04	Organic nanoparticles for dual MRI-guided therapeutic selection and ovarian cancer drug delivery	93.394	263,454	-
NIH	5-R01-CA235375-02	Delivery of cytokines for cancer immunotherapy using nanolayer-controlled trafficking of liposomal nanoparticles	93.395	173,411	-
NIH	5-R01-CA235740-02	Microengineered Technologies for Quantitative, Multiplexed and Spatially Resolved Measurement of miRNA in Tissue Sections	93.394	272,521	46,266
NIH	5-R01-DA029639-08	Novel Platforms for Systematic Optical Control of Complex Neural Circuits In Vivo	93.279	4,818	-
NIH	5-R01-DA038642-05	Molecular imaging of dopaminergic signaling in rodent brain	93.279	383,384	-
NIH	5-R01-DA045549-04	High-Performance Imaging Through Scattering Living Tissue	93.279	307,200	107,667
NIH	5-R01-DC000238-33	Experimental - Theoretical Studies of Cochlear Mechanisms	93.173	13	-
NIH	5-R01-DC000238-36	Experimental - Theoretical Studies of Cochlear Mechanisms	93.173	385,547	-
NIH	5-R01-DC014739-05	Auditory Scene Analysis with Complex Sounds	93.173	321,385	-
NIH	5-R01-DC016607-03	The neural architecture of pragmatic processing	93.173	334,861	-
NIH	5-R01DC017970-02	Computational Cognitive Neuroscience of Human Auditory Cortex	93.173	208,664	-
NIH	5-R01-DE013023-20	Novel Polymers for Tissue Engineering	93.121	298,339	-
NIH	5-R01-DE024747-02	Tunable Nanolayer-Polymer Composite Patches for Cell-Free CMF Repair	93.121	66,533	66,533
NIH	5-R01-DE024747-05	Tunable Nanolayer-Polymer Composite Patches for Cell-Free CMF Repair	93.121	239,913	-
NIH	5-R01-DK087984-07 REVISED	HRI-eIF2a Phosphorylation Signaling in Oxidative Stress and Erythropoiesis	93.847	5,070	-
NIH	5-R01-DK115558-04	Macromolecular interactions controlling the ALA synthases, keystone enzymes that initiate heme biosynthesis	93.847	361,460	-
NIH	5-R01-EB000244-41	A new high-throughput gastrointestinal tract explant platform for drug formulation discovery and metabolic disease modulation	93.286	1,156,119	446,135
NIH	5-R01-EB001960-40	Solid State NMR Studies of Membrane Proteins	93.286	4,559	-
NIH	5-R01-EB001965-16	Advanced Instrumentation for Dynamic Nuclear Polarization NMR Research	93.286	467,622	-
NIH	5-R01-EB002804-30S1	High Field DNP and EPR in Biological Systems	93.286	316	-
NIH	5-R01-EB004866-12	Novel Traveling Wave Tubes for CW and Pulsed DNP NMR	93.286	254,920	-
NIH	5-R01-EB016101-5	A New Device for Electrical & Chemical Modulation of Pathological Neural Activity	93.286	-181	-
NIH	5-R01-EB017755-06	Mucin Glycans in the Regulation of Microbial Virulence	93.286	385,843	-
NIH	5-R01-EB020740-04	Nipype: Dataflows for Reproducible Biomedical Research	93.286	574,960	172,439

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Federal Agency	Government Contract Number	Master Project Name	CFDA #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NIH	5-R01-EB022062-04	Tabletop liquid-helium-free, persistent-mode 1.5-T/70-mm osteoporosis MRI magnet	93.286	882,717	36,407
NIH	5-R01-EB022433-04	Lymph node-targeted molecular vaccines	93.286	315,017	-
NIH	5-R01-EB024261-04	Expansion Microscopy	93.286	516,673	-
NIH	5-R01-EB024531-03	Computational Design, Fabrication, and Evaluation of Optimized Patient-Specific Transtibial Prosthetic Sockets	93.286	291,741	-
NIH	5-R01-EB024591-04	Synthetic Genetic Controller Circuits to Reprogram Cell Fate	93.286	321,170	119,072
NIH	5-R01-EB025256-03	Programmed Differentiation Circuits for Organoids using Meso-Microfluidics	93.286	452,959	-
NIH	5-R01-EB025854-03	Synthetic biology-regulated RNA vaccines	93.286	227,950	-
NIH	5-R01-EB026344-03	Multivalent Nano-conjugates for Targeted Penetration of and Delivery to Dense Extracellular Matrices	93.286	232,109	-
NIH	5-R01-ES031576-02	Epigenetics of the human gut microbiome	93.310	123,801	-
NIH	5-R01-EY007023-28	Cell-specific circuits and contextual modulation in visual cortex	93.867	-207	-
NIH	5-R01-EY011289-30	Novel Diagnostics With Optical Coherence Tomography	93.867	148,104	148,104
NIH	5-R01-EY011289-33 REVISED	Novel Diagnostics With Optical Coherence Tomography	93.867	203,370	-
NIH	5-R01-EY020517-09	Project Prakash: Development of Object Perception After Late Sight Onset	93.867	249,212	-
NIH	5-R01-EY023037-08	Behavioral Consequences and cellular substrates of plasticity in visual cortex	93.867	436,958	-
NIH	5-R01-EY023322-06	Neural mechanisms of color	93.867	-2,104	-
NIH	5-R01-EY025437-03	in vivo imaging of inhibitory circuit remodeling in mouse visual cortex	93.867	2,358	-
NIH	5-R01-EY025437-05	in vivo imaging of inhibitory circuit remodeling in mouse visual cortex	93.867	229,876	-
NIH	5-R01-EY028219-03	Astrocyte-neuron interactions in visual cortex circuits	93.867	640,384	-
NIH	5-R01-EY029245-03	Using the principles of synaptic plasticity to promote recovery from amblyopia	93.867	692,093	-
NIH	5-R01-EY029666-02 REVISED	Neural Mechanisms for Feature-Based Attention	93.867	420,415	-
NIH	5-R01-GM024663-43	Genetic Analysis of Nematode Egg Laying and Co-regulated Behavioral Systems	93.859	419,223	-
NIH	5-R01-GM029595-38 REVISED	Ribonucleotide Reductase: Structure and Function	93.859	-27,649	-
NIH	5-R01-GM031030-36	Molecular Genetics of Rhizobium Nodulation Plasmids	93.859	3,322	-
NIH	5-R01-GM031030-38	Molecular Genetics of Rhizobium Nodulation Plasmids	93.859	335,182	-
NIH	5-R01-GM034277-35	Regulation of mRNA Processing	93.859	520,779	-
NIH	5-R01-GM039334-32 REVISED	Deciphering Membrane-Associated Glycan Assembly and Transfer	93.859	190,458	-

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Federal Agency	Government Contract Number	Master Project Name	CFDA #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NIH	5-R01-GM044783-28	Protein Chemistry	93.859	416,405	-
NIH	5-R01-GM049039-24	Endovascular Devices and Vascular Repair	93.859	469,173	-
NIH	5-R01-GM052339-25	Initiation of DNA Replication of Yeast Chromosomes	93.859	134,410	-
NIH	5-R01-GM059426-20	Catalytic Stereoselective Olefin Metathesis Reactions	93.859	88,839	-
NIH	5-R01-GM066976-16	Structures and lipid interactions of curvature-inducing membrane peptides by NMR	93.859	308,540	-
NIH	5-R01-GM074825-13	Synthesis and Study of Complex Natural Products	93.859	210,910	-
NIH	5-R01-GM077537-13	High Resolution Assembly Structure of the Nuclear Pore Complex	93.859	272,354	-
NIH	5-R01-GM081871-12	Structure based Prediction of the interactome	93.859	285,874	-
NIH	5-R01-GM082209-08 REVISED	Computational Design of Inhibitor Specificity	93.859	187,716	-
NIH	5-R01-GM082899-13	Cell cycle regulation and chromosome organization in Caulobacter crescentus	93.859	342,992	-
NIH	5-R01-GM084477-11	Microbial Modulation of Neuroendocrine Physiology and Aging of C. elegans	93.859	352	-
NIH	5-R01-GM085319-12	Function of Sequence-specific RNA Binding Proteins	93.859	223,979	-
NIH	5-R01-GM088204-10	Solid-state NMR of the influenza M2 protein in lipid bilayers	93.859	363,545	-
NIH	5-R01-GM089732-11	Synthesis and Study of Cyclotryptamine and Diketopiperazine Alkaloids	93.859	419,069	-
NIH	5-R01-GM095843-08 REVISED	Molecules for Dynamic Nuclear Polarization and NMR Structure Determination	93.859	84,757	-
NIH	5-R01-GM101988-41	Sequence Determinants of Protein Structure and Stability	93.859	271,410	-
NIH	5-R01-GM102311-08	Environmental modulation of microbial conflict and cooperation	93.859	104,281	-
NIH	5-R01-GM108348-07	Compressive Genomics for Large Omics Data Sets: Algorithms, Applications and Tools	93.859	331,719	62,045
NIH	5-R01-GM110048-06	Analysis and design of protein interactions that regulate cell death	93.859	237,101	-
NIH	5-R01-GM114190-05	Polymer models of mitotic and interphase chromosomes	93.859	272,944	-
NIH	5R01GM114547-06	Synthetic Methods based on Biphilic Phosphorus Catalysts	93.859	159,427	-
NIH	5-R01-GM114834-13	Modified Phase 3B of a 3-phase 1.3-GHz LTS/HTS NMR magnet	93.859	1,704	-
NIH	5-R01-GM114834-13 REVISED	Modified Phase 3B of a 3-phase 1.3-GHz LTS/HTS NMR magnet	93.859	75,274	-
NIH	5-R01-GM118695-04	Bioinorganic Explorations of Host-Defense Proteins	93.859	64,529	-
NIH	5-R01GM125646-03 REVISED	Investigating RhoA GTPase regulation in sculpting tissues	93.859	318,833	-
NIH	5-R01-GM126376-02	Metallobiochemistry of innate immunity and bacterial physiology	93.859	132,486	132,410
NIH	5-R01-GM126376-04	Metallobiochemistry of innate immunity and bacterial physiology	93.859	157,482	-
NIH	5-R01-GM129007-03	Mapping, modeling and manipulating the interactions of protein domains that bind short linear motifs	93.859	275,586	-

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Federal Agency	Government Contract Number	Master Project Name	CFDA #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NIH	5-R01-GM131627-02 REVISED	Structure and function of the monotopic phosphoglycosyl transferase superfamily: Initiators of biosynthesis of complex bacterial glycoconjugates	93.859	269,298	145,240
NIH	5-R01-GM132997-32	High Field DNP and EPR in Biological Systems	93.859	448,831	-
NIH	5-R01-GM134734-02	Nuclear Organization and Dynamics of Mediator and RNA Polymerase II in Living Stem Cells	93.859	261,544	-
NIH	5-R01-HD085866-05	Mitotic exit control	93.865	194,475	-
NIH	5-R01-HD097135-02	Agonist-Antagonist Myoneural Interface for Functional Limb Restoration after Transtibial Amputation	93.865	535,270	-
NIH	5-R01-HG002439-16 REVISED	Regulation and Function of Alternative mRNA Isoform Expression in Mammals	93.172	301,345	-
NIH	5-R01-HG008363-03 REVISED	High-throughput methods for elucidating the control of chromatin accessibility	93.172	165,894	6,642
NIH	5-R01-HG008754-04	High-Throughput Native Context Mapping and Modeling of Regulatory DNA	93.172	424,993	352,429
NIH	5-R01-HL127174-04	Canonical & non-canonical regulation of the HDL receptor by PDZK1's PDZ domains	93.837	405,710	1,205
NIH	5-R01-HL140471-03	Investigating the role of H2A.Z dynamics in regulating cardiac lineage commitment	93.837	447,505	85,010
NIH	5R01MH060379-19	Functional and anatomical characterization of the striosomal system	93.242	328,442	-
NIH	5-R01-MH085802-10	MicroRNA mechanisms of Rett Syndrome	93.242	245,171	-
NIH	5-R01-MH104536-05	Imaging Synaptic Transmission of Individual Active Zones	93.242	3,020	-
NIH	5-R01-MH104536-07 REVISED	Imaging Synaptic Transmission of Individual Active Zones	93.242	564,052	-
NIH	5-R01-MH106469-05	Synaptic pathophysiology of the 16p11.2 microdeletion mouse model	93.242	371,557	-
NIH	5-R01-MH106497-05	Delineating the Anatomical and Functional Circuitry Underlying Social Learning	93.242	202,217	-
NIH	5-R01-MH107680-05	The cognitive searchlight: TRN circuit dissection in health and disease	93.077	380,131	-
NIH	5-R01-MH109978-05	Network-based prediction and validation of causal schizophrenia genes and variants	93.242	358,833	288,974
NIH	5-R01-MH111503-03	A platform for high-throughput production of targeting systems for cell-type-specific transgene expression in wild-type animals	93.242	211,940	-
NIH	5-R01-MH111872-03	Multi-Site Non-Invasive Magnetothermal Excitation and Inhibition of Deep Brain Structures	93.242	124,119	107,142
NIH	5-R01-MH111872-04	Multi-Site Non-Invasive Magnetothermal Excitation and Inhibition of Deep Brain Structures	93.242	346,322	-

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Federal Agency	Government Contract Number	Master Project Name	CFDA #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NIH	5-R01-MH112694-04	Simultaneous multiplexed in situ fluorescence imaging of neuronal proteins and messenger RNAs	93.242	199,103	-
NIH	5-R01-MH114031-04	RNA Scaffolds for Cell Specific Multiplexed Neural Observation	93.242	408,123	110,449
NIH	5-R01-MH115037-04	Elucidating neural substrates that mediate autism-like behaviors	93.242	369,093	-
NIH	5-R01-MH115592-04	Thalamocortical Dynamics and Consciousness	93.242	427,988	-
NIH	5-R01-MH122025-02	CRCNS US-French Research Proposal : Principles of Inference through Neural Dynamics	93.242	173,024	-
NIH	5-R01-MH122270-02	Characterization of amygdalar circuits mediating suppression of innate social behaviors	93.242	274,396	-
NIH	5-R01-NS025529-28	Extrapyramidal Systems	93.853	-216,840	-
NIH	5-R01-NS040296-18	Characterization of the Drosophila Synaptotagmin Family	93.853	323,501	-
NIH	5-R01-NS078127-05R	Neural mechanisms of timing in the oculomotor system	93.853	281,745	-
NIH	5-R01-NS086804-05	Fiber Inspired Neural Probes for the Multifunctional Dynamic Brain Mapping	93.853	19,765	-
NIH	5-R01-NS089076-05 REVISED	Epigenetic pathology and therapy in Huntington's disease	93.853	150,634	-
NIH	5-R01-NS098505-03	Dissecting the role of thalamic inhibition in neurodevelopmental diseases	93.853	376,127	-
NIH	5-R01-NS098505-05	Dissecting the role of thalamic inhibition in neurodevelopmental diseases	93.853	50,366	-
NIH	5-R01-NS102727-02	Scalable Cell- and Circuit-Targeted Electrophysiology	93.853	21,093	-
NIH	5-R01-NS102727-04	Scalable Cell- and Circuit-Targeted Electrophysiology	93.853	193,968	265,996
NIH	5R01NS102730-04	Mechanisms underlying DNA double strand break response in Alzheimer?s disease and frontal temporal dementia	93.853	380,359	-
NIH	5-R01-NS104892-04	Neuromodulatory control of collective circuit dynamics in C. elegans	93.853	387,705	-
NIH	5-R01-NS106031-03	A dendritic mechanism for cholinergic neuromodulation of cortical function	93.853	329,604	-
NIH	5-R01-NS113079-02	Dendritic Computation and Representation of Head Direction in Retrosplenial Cortex	93.853	469,118	-
NIH	5-R01-NS113245-02	Functional dissection of thalamocortical interactions through genetically-defined TRN subnetworks	93.853	475,996	-
NIH	5R03HD092676-02	High-performance, low-cost, passive prosthetic knees optimized to replicate physiological gait in multiple mobility scenarios	93.865	-23,223	6,406
NIH	5-R21-AI130776-02	Development and application of glycan readers for the detection and analysis of bacterial glycoconjugates	93.855	55,153	-
NIH	5-R21-EB022729-02 REVISED	Multifunctional fibers for high-throughput microfluidics	93.286	49,778	-
NIH	5-R21-EB026008-02	Structured DNA Nanoparticles Therapeutic mRNA and CRISPR/Cas9 Delivery	93.286	211,692	-

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NIH	5-R21-GM129688-02	A 10-K REBCO 23.5-T magnet towards a tabletop liquid-helium-free 1-GHz magnet for microcoil NMR spectroscopy	93.859	173,311	-
NIH	5-R21-GM134240-02	Inverting Coupling Selectivity with Cooperative Metal-Ligand Constructs	93.859	165,579	-
NIH	5-R21-GM135780-02	Esterase Specificity for Pharmacology and Chemical Biology	93.859	240,014	-
NIH	5-R21-HD090346-02	Using fMRI in awake human infants to study functional development of cortex	93.865	156,378	-
NIH	5-R21-MH120440-02	Mechanisms Underlying Glial Regulation of Neuronal Excitability in Drosophila	93.242	277,677	-
NIH	5-R21-NS102762-02	Improving in vitro generation of human oligodendrocyte lineage cells by mechanical stimulation	93.853	27,382	-
NIH	5-R21-NS105027-02	Development of 3D vascularized model of Blood Brain Barrier and its application to Alzheimer disease research	93.853	117,529	14,818
NIH	5-R21-NS105070-02	Novel implementation of Temporal Focusing Line Scanning for Fast Imaging of Synaptic Structural Dynamics in vivo	93.853	116,858	-
NIH	5-R21-TW010245-02 REVISED	Low Cost Mobile Platform for Pulmonary Disease Screening	93.989	165,016	42,464
NIH	5R24MH117295-02	DANDI: Distributed Archives for Neurophysiology Data Integration	93.242	727,231	385,010
NIH	5-R25-GM116705-05	IMPACT Program for Biomedical Researcher Career Development	93.859	497,634	223,560
NIH	5-R33-AI121669-04	Engineering "Phagebody" Antimicrobials for Carbapenem-Resistant Enterobacteriaceae	93.855	818,632	-
NIH	5-R33-CA191143-03 REVISED	Single cell growth assay for residual cells in acute lymphoblastic leukemia	93.394	37,034	-
NIH	5R33CA223904-03	Advanced development and validation of microdevices for high-throughput in situ drug sensitivity testing in tumors	93.394	188,213	-
NIH	5-R34-HL125859-02	Entrainment-based mechanical ventilation to improve patient-ventilator synchrony	93.837	-21,928	-
NIH	5-R35-ES028303-04	Mechanism of Eukaryotic Environmental Mutagenesis	93.113	457,128	-
NIH	5-R35-ES028374-04	Protein Kinase Signaling in the Genotoxic Stress Response	93.113	573,940	-
NIH	5-R35-GM118066-05	Causes and consequences of aneuploidy	93.859	432,608	-
NIH	5R35GM122483-02S1	Metal-Catalyzed Methods for Organic Synthesis	93.859	50,000	-
NIH	5-R35-GM122483-04	Metal-Catalyzed Methods for Organic Synthesis	93.859	985,834	-
NIH	5-R35-GM122538-04	Mechanisms and regulation of replication, the cell cycle, gene expression, and horizontal gene transfer in prokaryotes, focusing on Bacillus subtilis	93.859	591,359	-
NIH	5-R35-GM126982-03S1	Metalloenzyme structure, function and assembly	93.859	268,116	-
NIH	5-R35-GM133580-02	From epigenome to genome and back: disentangling the relationship between epigenetic modifications and chromatin organization	93.859	304,858	-

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Federal Agency	Government Contract Number	Master Project Name	CFDA #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NIH	5-R37-GM057073-22	Structure-Function Relationship of Glycosaminoglycans	93.859	152,813	-
NIH	5-R37-MH087027-10	Cortical Circuits for Attention and Decisions	93.242	310,360	-
NIH	5-R37-NS051874-25	The Cdk5/35 Kinase	93.853	455,694	-
NIH	5-R56-AR044276-24	Chemistry and Biology of Collagen	93.846	280,800	-
NIH	5T32EB001680-14	Neuroimaging Training Program	93.286	17,882	-
NIH	5-T32-EB001680-15	Neuroimaging Training Program	93.286	154,263	-
NIH	5-T32-EB019940-04	Neurobiological Engineering Training Program	93.286	-43,799	-
NIH	5T32EB019940-05	Neurobiological Engineering Training Program	93.286	134,034	-
NIH	5-T32-ES007020-44	Training Grant in Environmental Toxicology	93.113	870	-
NIH	5-T32-ES007020-45	Training Grant in Environmental Toxicology	93.113	586,972	-
NIH	5-T32-GM007287-44	Pre-Doctoral Training in Biological Sciences	93.859	-3,656	-
NIH	5-T32-GM007287-45	Pre-Doctoral Training in Biological Sciences	93.859	1,799,851	-
NIH	5-T32-GM087237-10	Graduate Training in Computational and Systems Biology	93.859	-488	-
NIH	5-U01-CA184897-05	Dynamics of Gene and Isoform Regulation during EMT and tumor progression	93.396	144,241	61,937
NIH	5-U01-CA184898-05	Embryonal Brain Tumor Networks	93.396	53,180	63,943
NIH	5-U01-CA184898-06	Embryonal Brain Tumor Networks	93.396	458,973	230,089
NIH	5-U01CA202177-04	Quantitative analyses of tumor cell extravasation	93.396	229,887	183,862
NIH	5-U01CA202177-05	Quantitative analyses of tumor cell extravasation	93.396	407,662	155,734
NIH	5-U01-CA214381-03	Development of Physiologic Tissue Models to Assess Tumor Explant Response to Immune Checkpoint Blockade	93.396	257,419	60,676
NIH	5-U01-CA214381-03 REVISED	Development of Physiologic Tissue Models to Assess Tumor Explant Response to Immune Checkpoint Blockade	93.396	57,183	-
NIH	5U01CA215798-04	Systems approaches to understanding the relationships between genotype, signaling, and therapeutic efficacy	93.396	26,326	-
NIH	5-U01-CA238720-02	Identification of adaptive response mechanisms in breast cancer by information theory and proteomics	93.396	2,688	-
NIH	5-U01-MH108168-04 REVISED	Connectomes Related to Anxiety and Depression in Adolescents	93.242	161,388	159,430
NIH	5-U01-MH108168-04S1 REVISED	Connectomes Related to Anxiety and Depression in Adolescents	93.242	306,004	301,254
NIH	5-U01-MH114819-03	A Molecular and Cellular Atlas of the Marmoset Brain	93.242	1,411,919	569,387
NIH	5-U01-MH117072-02	Towards integrated 3D reconstruction of whole human brains at subcellular resolution	93.242	1,946,547	259,628
NIH	5-U01-MH117072-03	Towards integrated 3D reconstruction of whole human brains at subcellular resolution	93.242	21,478	-
NIH	5-U01-NS103470-03	Genetically-targeted hemodynamic functional imaging	93.853	434,271	-

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Federal Agency	Government Contract Number	Master Project Name	CFDA #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NIH	5-U01-NS110453-02	Single-cell transcriptional and epigenomic dissection of Alzheimer's Disease and Related Dementias	93.853	786,433	-
NIH	5-U19-AI131135-03	3D Models of Engineered Human iPS Cells to Investigate Neurotropic Virus Infections	93.855	1,534,951	1,052,050
NIH	5-U19-AI131135-04	3D Models of Engineered Human iPS Cells to Investigate Neurotropic Virus Infections	93.855	24,221	-
NIH	5-U19-AI131135-04 REVISED	3D Models of Engineered Human iPS Cells to Investigate Neurotropic Virus Infections	93.855	52,385	-
NIH	5-U24-OD026638-03	Knockin marmoset reporters for non-invasive measuring of genome-editing efficiency	93.310	700,289	-
NIH	5-U24-TR001951-02	Translational Center of Tissue Chip Technologies for quantitative characterization of Microphysiological Systems	93.350	82,537	8,878
NIH	5-U54-CA210180-03	MIT/Mayo Physical Sciences Center for Drug Delivery and Efficacy in Brain Tumors	93.397	695,429	574,128
NIH	5-U54CA210180-04	MIT/Mayo Physical Sciences Center for Drug Delivery and Efficacy in Brain Tumors	93.397	1,549,268	931,549
NIH	5-U54-CA217377-02	Quantitative and functional characterization of therapeutic resistance in cancer (PARENT)	93.397	17,743	17,050
NIH	5-U54-CA217377-03	Quantitative and functional characterization of therapeutic resistance in cancer (PARENT)	93.397	1,543,809	483,702
NIH	5-U54-CA217377-04	Quantitative and functional characterization of therapeutic resistance in cancer (PARENT)	93.397	177,917	-
NIH	7-F30-CA210373-04	Determining the mechanism of aspartate sensing by the mTOR pathway	93.398	4,054	-
NIH	7-R01-AG058002-02	Epigenomic, transcriptional and cellular dissection of Alzheimer's variants	93.866	568,407	-
NIH	7-R01-AR044276-22 REVISED	Chemistry and Biology of Collagen	93.846	-20,121	-
NIH	7R01HG008155-04	Interpreting non-coding variants using epigenomics, regulatory models, & validation experiments	93.172	276,582	-
NIH	9-R01-GM132997-31	High Field DNP and EPR in Biological Systems	93.859	22,123	-
		Total for NIH		**109,377,448**	**14,088,252**
		TOTAL for Department of Health & Human Services		**113,815,252**	**14,088,252**

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DEPARTMENT OF HOMELAND SECURITY					
DHS	2014-DN-077-ARI080-02	ARI-LA: Rapid, Low-Dose Detection of Shielded Special Nuclear Material	97.077	-27,293	-
DHS	2014-DN-077-ARI080-04	ARI-LA: Rapid, Low-Dose Detection of Shielded Special Nuclear Material	97.077	10,449	-
		Total for Department of Homeland Security		**-16,844**	**-**
		TOTAL for Department of Homeland Security		**-16,844**	**-**

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DEPARTMENT OF TRANSPORTATION					
DOT	13-C-AJFE-046	Center of Excellence for Alternative Jet Fuels and Environment	20.109	88,995	-
DOT	13-C-AJFE-048	Center of Excellence for Alternative Jet Fuels and Environment	20.109	523,243	196,266
DOT	13-C-AJFE-MIT	Center of Excellence for Alternative Jet Fuels and Environment	20.109	29,877	-
DOT	13-C-AJFE-MIT-026	Center of Excellence for Alternative Jet Fuels and Environment	20.109	47,973	-
DOT	13-C-AJFE-MIT-041	Center of Excellence for Alternative Jet Fuels and Environment	20.109	49,636	-
DOT	13-C-AJFE-MIT-043	Center of Excellence for Alternative Jet Fuels and Environment	20.109	192,402	-
DOT	13-C-AJFE-MIT-045	Center of Excellence for Alternative Jet Fuels and Environment	20.109	161,510	-
DOT	13-C-AJFE-MIT-047	Center of Excellence for Alternative Jet Fuels and Environment	20.109	13,141	-
DOT	13-C-AJFE-MIT-050	Center of Excellence for Alternative Jet Fuels and Environment	20.109	72,805	-
DOT	13-C-AJFE-MIT-052	Center of Excellence for Alternative Jet Fuels and Environment	20.109	308,774	-
DOT	16-G-011	FAA Joint University Program for Air Transportation Activities	20.108	47,010	-
DOT	692M151940009	FAA Joint University Program for Air Transportation	20.108	56,831	-
DOT	693JJ618C000010	Augmented Reality for Railroad Operations Using Head-up Displays	20.RD	445,809	251,666
DOT	DTFH6115C00033	Future freight and logistics survey: integrated data collection using mobile sensing, wireless communication and machine learning algorithms	20.RD	84,755	-
DOT	DTFR5316P00052	Design and Implementation of a Head-up Display for the Cab Technology Integration Laboratory	20.RD	-169	-
DOT	DTRT13-G-UTC31	Region 1 University Transportation Center	20.701	464,123	301,750
DOT	DTRT5717C10121	Library Services for DOT	20.RD	76,592	-
DOT	DTRT5717P80110/V3332010	Ductile Fracture of Stainless Steel Rail Equipment	20.RD	79,529	-
		Total for Department of Transportation		**2,742,834**	**749,682**
		TOTAL for Department of Transportation		**2,742,834**	**749,682**

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MISCELLANEOUS FEDERAL GOVT					
Department of Interior					
DOI	D18AC00019	Ultrasmall and Ultrafast: Ferrimagnetic Skyrmions Manipulated by Spins and Photons	12.910	489,562	-
DOI	D18AC00037	Many-body atomic clocks based on non-equilibrium correlated quantum matter	12.910	308,835	183,419
DOI	D18AP00039	Adaptive-focus topological features for machine-learning-driven discovery of 2D coordination polymers	12.910	242,809	-
DOI	D18AP00065	Adversarial Machine Learning through the Cryptographic Lens	12.910	203,364	-
DOI	D18AP00070	Reconfigurable Energy-efficient Chip-scale Optical Network beyond the classical Figureof-merit (RECONFig)	12.910	138,225	-
DOI	G18AP00051	Interseismic and post-South Napa earthquake deformation in the Northern San Francisco Bay Region from survey GPS observations: Collaborative Research with MIT and UC Riverside	15.807	429	-
DOI	G20AP00022	Quantifying uncertainty in earthquake source parameters using the Large N LASSO Array: Collaborative Research with MIT and Boston University	15.807	10,145	-
DOI	R17AC00135	Tailoring Advanced Desalination Technologies for 21st Century Agriculture	15.506	36,473	-
DOI	R18AC00109	PILOT TESTING DYNAMIC OPTIMIZED, PHOTOVOLTAIC-POWERED, TIME-VARIANT ELECTRODIALYSIS REVERSAL DESALINATION SYSTEMS	15.506	248,143	-
DOI	R19AC00104	HIGH RECOVERY PULSED ELECTRIC FIELD ELECTRODIALYSIS REVERSAL DESALINATION TO MINIMIZE BRINE AND MITIGATE SCALE AT LOW COST	15.506	23,293	-
		Total for Department of Interior		**1,701,279**	**183,419**
Department of Education					
ED	P116F150045	Towards Scalable Differentiated Instruction Using Technology-enabled Competency-based Dynamic Scaffolding	84.116F	500,171	135,381
		Total for Department of Education		**500,171**	**135,381**
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	53,540	-
USDA	MRA DTD. 05/22/2018	GHG Benefits of Using Lumber in Construction	10.RD	-200	-
		Total for Department of Agriculture		**53,339**	**-**
Other Agencies					

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Federal Agency	Government Contract Number	Master Project Name	CFDA #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
Misc.	83618301	The Hawaii Island Volcanic Smog Sensor Network (HI-Vog)	66.509	188,460	74,868
Misc.	AID-OAA-A-12-00095	CITE and IDIN	98.001	1,265,189	97,250
Misc.	AID-OAA-A-16-00058	Ultra-Low Energy Drip Irrigation for MENA Countries	98.RD	888,373	279,067
Misc.	VA245-16-P-0574 P00001; PO#688-D60007	FORCE-MEASURING ULTRASOUND PROVE FOR DETECTION AND TREATMENT OF SARCOPENIA AND MYOSTEATOSIS IN OLDER AFRICAN AMERICANS	64.RD	-186	-
		Total for Other Agencies		**2,341,835**	**451,185**
		TOTAL for Miscellaneous Federal Govt		**4,596,624**	**769,985**

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Federal Agency	Government Contract Number	Master Project Name	CFDA #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION					
NASA	80MSFC17C0012	Imaging X-ray Polarimetry Explorer - Main Project (Phase B - D)	43.RD	304,666	-
NASA	80MSFC18M0033	Thermally stable nanocrystalline Nickel alloys by powder metallurgy	43.001	-1,727	-
NASA	80MSFC19C0050	Thermally stable nanocrystalline Nickel alloys by powder metallurgy	43.RD	138,264	-
NASA	80NSSC17K0048	HIGH-CADENCE XRT MONITORING OF ULTRALUMINOUS X-RAY SOURCES TO SEARCH FOR ORBITAL PERIODS (SWIFT 1215176)	43.001	29,778	-
NASA	80NSSC17K0125	16-AIST16-0048, Computer Aided Discovery and Algorithmic Synthesis for Spatio-Temporal Phenomena in InSAR	43.001	51,550	-
NASA	80NSSC17K0283	Autonomous Moisture Continuum Sensing Network	43.001	546,015	236,152
NASA	80NSSC17K0346	CLICK: CubeSat Laser Infrared Crosslink	43.012	79,029	58,433
NASA	80NSSC17K0561	Signatures of the multiple scales of motion in shaping marine phytoplankton biogeography	43.001	415,042	103,009
NASA	80NSSC17K0587	Cost and Risk Modeling of Distributed Missions: Applications for Trade-space Analysis Tool for Constellations (TAT-C)	43.001	26,384	-
NASA	80NSSC17K0612	A NUSTAR & NICER LOOK AT COMPTONIZATION, REFLECTION, AND THERMAL EMISSION IN CYGNUS X-1	43.001	34,575	-
NASA	80NSSC17K0773	Generating mare magmas by lunar magma ocean cumulate remelting: Experiments and models	43.001	87,508	-
NASA	80NSSC17M0075	Exploring Arctic Climate Change with Models and Data	43.001	286,736	-
NASA	80NSSC18K0138	High-Speed, Low-Noise, Radiation-Tolerant CCD Image Sensors for Strategic High-Energy Astrophysics Missions	43.001	363,833	-
NASA	80NSSC18K0162	Dynamic self-assembly driven by time varying fields	43.003	62,229	-
NASA	80NSSC18K0308	The K2 M Dwarf Program: Fields 13-15	43.001	15,758	-
NASA	80NSSC18K0457	Large Geodetic Array Processing and Correlation Impacts	43.001	180,724	-
NASA	80NSSC18K0553	Solar System Planetary Geodesy Research	43.001	3,572	-
NASA	80NSSC18K0623	First Constraint on Galactic Center MeV-GeV Cosmic-rays with Sgr B2 Fe K Emission	43.001	15,670	-
NASA	80NSSC18K0819	Precise Masses for K2's Ice Giants Observed by HST and Spitzer (PID 71/2018A_N115)	43.001	36,389	-
NASA	80NSSC18K0849	The MIT-Hawaii-IRTF Joint Campaign for NEO Spectral Reconnaissance	43.001	195,943	-
NASA	80NSSC18K1004	Earth, Mars or YORP spinup: Isolating the mechanisms for asteroid surface refreshing	43.001	33,279	-

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Federal Agency	Government Contract Number	Master Project Name	CFDA #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NASA	80NSSC18K1057	ASPECT: Active Shoreline Processes and Evolution of Coasts on Titan	43.001	131,584	66,554
NASA	80NSSC18K1088	Biosignature Preservation in Sulfate-Dominated Hypersaline Environments	43.001	113,214	61,371
NASA	80NSSC18K1091	Modeling extreme mass ratio inspirals: How accurate must the models be?	43.001	125,651	-
NASA	80NSSC18K1579	CLICK mission	43.012	344,022	54,361
NASA	80NSSC18K1608	THE FIRST NUSTAR OBSERVATION OF 4U 1907+09	43.001	31,112	-
NASA	80NSSC18K1615	Optimizing Sensitivity to Sterile Neutrino Dark Matter in the Galactic Center	43.001	40,024	-
NASA	80NSSC18K1616	X-RAY FLARES FROM YOUNG STARS AND THE SUN: BRIDGING THE GAP WITH NUSTAR+CHANDRA	43.001	64,211	-
NASA	80NSSC18K1643	Plasma and Energetic Particle Archive for Jovian Magnetospheric Interactions with the Galilean Moons	43.001	21,203	-
NASA	80NSSC18K1677	Auroral Emissions Radio Observer (AERO)	43.001	456,059	65,115
NASA	80NSSC18M0042	SPRINT: Scheduling Planning Routing Intersatellite Network Tool	43.012	153,295	-
NASA	80NSSC18M0045	High SPecific-impulse Electrospray Explorer for Deep-space (HiSPEED)	43.012	159,988	-
NASA	80NSSC19K0078	Ionospheric Response to Super Storms and Its Role in Geospace Coupling	43.001	193,527	-
NASA	80NSSC19K0157	XRT AND UVOT MONITORING OF THE TIDAL DISRUPTION FLARE ASASSN-14LI TO DETECT THE NEWLY FORMED ACCRETION DISK	43.001	40,006	-
NASA	80NSSC19K0205	Designing applications to foster the health of terrestrial and wetland ecosystems in the coastal zone of West Africa	43.001	140,120	-
NASA	80NSSC19K0211	Simulating the Operational Local Volume for Electrospray ion Thrusters (SOLVEiT)	43.012	172,720	-
NASA	80NSSC19K0217	MOSAIC: Miniature Optical Steered Antenna for Intersatellite Communication	43.012	138,309	-
NASA	80NSSC19K0262	Ionospheric imprint of regional mesopause variability - a four dimensional study of atmospheric coupling	43.001	126,652	46,273
NASA	80NSSC19K0335	High Resolution and High Efficiency X-ray Transmission Grating Spectrometer	43.001	967,960	-
NASA	80NSSC19K0342	Dynamics and Chemistry of the Summer Stratosphere	43.001	195,296	-
NASA	80NSSC19K0464	The Thermal Maturity of Neoproterozoic Strata: Carbonate Clumped Isotope Thermometry and Biomarker Analyses	43.001	160,508	-
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	131,671	38,361

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Federal Agency	Government Contract Number	Master Project Name	CFDA #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NASA	80NSSC19K0469	Microbial Functional and Evolutionary Adaptations to Aridity	43.001	81,365	-
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	190,936	-
NASA	80NSSC19K0617	Vector Interferometry Space Technology using AERO (VISTA)	43.001	660,128	60,033
NASA	80NSSC19K0634	NICER (Bridge) - Detector Team Support and Legacy Science	43.001	241,452	100,726
NASA	80NSSC19K0703	Responsive multimodal human-automation communication for augmenting human situation awareness in nominal and off-nominal scenarios	43.003	61,301	-
NASA	80NSSC19K0834	Can gravity wave generation in the mesospheric polar vortex drive traveling ionospheric disturbances?	43.001	85,868	14,909
NASA	80NSSC19K0943	Quantifying the Effect of Contrail Cirrus on Climate, Atmospheric Composition, and Air Quality Through Coordinated Modeling and Observation	43.001	173,296	-
NASA	80NSSC19K1028	Electronic Life-detection Instrument for Enceladus/Europa (ELIE)	43.001	137,188	17,491
NASA	80NSSC19K1055	Molybdenum-Tungsten Alloys for Nuclear Applications	43.012	94,194	-
NASA	80NSSC19K1287	NICER (Continuation) - Detector Team Support and Legacy Science	43.001	221,494	8,211
NASA	80NSSC19K1387	HIGH-CADENCE XRT MONITORING OF ULTRALUMINOUS X-RAY SOURCES TO SEARCH FOR ORBITAL PERIODS (Swift 1518170)	43.001	38,860	-
NASA	80NSSC19K1448	CONSTRAINING THE ORBIT AND CHARACTERIZING THE ACCRETION STRUCTURE OF 4U 1626-67 (NICER 2116)	43.001	5,620	-
NASA	80NSSC19K1515	Characterizing Unresolved Point-Source Populations in the Inner Galaxy	43.001	57,370	-
NASA	80NSSC19K1607	Traffic Management Paradigms for Autonomous Environments using Control Theory	43.002	60,317	-
NASA	80NSSC19M0039	Automated Reconfigurable Mission Adaptive Digital Assembly Systems (ARMADAS)	43.012	67,163	-
NASA	80NSSC19M0224	Surface Deformation and Change with Small Satellite Crosslink Communications and Precision Time Transfer Systems	43.001	3,359	2,230
NASA	80NSSC19P1387	Optimize Operational Parameters for Focal Plane Modules (FPMs) and Measurement and Power Unit (MPU)	43.RD	47,793	-
NASA	80NSSC20K0031	A Novel Probe of Low-Mass Axion Dark Matter Using Betelgeuse	43.001	20,300	-
NASA	80NSSC20K0037	PROBING THE ORIGIN OF SLOW PULSATIONS IN 4U 0114+65 (NuSTAR 5134)	43.001	1,453	-
NASA	80NSSC20K0234	Guiding the search for signals of biological and prebiotic processes by the NASA Mars 2020 Rover mission	43.001	27,128	-
NASA	80NSSC20K0238	Enabling Magnetic Studies of Returned Samples with the Mars 2020 Rover	43.001	124	-

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Federal Agency	Government Contract Number	Master Project Name	CFDA #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NASA	80NSSC20K0372	SIMULTANEOUS DISC AND CORONA REVERBERATION MAPPING IN AGN MRK 335 (NICER 2073)	43.001	13,551	-
NASA	80NSSC20K0382	The Impact of Titan's Impacts	43.001	12,864	-
NASA	80NSSC20K0400	Demonstration of Pointing Stability to Enable Astrophysics with Rotating Synthetic Aperture Telescopes	43.001	23,621	-
NASA	80NSSC20K0470	SIMULTANEOUS DISC AND CORONA REVERBERATION MAPPING IN AGN MRK 335 (SWIFT 1518037)	43.001	11,608	-
NASA	80NSSC20K0484	Delta T: Dynamics and Detectability of Deltas on Titan	43.001	10,727	-
NASA	80NSSC20K0575	COOLEST CORONA IN EDDINGTON-LIMITED AGN ARK 564 (NuStar)	43.001	13,235	-
NASA	80NSSC20K0737	MIT Participation in Calibration and Ground Software Development for XRISM	43.001	16,407	-
NASA	80NSSC20K0851	JOINT NUSTAR AND XMM TOO OBSERVATIONS TO CONSTRAIN THE SPINS OF SUPERMASSIVE BLACK HOLES IN TIDAL DISRUPTION FLARES (XMM 5210)	43.001	0	-
NASA	80NSSC20K1012	Continuing Development of Bragg Reflector Optics and Gratings for Polarimetry	43.001	6,153	-
NASA	80NSSC20M0071	RESOURCE: Resource Exploration and Science of OUR Cosmic Environment	43.001	56,773	-
NASA	NNA13AA90A	Foundations of Complex Life: Evolution, Preservation & Detection on Earth & Beyond	43.001	69,994	62,539
NASA	NNG14FC03C	Transiting Exoplanet Survey Satellite	43.RD	7,036,217	2,715,872
NASA	NNG15HZ35C	NASA Mark IV/VLBI Follow-On	43.RD	1,762,441	-
NASA	NNH17CH01C	The Mars Oxygen Isru Experiment (MOXIE) Continuation	43.RD	768,516	23,688
NASA	NNX13AJ86G	Mars Reconnaissance Orbiter (MRO) Gravity Field Analysis	43.001	7,378	-
NASA	NNX14AT22A	Global Environmental Impact of Supersonic Cruise Aircraft in the Stratosphere	43.004	105,932	-
NASA	NNX15AF85G	The Search for Extra-Terrestrial Genomes (SETG)	43.001	38,226	4,458
NASA	NNX15AH72G	Experimental and Theoretical Investigations of Solar Nebula Magnetic Fields	43.001	137,082	20,052
NASA	NNX15AK10G	Lunar Orbiter Laser Altimeter Investigation and Associated Science	43.001	239,719	-
NASA	NNX15AL14G	Continuing Progress in Soft X-ray Polarimetry	43.001	88,396	-
NASA	NNX15AL48G	ROSES: Cassini Data Analysis and Participating Scientists	43.001	38,653	38,653
NASA	NNX15AL62G	Investigating the Ancient Lunar Dynamo	43.001	163,224	43,155
NASA	NNX15AM35G	Investigating the history of destructive collisions in the asteroid and Kuiper belts	43.001	-35	-
NASA	NNX15AQ50A	Search and Rescue under the Tree Canopy	43.002	154,389	-

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Federal Agency	Government Contract Number	Master Project Name	CFDA #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NASA	NNX15AR20G	NRI: Exosuit System Design Parameters as Revealed by an Integrated, Human Musculoskeletal Computational Model	43.012	-65	-
NASA	NNX15AU41A	Rapid Viscous Aerodynamic Analysis/Design Methodology Utilizing Inviscid Coupling with a 3D Integral Boundary Layer	43.002	117,736	-
NASA	NNX15AU66A	Swept time-space domain decomposition rule for breaking the latency barrier	43.002	106,639	106,639
NASA	NNX15AW03A	BASALT: Biologic Analog Science Associated with Lava Terrains	43.001	52,996	-
NASA	NNX15AW94G	MIT Participation in Scientific Analysis and Interpretation Astro-H Data	43.001	81,751	-
NASA	NNX16AC98G	Advanced Global Atmospheric Gases Experiment [AGAGE] Collaborative Project: MIT Component	43.001	990,464	553,183
NASA	NNX16AD01G	High Precision Assembly of Thin Mirror X-ray Telescopes	43.001	141,448	-
NASA	NNX16AD29G	Experimental and Petrologic Investigations of Chemical Differentiation on the Ureilite Parent Body	43.001	34,992	-
NASA	NNX16AE93G	Raising the Technology Readiness Level of 4.7-THz local oscillators	43.001	1,960	-
NASA	NNX16AG82G	Electron Hole Instabilities in the Plasma Wake of Moons, Asteroids and Comets	43.001	37,670	8,154
NASA	NNX16AN15G	Use of Soil-Moisture Retrievals to Refine Global Land Trace Gases Emissions and their Climate Feedbacks	43.001	12,671	7,203
NASA	NNX16AR47G	Assessing Ecosystem Vulnerability to Climate Change through Optics, Imagery and Models	43.001	141,278	54,727
NASA	NNX17AC11G	REVEALING THE COMPACT OBJECT IN NGC 300 X-1 (XMM 2279)	43.001	14,115	-
NASA	NNX17AD07G	Laser Guide Star for Large Aperture Segmented Space Telescopes	43.012	18,185	16,153
NASA	NNX17AE47G	Development of High Resolution X-ray Telescope Optics	43.001	1,008,016	-
NASA	NNX17AG43G	Development of a Critical Angle Transmission Grating Spectrometer	43.001	148,145	-
NASA	NNX17AG98G	Improving positioning precision at geodetic core sites through exploration of atmospheric inter-technique synergies	43.001	81,965	1,367
NASA	NNX17AL45G	L3 Study Team / LISA Science Team participation	43.001	27,485	-
		Total for National Aeronautics and Space Administration		**22,881,579**	**4,589,075**
		TOTAL for National Aeronautics and Space Administration		**22,881,579**	**4,589,075**

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Federal Agency	Government Contract Number	Master Project Name	CFDA #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NATIONAL SCIENCE FOUNDATION					
NSF	2000726	Geometry and topology of holomorphic symplectic varieties	47.049	16,111	-
NSF	ACI-1442997	CIF21 DIBBs: An Infrastructure for Computer-Aided Discovery in Geoscience	47.070	26,993	-
NSF	ACI-1550172	Collaborative Research: SI2-SSI: Jet Energy-loss Tomography with a Statistically and Computationally Advanced Program Envelope (JETSCAPE)	47.070	73,869	-
NSF	ACI-1550487	Collaborative Research: SI2-SSI: Integrating Data with Complex Predictive Models under Uncertainty: An Extensible Software Framework for Large-Scale Bayesian Inversion	47.070	88,441	-
NSF	ACI-1640829	CIF21 DIBBs: PD: Metadata Toolkits for Building Multi-faceted Data-relationship Models	47.070	78,125	-
NSF	AGS-1343056	Collaborative Research: CEDAR -- Understanding the High-to-Mid Latitude Ionospheric Response to Stratospheric Warmings	47.050	-112	-
NSF	AGS-1461517	Trends and Variability of Temperatures near the Tropical Tropopause Layer and Implications for Tropical Cyclones	47.050	-252	-
NSF	AGS-1520825	Hazards SEES: Uncovering the hidden skeleton of environmental flows: advanced Langrangian methods for hazards prediction, mitigation and response	47.050	443,078	312,395
NSF	AGS-1539972	The Influence of Recent Volcanic Eruptions on Stratospheric Ozone Recovery: A Data Analysis and Modeling Study Including Estimated Uncertainties	47.050	60,746	-
NSF	AGS-1547733	Collaborative Research: Stratospheric Age in a Changing Climate: Connecting Theory, Models, and Observations	47.050	21,526	-
NSF	AGS-1552195	Improved understanding of the response of mean and extreme precipitation to climate change	47.050	121,395	593
NSF	AGS-1564495	Impacts of the biosphere on global tropospheric chemistry and climate	47.050	27,176	-
NSF	AGS-1623218	Collaborative Research: Using a hierarchy of models to constrain the temperature dependence of climate sensitivity	47.050	-1,640	-
NSF	AGS-1638672	Collaborative Research: Comprehensive Characterization of Atmospheric Organic Carbon over Multiple Generations of Oxidation	47.050	87,496	-
NSF	AGS-1702691	Collaborative Research: Madagascar Caves and Paleoclimate (MADCAP): Investigating climate variability in the Southern Hemisphere of the Western Indian Ocean	47.050	21,591	-
NSF	AGS-1740533	Collaborative Research: Convection and rainfall enhancement over mountainous tropical islands	47.050	193,386	-

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Federal Agency	Government Contract Number	Master Project Name	CFDA #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NSF	AGS-1749851	Collaborative Research: An in situ Closure Study of Mixed Phase Clouds	47.050	98,668	-
NSF	AGS-1749986	Improved understanding of changes in convective available potential energy and links to the large-scale circulation	47.050	179,022	-
NSF	AGS-1762141	A Next Generation Geospace Facility at Millstone Hill	47.050	1,850,614	-
NSF	AGS-1804512	Collaborative Research: P2C2: Reconstructing Northeast Mexico Hydroclimate since the Last Interglacial Period	47.050	39,635	-
NSF	AGS-1835576	Collaborative Research: Framework: Software: HDR: Data-Driven Earth System Modeling	47.050	118,339	-
NSF	AGS-1848863	Collaborative Research: Understanding the role of coupled chemistry-climate interactions in internal climate variability	47.050	125,712	-
NSF	AGS-1850089	Collaborative Research: Design of a Nanosat Constellation for Measuring Internal Gravity Wave Fluxes in the Earth's Stratosphere	47.050	127,861	-
NSF	AGS-1906719	Advancing the Understanding of the Impacts of Wave-Induced Temperature Fluctuations On Atmospheric Chemistry	47.050	73,494	-
NSF	AGS-1906768	Collaborative Research: Physics of and Climate Regulation by Convective Aggregation	47.050	131,557	-
NSF	AGS-1914920	Collaborative Research: Integrating GEOS-Chem atmospheric chemistry into the NCAR Community Earth System Model (CESM)	47.050	129,829	-
NSF	AGS-1929918	2019 Graduate Climate Conference	47.050	50,000	-
NSF	AGS-1933005	Collaborative Research: DASI Track 1: Development of a Distributed MIMO Meteor Radar Network for Space Weather Research	47.050	74,149	-
NSF	AGS-1936642	Integrating Observational Constraints and Modeling of Atmospheric Reactive Organic Carbon	47.050	10,023	-
NSF	AGS-1945871	The Global Circuits Paradox	47.050	37,426	-
NSF	AGS-1952737	Scientific and Technical Discovery at the Millstone Hill Geospace Facility	47.050	281,291	-
NSF	AST-1255160	CAREER: The origin of the metal-poor halo of the Milky Way	47.049	36	-
NSF	AST-1547331	Collaborative Research: Enhancing Access to Radio Spectrum for Real-Time Monitoring and Control	47.049	62,297	-
NSF	AST-1609547	Collaborative Research: EDGES: Detecting First Light and Reionization through the Global 21 cm Signature	47.049	13,794	-
NSF	AST-1614868	Shaping the Narrow Jets of Material from Supermassive Black Holes	47.049	147,088	-
NSF	AST-1659420	REU Site: Astronomy and Informatics at the MIT Haystack Observatory	47.049	69,212	-
NSF	AST-1716251	Establishing the properties of the first stars and supernovae and the origins of the heaviest elements with stellar archaeology	47.049	232,412	52,466

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Federal Agency	Government Contract Number	Master Project Name	CFDA #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NSF	AST-1751096	CAREER: Tracing the Birth and Growth of Galaxy Clusters with the South Pole Telescope 3rd Generation Survey	47.049	76,687	-
NSF	AST-1814053	Collaborative Research: Exploring the physics of galaxy clusters with comprehensive cosmological simulations	47.049	86,464	-
NSF	AST-1814259	Simulating galaxy formation with cosmic dust	47.049	247,679	-
NSF	AST-1824644	Discovery of New Small, Cool Planets Orbiting M-Dwarf Stars	47.049	131,224	-
NSF	AST-1828470	MRI [WINTER]: Development of a Wide-Field Infrared Camera for Robotic Surveys of the Dynamic Astronomical Sky	47.049	604,857	-
NSF	AST-1836002	LLAMAS: A Facility Integral Field Spectrograph for the Magellan Telescopes	47.049	1,085,073	-
NSF	AST-1909097	Exploring the LEGO Legacy Survey: Relating Galaxies observed by ALMA to the Milky Way	47.049	116,198	-
NSF	AST-1909307	Collaborative Research: EDGES-3: Validating and Refining Global 21cm Measurements of Cosmic Dawn	47.049	203,950	-
NSF	AST-1950348	REU/RET Site: Radio Science in Astronomy, Geodesy, and Geospace Science at MIT Haystack Observatory	47.049	35,363	-
NSF	BCS-1534318	The role of noise in information-theoretic models of sentence comprehension and production	47.075	2,019	-
NSF	BCS-1551866	CompCog: The edge of the lexicon: Productive knowledge and direct experience in the acquisition and processing of multiword expressions	47.075	67,823	-
NSF	BCS-1627068	Neural measures of social reward and information value in infants	47.075	63,282	-
NSF	BCS-1634050	Computational neuroimaging of human auditory cortex	47.075	-1,541	-
NSF	BCS-1724135	CRCNS US-German-Israeli Collaborative Research Proposal: Hierarchical Coordination of Complex Actions	47.075	78,254	-
NSF	BCS-1728970	Doctoral Dissertation Research: Pronominal System and Ergativity in Eastern Canadian Inuktitut	47.075	6,299	-
NSF	BCS-1823919	Expanding Access to Webcam-based online data collection for developmental research	47.075	191,043	-
NSF	BCS-1826757	CompCog: Advancing Understanding of Visual Crowding	47.075	165,190	-
NSF	BCS-1827598	Collaborative research: An integrated model of phonetic analysis and lexical access based on individual acoustic cues to features	47.075	131,549	-
NSF	BCS-1829350	Collaborative Research: CompCog: Broad-coverage probabilistic models of communication in context	47.075	2,033	-
NSF	BCS-1844723	Doctoral Dissertation Research: Extending and testing theories of language production by investigating speaker choice in a classifier language	47.075	11,315	-
NSF	BCS-1921501	Computational auditory scene analysis as causal inference	47.075	61,594	-

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Federal Agency	Government Contract Number	Master Project Name	CFDA #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NSF	CBET-0939511	Science and Technology Center: Emergent Behavior of Integrated Cellular Systems (EBICS)	47.041	3,535,405	2,597,272
NSF	CBET-1253228	CAREER: Predicting granular flows: Amorphous continuum modeling with a length-scale	47.041	-2,812	-
NSF	CBET-1454299	CAREER: Molecular Catalysis for Waste Valorization	47.041	157,184	-
NSF	CBET-1554398	CAREER: NANO-PARTICLE SELF-ASSEMBLY OUT OF EQUILIBRIUM	47.041	20,551	-
NSF	CBET-1602406	Polymer Dynamics of Knotted DNA	47.041	34,780	-
NSF	CBET-1605050	Collaborative Research: Dynamic simulation approaches to consequential life cycle assessment to evaluate recycling and substitution in metal and paper	47.041	-1,165	-
NSF	CBET-1605406	NSF/CBET-BSF: Effect of Sunlight Intensity on Functional Inhomogeneity and Stability of Organic-Inorganic Perovskite Solar Cells	47.041	72,293	-
NSF	CBET-1605547	Collaborative Research: SusChEM: Air-stable, high-lifetime bismuth compounds as solar absorbers with perovskite-like band structures	47.041	63,775	-
NSF	CBET-1605943	Collaborative Research: Understanding and Controlling Chemo-Mechanical Properties of Metal Coordinating Polymer and Inorganic Nanoparticle Composites	47.041	367	-
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	141,586	-
NSF	CBET-1703978	Multi-propulsor Hydrodynamics for Water-Air Transition in Archer Fish	47.041	50,174	-
NSF	CBET-1704266	Enabling high-throughput computational discovery of stable and active single-site oxidation catalysts	47.041	108,850	-
NSF	CBET-1705923	Engineering a new family of consensus repeat proteins based on nucleoporins	47.041	126,453	-
NSF	CBET-1706193	Collaborative Research: Hybrid Discrete-Continuum Numerical Simulation of Granular Materials	47.041	110,619	-
NSF	CBET-1729397	DMREF: Computational Design of Next-generation Nanoscale DNA-based Materials	47.041	440,138	148,121
NSF	CBET-1751925	CAREER: Holistic Assessment of the Potential of Byproduct-Derived Alkali-Activated Materials	47.041	84,842	-
NSF	CBET-1804241	Collaborative Research: Dynamic Manipulation of Micro-scale Liquid-Liquid Interfaces within Complex Droplets for Tunable Optics	47.041	83,559	-
NSF	CBET-1804247	Chemical and structural design of inorganic-organic layers for stabilized Li anodes	47.041	144,121	-

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Federal Agency	Government Contract Number	Master Project Name	CFDA #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NSF	CBET-1805566	Collaborative Research: Establishing Design Principles for Molecular Engineering of High Concentration Redox Electrolytes	47.041	144,377	-
NSF	CBET-1846426	CAREER: Revealing spin-state-dependent reactivity in open-shell single atom catalysts with systematically-improvable computational tools	47.041	37,337	-
NSF	CBET-1847541	CAREER: Hybrid Biorobotic Matrices to Simulate Diaphragmatic and Myocardial Biomechanics	47.041	87,264	-
NSF	CBET-1851052	Heat Transfer Across Nanostructured Metal-Semiconductor Interfaces	47.041	107,125	-
NSF	CBET-1907716	Understanding Gas Transport through Nanopores in Graphene Membranes	47.041	122,591	-
NSF	CBET-1919316	NSF transfer CAREER: Precision control for sustainable carbon nanotube manufacturing: Enabling next generation materials and defining the next generation engineer	47.041	99,784	-
NSF	CBET-1936696	Single Molecule Studies of Topologically Complex Polymers	47.041	51,300	-
NSF	CBET-1940251	Fluids and Health 2019 Conference	47.041	19,955	-
NSF	CBET-1944007	CAREER: Engineering interphases on omniphobic electrodes for selective electrosynthesis	47.041	38,749	-
NSF	CBET-2006299	CAREER: Engineering Heat Conduction Through Alloys and Interfaces	47.041	63,023	-
NSF	CBET-2026225	RAPID: Multiphase flow physics driving respiratory infectious disease transmission	47.041	41,324	-
NSF	CCF-1231216	A Center for Brains, Minds, and Machines: The Science and the Technology of Intelligence	47.070	4,400,228	1,522,480
NSF	CCF-1253205	CAREER: Information Theory Beyond Capacity	47.070	-2,382	-
NSF	CCF-1314547	SHF: AF: Large: Collaborative Research: Parallelism without Concurrency	47.070	-7	-
NSF	CCF-1452616	[Revised Budget] CAREER: Applications of Quantum Information Theory	47.070	71,289	-
NSF	CCF-1452994	CAREER: A Hardware and Software Architecture for Data-Centric Parallel Computing	47.070	86,267	-
NSF	CCF-1453126	CAREER: Resilient Design of Networked Infrastructure Systems: Models, Validation, and Synthesis	47.070	-7,045	-
NSF	CCF-1453261	CAREER: Algorithmic Aspects of Machine Learning	47.070	180,249	-
NSF	CCF-1461559	AF: Medium: Distributed Algorithms for Resource-Constrained and Dynamic Settings	47.070	132,759	-
NSF	CCF-1512611	SHF: Medium: Fiat: Correct-by-Construction and Mostly Automated Derivation of Programs with an Interactive Theorem Prover	47.070	57,069	-

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Federal Agency	Government Contract Number	Master Project Name	CFDA #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NSF	CCF-1521584	Collaborative Research: Expeditions in Computing: The Science of Deep Specification	47.070	78,767	-
NSF	CCF-1521759	Collaborative Research: Evolvable Living Computing - Understanding and Quantifying Synthetic Biological Systems' Applicability, Performance, and Limits	47.070	45,997	-
NSF	CCF-1521925	Collaborative Research: Evolable Living Computing: Understanding and Quantifying Synthetic Biological Systems' Applicability, Performance and Limits	47.070	725,747	-
NSF	CCF-1525705	CIF:Small: Cooperative Interference Engineering for Network Secrecy	47.070	29,353	-
NSF	CCF-1533644	XPS: FULL: FP: A profile-centric IDE for science-based performance engineering in the cloud	47.070	429,837	-
NSF	CCF-1533753	XPS: FULL: DSD: Scalable High Performance with Halide and Simit Domain Specific Languages	47.070	199,580	-
NSF	CCF-1535851	AitF: FULL: Sparse Fourier Transform: From Theory to Practice	47.070	105,363	-
NSF	CCF-1547999	EAGER: Collaborative Research: Algorithmic design principles for programmed DNA nanocages	47.070	26,256	-
NSF	CCF-1553428	CAREER: Fast Graph Algorithms and Continuous Optimization	47.070	126,533	-
NSF	CCF-1563880	Title: SHF: Medium: Collaborative Research: Run-Time Support for Scalable Concurrent Programming	47.070	9,945	-
NSF	CCF-1564025	AF: Medium: Collaborative Research: Top-down algorithmic design of structured nucleic acid assemblies	47.070	91,248	-
NSF	CCF-1565235	AF:Large:Collaborative Research: Algebraic Proof Systems, Convexity, and Algorithms	47.070	404,959	-
NSF	CCF-1617730	AF: SMALL: Frontiers in Algorithmic Game Theory	47.070	87,698	-
NSF	CCF-1640012	E2CDA: Type I: Collaborative Research: Energy Efficient Computing with Chip-Based Photonics	47.070	230,518	-
NSF	CCF-1651838	CAREER:Matrix Products: Algorithms and Applications	47.070	95,632	-
NSF	CCF-1717610	CIF:Small:Submodular Optimization Techniques for Sensor and Signal Processing	47.070	50,742	-
NSF	CCF-1717842	CIF: Small: Fundamental limits and coding for massive wireless random-access	47.070	122,109	-
NSF	CCF-1723344	AitF: Collaborative Research: Algorithms for Probabilistic Inference in the Real World	47.070	12,909	-
NSF	CCF-1725303	SPX: Collaborative Research: Mongo Graph Machine (MGM): A flash-based appliance for large graph analytics	47.070	362,900	-
NSF	CCF-1729369	Collaborative Research: EPiQC: Enabling Practical-Scale Quantum Computation	47.070	335,555	-
NSF	CCF-1733808	AitF: Collaborative Research: Fast, Accurate, and Practical: Adaptive Sublinear Algorithms for Scalable Visualization	47.070	47,708	-

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Federal Agency	Government Contract Number	Master Project Name	CFDA #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NSF	CCF-1740184	E2CDA: Type I: Collaborative Research: Energy-Efficient Artificial Intelligence with Binary RRAM and Analog Epitaxial Synaptic Arrays	47.070	121,835	-
NSF	CCF-1740519	AF: Medium: Collaborative Research: Hardness in Polynomial Time	47.070	135,664	-
NSF	CCF-1740525	AF: Small: Graphs and structures for distance estimation	47.070	3,864	-
NSF	CCF-1740751	MIT Institute for Foundations of Data Science	47.070	322,962	-
NSF	CCF-1741615	CAREER: Common Links in Algorithms and Complexity	47.070	85,133	-
NSF	CCF-1751011	CAREER: A Programming Language for Developing Software to Execute Reliably on Unreliable Hardware	47.070	167,023	-
NSF	CCF-1807575	SemiSynBio:Collaborative Research:Very large-scale genetic circuit design automation	47.070	167,998	-
NSF	CCF-1810758	NSF-BSF: AF: Small: An Algorithmic Theory of Brain Networks	47.070	179,683	-
NSF	CCF-1814969	SHF: Small: A Scalable Architecture for Ubiquitous Parallelism	47.070	181,294	-
NSF	CCF-1816209	CIF: Small: Occlusion-Based Computational Imaging and Scene Analysis: Theory, Methods and Applications	47.070	21,260	-
NSF	CCF-1836712	FMitF: Verifying concurrent system software with Cspec	47.070	282,038	-
NSF	CCF-1845763	CAREER: Parallel Algorithms and Frameworks for Graph and Hypergraph Processing	47.070	26,917	-
NSF	CCF-1901292	AF: Medium: Collaborative Research: Theoretical Foundations of Deep Generative Models and High-Dimensional Distributions	47.070	39,353	-
NSF	CCF-1909429	AF:Small Average-Case Fine-Grained Complexity	47.070	208,651	-
NSF	CCF-1931307	NSF Student Travel Grant for 2019 TCS Women Meeting at STOC	47.070	15,315	-
NSF	CCF-1937501	RTML: Large: Co-design of Hardware and Algorithms for Energy-efficient Robot Learning	47.070	80,512	-
NSF	CCF-1940205	CAREER: Reducibility among high-dimensional statistics problems: information preserving mappings, algorithms, and complexity.	47.070	3,832	-
NSF	CCF-1956054	AF Medium: DNA-based Data Storage and Computing Materials	47.070	18,436	-
NSF	CCR-1822920	SPX: Collaborative Research: Distributed Database Management with Logical Leases and Hardware Transactional Memory	47.070	5,215	-
NSF	CFF-1931313	SPX: Collaborative Research: Workshop on Future Directions for Parallel and Distributed Computing	47.070	13,232	-
NSF	CHE-1351646	CAREER: Stable Carbenes as Surface Anchoring Groups	47.049	684	-
NSF	CHE-1452857	CAREER: Ligand-Mediated Photothermal Energy Dissipation in Semiconductor Nanocrystals	47.049	53,882	-
NSF	CHE-1454060	CAREER: Oxygen Reduction Catalysis at Tunable Metal Sulfide Nanofilms	47.049	2,525	-

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NSF	CHE-1463707	Multiple Metal-Carbon Bonds, Metallacycles and Catalytic Olefin Metathesis Reactions	47.049	5,072	-
NSF	CHE-1464799	New Cycloaddition and Annulation Strategies for Organic Synthesis	47.049	122,769	-
NSF	CHE-1629358	DMREF: Analysis and Optimization of Polymer Networks for Emerging Applications	47.049	191,603	-
NSF	CHE-1653289	CAREER: Nanocomposite Structure Control via Nanoparticle Self-Assembly	47.049	-16,983	-
NSF	CHE-1654415	CAREER: Characterizing Water's Response to Hydrophilic Surfaces	47.049	112,599	-
NSF	CHE-1664799	Synthesis of d- and p-Block Element Molecules, Reagents, and Precursors	47.049	97,963	-
NSF	CHE-1665383	Coherent Spectroscopy and Coherent Control of Molecules and Materials	47.049	184,263	-
NSF	CHE-1709364	Chemical and biochemical determinants of phosphorothioate stability and location in bacterial genomes	47.049	142,224	101,765
NSF	CHE-1709993	Collaborative Research: Multiphase Reactivity of Atmospheric Organic Radicals: Gas- vs. Liquid- vs. Particle-phase Chemistry	47.049	233,976	-
NSF	CHE-1800301	Stochastic Path Integral Formalism and Applications to Coherent Energy Transfer	47.049	80,522	-
NSF	CHE-1800410	Molecular Rydberg Spectra Encode Intramolecular Dynamics	47.049	185,457	-
NSF	CHE-1828570	MRI: Development of a broadband THz electron paramagnetic resonance spectrometer	47.049	165,937	-
NSF	CHE-1836913	EAGER: Analog Quantum Simulation of Dissipative Quantum Dynamics in Condensed-Phase Chemical Systems	47.049	47,353	-
NSF	CHE-1839155	RAISE- TAQS: Room-Temperature Quantum Sensing and Computation using DNA-based Excitonic Circuits	47.049	304,563	-
NSF	CHE-1845464	CAREER: Reprogramming Transcriptional Regulation by Chemical Stabilization of Repressive Homodimers	47.049	110,014	-
NSF	CHE-1900060	Main Group Catalysts for N-H and O-H Activation Chemistry	47.049	130,980	-
NSF	CHE-1900109	Exploration of Non-Equilibrium Interfacial Phenomena in Spin Forbidden Oxidation	47.049	95,182	-
NSF	CHE-1900358	Fragment Embedding for Photochemical Electronic Structure Simulations	47.049	155,957	-
NSF	CHE-1900391	New Cycloaddition and Annulation Strategies for Organic Synthesis	47.049	54,993	-
NSF	CHE-1904867	Expanding N-Heterocyclic Carbene Surface Chemistry	47.049	115,067	-
NSF	CHE-1945500	CAREER: Fundamentals of conformational and surface water dynamics in supramolecular nanofibers	47.049	69,223	-

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Federal Agency	Government Contract Number	Master Project Name	CFDA #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NSF	CHE-1955612	Synthesis of d- and p-Block Element Molecules, Reagents, and Precursors	47.049	7,629	-
NSF	CHE-1955628	Sustainable Carboxylation with Carbon Dioxide at Tailored Heterogeneous Electrocatalysts	47.049	1,478	-
NSF	CHE-2029751	COVID-19: Collaborative Research: RAPID: Augmenting Mucosal Gels with Associating Brush Polymers to Prevent COVID19 Infection	47.049	4,008	-
NSF	CMMI-1351512	CAREER: Simulation-based optimization techniques for urban transportation problems	47.041	7,571	-
NSF	CMMI-1351619	CAREER: Advanced Mixed Integer Programming Formulations	47.041	3,004	-
NSF	CMMI-1452875	CAREER: A Closed Loop Methodology for Investigating Trust, Culture, and Information Sharing in Global Supply Chains	47.041	120,261	-
NSF	CMMI-1462158	Learning Graphical Models: Hardness and Tractability	47.041	49,512	-
NSF	CMMI-1536233	The Role of Genetic Modifications, Age and Exercise on Cartilage Biomechanics using Genetically Engineered Mice	47.041	61,334	-
NSF	CMMI-1547154	EAGER: Cybermanufacturing: A WYSIWYG Middleware for Additive Manufacturing	47.041	24,975	-
NSF	CMMI-1562567	Collaborative Research: Ultrasound, oxide, and oxygen: Microscale mechanisms for next-generation alloy casting	47.041	23,636	-
NSF	CMMI-1562912	Analytical probabilistic traffic models for large-scale network optimization	47.041	93,075	-
NSF	CMMI-1563343	A Data-Driven and Real-time Approach to Personalized Bundle Recommendation and Pricing; from Theory to Practice	47.041	160,786	-
NSF	CMMI-1634259	Revenue Management For Enterprise Users of Cloud Infrastructure	47.041	128,488	-
NSF	CMMI-1644558	CM/Collaborative Research: A Computational Approach to Customizing Design	47.041	189,813	-
NSF	CMMI-1661627	Designing Extremely Robust Soft Wet Adhesives by Exploiting Molecular-Scale Reversible Crosslinks and Macro-Scale Instabilities	47.041	24,512	-
NSF	CMMI-1702689	Collaborative Research: Multiscale modeling and measurement of clay aggregate behavior	47.041	88,175	-
NSF	CMMI-1727189	Quasi-integral control for robustness to perturbations of integrated genetic devices in living cells for biotechnology	47.041	240,366	-
NSF	CMMI-1727239	An Optimization Framework for Optimal A-B Testing	47.041	144,233	-
NSF	CMMI-1727565	Boundary interactions in pilot-wave hydrodynamics	47.041	103,868	-
NSF	CMMI-1729304	DMREF:GOALI: Discovery and Design of Additives for Novel Polymer Morphology and Performance	47.041	168,458	-
NSF	CMMI-1752172	CAREER: Directed Epitaxial Assembly of Structural Biopolymers in Hierarchical Mesostructures for Enhanced Mechanical Behavior, Mass Transport and Heat Transfer.	47.041	54,067	-

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NSF	CMMI-1760025	Electrochemical separation and recovery of metals from liquid alloys	47.041	120,808	-
NSF	CMMI-1762961	Computational Modeling for Predicting 3D Cancer Cell Invasion into ECM Fiber Network	47.041	186,571	-
NSF	CMMI-1824297	AN INTEGRATED EXPERIMENTAL AND COMPUTATIONAL PLATFORM FOR DISCOVERY AND PROCESSING OF FUNCTIONAL NANO-EMULSIONS	47.041	240,909	-
NSF	CMMI-1825731	Collaborative Research: Nanomanufacturing of Wafer-Scale 2D Materials: From multilayer precisely into monolayers	47.RD	93,703	-
NSF	CMMI-1826097	Collaborative Research: Learning to Control Dynamically Complex Objects	47.041	97,731	-
NSF	CMMI-1826216	Manufacturing USA: Fundamentals and Applications of High-Resolution Flexographic Printing Using Nanoporous Stamps	47.RD	39,424	-
NSF	CMMI-1841231	EAGER: A Systems Approach to Predicting and Preventing Accidents During Operations	47.041	70,678	-
NSF	CMMI-1854833	Hybrid Intelligence for Design: Bridging Human and Machine Intelligences for Collaborative Design of Engineering Systems and Infrastructure	47.041	194,468	-
NSF	CMMI-1917891	Trinity: Tradable Mobility Credits for Efficient Transportation	47.RD	179,564	-
NSF	CMMI-1922206	DMREF: Collaborative Research: Fundamentals of short-range order-assisted alloy design: Thermodynamics, kinetics, mechanics	47.041	258,725	-
NSF	CMMI-1929465	Equitable Resilience (ER): A Necessary and Under-investigated Aspect of Sustainable Urban Systems (SUS)	47.041	7,615	-
NSF	CMMI-1933416	Collaborative Research: Wettability Control on the Mechanics of Hydrocapillary Fracture	47.041	75,935	-
NSF	CMMI-1942016	Career: Shear Shock Propagation and Damage in Soft Materials	47.041	47,000	-
NSF	CNS-1138967	Collaborative Research: An Expedition in Computing for Compiling Functional Physical Machines	47.070	-12,046	-
NSF	CNS-1347267	MIT VMS I-Corps Site	47.070	24,563	-
NSF	CNS-1350619	CAREER: Computing on Encrypted Data	47.070	-400	-
NSF	CNS-1350685	CAREER: Practical Algorithms and Fundamental Limits for Complex Cyber-Physical Systems	47.070	238,347	-
NSF	CNS-1407470	NeTS:Medium:Collaborative Research:An App-Centric Transport Architecture for the Internet	47.070	78,475	-
NSF	CNS-1413920	TWC: TTP Option: Frontier: Collaborative: MACS: A Modular Approach to Cloud Security	47.070	78,235	-
NSF	CNS-1413973	NeTS Large: Collaborative Research: Location-Independent Networks: Evaluation Strategies and Studies	47.070	99,748	-
NSF	CNS-1523546	NeTS:Small: Low Latency Scheduling for Data Centers	47.070	260,360	-

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NSF	CNS-1524317	NeTS: Small: A Migration Approach to Optimal Control of Wireless Networks	47.070	138,547	-
NSF	CNS-1526815	NSFSaTC-BSF: TWC: Small: Enabling Secure and Private Cloud Computing using Coresets	47.070	206,441	-
NSF	CNS-1544413	CPS: Synergy: Collaborative Research: Design and Control of High-performance Provably-safe Autonomy-enabled Dynamic Transportation Networks	47.070	-1,348	-
NSF	CNS-1544751	CPS: TTP Option: Synergy: Collaborative Research: Hardening Network Infrastructures for Fast, Resilient, and Cost-Optimal Wide-Area Control of Power S	47.070	-18,260	-
NSF	CNS-1563763	CSR:Medium: A high-performance certified file system and applications	47.070	173,646	-
NSF	CNS-1563826	NeTS: Medium: Collaborative Research: Language and Hardware Primitives for Programming the Data Plane in High-Speed Networks	47.070	118,413	-
NSF	CNS-1617091	NeTS: Small: Collaborative Research: Ultrascale WDM-based Datacenter Networks: Architecture Design and Control Algorithms	47.070	141,793	-
NSF	CNS-1617487	CSR: Small: Operating Systems Kernels in High-Level Languages	47.070	57,549	-
NSF	CNS-1617702	NeTS:Small:Collaborative Research: A Fast and Flexible Transport Architecture for High Speed Networks	47.070	29,712	-
NSF	CNS-1639994	Transparency Bridges: Exploring Transparency Requirements in Smartphone Ecosystems	47.070	49,703	-
NSF	CNS-1644877	CPS: Breakthrough: Collaborative Research: . Transactive control of smart railway grid.	47.070	68,421	-
NSF	CNS-1701964	WiFIUS: Collaborative Research: Ultra-low latency and High Reliability forWireless IoT	47.070	76,453	-
NSF	CNS-1704172	CSR: Medium: Collaborative Research: Soup: Flexible Storage and Processing for On-Line Applications	47.070	276,105	-
NSF	CNS-1713725	NeTS: Small: Optimizing Information Freshness in Wireless Networks	47.070	111,383	-
NSF	CNS-1717199	NeTS: Small: Cognitive Management and Control of Agile Dynamic Optical Networks	47.070	77,850	-
NSF	CNS-1718161	NSF-BSF: Foundations of Lattice-based Cryptography	47.070	139,031	-
NSF	CNS-1730389	CI-New: Collaborative Research: Modeling the Next-Generation Hybrid Cooling Systems for High-Performance Processors	47.070	43,974	-
NSF	CNS-1735463	CRISP Type 2: Collaborative Research: Understanding the benefits and mitigating the risks of interdependence in critical infrastructure systems	47.070	263,108	-
NSF	CNS-1739505	CPS: Small: Recover Algorithms for Dynamic Infrastructure Networks	47.RD	94,227	-

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NSF	CNS-1739723	CPS: Small: Scaling Cyber-Physical Systems to the Low-Power Internet of Things	47.070	119,794	-
NSF	CNS-1743605	Free space optical network Workshop	47.070	6,386	-
NSF	CNS-1751009	CAREER: Data-Driven Network Resource Management Systems	47.070	180,110	-
NSF	CNS-1812522	SaTC:CORE:Small: verifying security for data non-interference	47.070	136,880	-
NSF	CNS-1813087	SaTC: CORE: Small: Design of Efficient, Horizontally-Scaling, and Strongly Anonymous Communication Networks	47.070	78,574	-
NSF	CNS-1815221	SaTC: CORE: Small: Towards Adversarially Robust Machine Learning	47.070	131,393	-
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	397,131	-
NSF	CNS-1841562	NSF Student Travel Grant for the ACM Conference on Information-Centric Networking 2018	47.070	3,286	-
NSF	CNS-1844280	CAREER: Wirelesss Sensing for In Vivo Medical Devices	47.070	102,981	-
NSF	CNS-1850937	I-Corps Teams: A Social Platform that Models User Identity Via Interactive Stories	47.070	21,411	21,143
NSF	CNS-1851293	I-Corps: 6Sensing: Chip-scale Raman sensors	47.041	11,665	-
NSF	CNS-1910676	CNS Core: Small: Network Architecture and Routing Protocols for Payment Channel Networks	47.070	224,821	-
NSF	CNS-1923130	CSforAll: RPP: Pathways for Advancing Computing Education	47.070	45,039	-
NSF	CNS-1925583	CCRI: Planning: Algorithmically Updating Repository of Reductions in Fine-Grained Complexity	47.070	108,721	-
NSF	CNS-1925609	CCRI: Medium: Cilk Infrastructure for Next-Generation Parallel-Programming Research	47.070	80,146	-
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	19,038	-
NSF	CNS-1938999	NSF Student Travel Grant for the ACM Conference on Information-Centric Networking 2019 (ACM ICN 2019)	47.070	4,316	-
NSF	CNS-1946976	EAGER: Scalable Photonic AI Accelerators Based on Photoelectric Multiplication	47.070	7,119	-
NSF	CNS-2031115	COVID-19: RAPID: Coordination and summarization of studies of cyberspace during COVID-19 pandemic	47.070	3,332	-
NSF	DEB-1655983	NSFDEB-BSF: Ecological networks and ecosystem function in the cow rumen microbiome: a multi-scale approach	47.074	251,359	-
NSF	DEB-1924148	CNH2-S: Mercury Pollution and Human-Technical-Environmental Interactions in Artisanal Mining	47.074	29,269	12,273

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Federal Agency	Government Contract Number	Master Project Name	CFDA #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NSF	DEB-2024349	EAGER: Bioforecasting: understanding and predicting species persistence in ecological communities under changing environments	47.074	2,324	-
NSF	DGE-1745302	Graduate Research Fellowship Program (GRFP)	47.076	15,084,972	-
NSF	DGE-1806815	IGE: Enhancing Graduate Education in Systems Thinking and Multi-Stakeholder Design through a Co-Creation Toolkit	47.076	173,059	-
NSF	DGE-1807086	Collaborative Research: NRT-IGE: Employing Model-Based Reasoning in Environmental Science (EMBeRS)	47.076	47,839	-
NSF	DMR-1253306	CAREER: Self-Assembly of Fusion Proteins to Form Biofunctional Materials	47.049	-199	-
NSF	DMR-1419807	NSF Materials Research Science and Engineering Centers (MRSEC) - Full Proposal	47.049	2,112,558	110,250
NSF	DMR-1452612	CAREER: Small Molecule Redox Reactivity at MOF Secondary Building Units	47.049	158,670	-
NSF	DMR-1505947	Solid-State Dewetting of Metallic Thin Films	47.049	3,824	-
NSF	DMR-1507047	BaSnO3 as a Transparent Mixed Ionic-Electronic Conducting Material - Utilizing Novel In Situ Methods to Advance Understanding of Structure-Processing-Property Relations	47.049	64,587	-
NSF	DMR-1508072	SusChEM: Material and Morphometric Control of Bacterial Cellulose via Genetic Engineering, Post-Processing and 3D-Printed Molding	47.049	-32,937	-
NSF	DMR-1509197	Collaborative Research: Nanostructured Conductive Tin Oxide for High-Efficiency Light Trapping in Thin Films and Photonic Devices	47.049	-1,743	-
NSF	DMR-1534340	DMREF: Collaborative Research: The Synthesis Genome: Data Mining for Synthesis of New Materials	47.049	175,731	38,007
NSF	DMR-1554891	CAREER: Geometrical Frustration in Spin Orbit Systems	47.049	89,569	-
NSF	DMR-1606911	Directed Self Assembly of Triblock Terpolymer Films	47.049	893	-
NSF	DMR-1606914	"Accelerated Sintering in "Nano-Duplex" Dual Phase Nanostructured Alloys	47.049	227	-
NSF	DMR-1608505	Novel phases of electronic insulators and quantum Hall systems	47.049	22,825	-
NSF	DMR-1645232	2016 Alan T. Waterman Award	47.049	140,406	-
NSF	DMR-1651101	CAREER : Development of Fundamental Relationships Between Surface Structu re, Composition, Stability, and Activity of Oxide Electrocatalysts in Aqueou s Environments	47.049	-30,011	-
NSF	DMR-1654548	CAREER: Quantifying Radiation Damage in Metals with Wigner Energy Spectral Fingerprints	47.049	132,754	-
NSF	DMR-1700137	Surface/Interface Phenomena and Topological Order in Emerging Quantum Materials	47.049	235,104	-
NSF	DMR-1708280	FORCES & FLUCTUATIONS OUT OF EQUILIBRIUM	47.049	61,427	-

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Federal Agency	Government Contract Number	Master Project Name	CFDA #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NSF	DMR-1709315	Dynamics of Associative Polymers Revealed by Self-Diffusion	47.049	80,638	-
NSF	DMR-1743059	Convergence QL: NSF/DOE Quantum Science Summer School	47.049	44,767	-
NSF	DMR-1751736	CAREER: Fundamentals of complex chalcogenide electronic materials	47.049	222,600	-
NSF	DMR-1751739	CAREER: FRACTAL ELECTRONIC TEXTURES IN QUANTUM CRITICAL SOLIDS	47.049	146,841	-
NSF	DMR-1808190	Rare earth garnets for spintronics	47.049	171,677	-
NSF	DMR-1809740	Synthesis and Applications of Functional Carbon Nanomaterials	47.049	47,957	-
NSF	DMR-1809802	Tuning the Electronic and Topological Properties of Twisted van der Waals Heterostructures	47.049	118,541	-
NSF	DMR-1809815	Probing Chiral Fermion Dynamics in Topological Semimetals	47.049	124,215	-
NSF	DMR-1847861	CAREER: Strongly correlated systems through the lens of topological phases	47.049	78,811	-
NSF	DMR-1905164	Scalable Quantum Emitters Enabled through Rational Bottom-Up Synthesis	47.049	322,944	-
NSF	DMR-1911666	Novel Phases of Electronic Insulators and Quantum Hall Systems	47.049	106,596	-
NSF	DMR-1911792	Epitaxial Ceramic Nanocomposites by Design	47.049	203,284	-
NSF	DMR-1922311	DMREF: Collaborative Research: The Synthesis Genome: Data Mining for Synthesis of New Materials	47.049	40,964	-
NSF	DMS-1350472	CAREER: Motives: Voevodsky versus Kontsevich	47.049	4,970	-
NSF	DMS-1406348	Instantons, low dimensional topology and knotted graphs	47.049	-10	-
NSF	DMS-1462401	FRG: Collaborative Research: Long-term dynamics of nonlinear dispersive and hyperbolic equations: deterministic and probabilistic methods	47.049	3,206	-
NSF	DMS-1500219	Extremal graph theory, graph limits, and algebraic invariants	47.049	-81	-
NSF	DMS-1500771	Free boundaries and extremal inequalities	47.049	27,429	-
NSF	DMS-1502244	Tensor categories and representation theory	47.049	133,456	-
NSF	DMS-1510305	Flexibility in symplectic and contact geometry	47.049	21,702	-
NSF	DMS-1512925	Three-Dimensional Nonlinear Internal Wave Beams: Mathematical Models and Laboratory Experiments	47.049	25,287	-
NSF	DMS-1521765	Collaborative Research: Computational methods for ultra-high sensitivity magnetometry of geological samples	47.049	2,132	-
NSF	DMS-1522526	Computational methods in arithmetic geometry	47.049	3,487	-
NSF	DMS-1566618	Mathematical Sciences: Geometric methods in the representation theory of affine Hecke algebras, finite reductive groups and character sheaves	47.049	-2	-
NSF	DMS-1601946	Topics in arithmetic geometry	47.049	223,152	-

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Federal Agency	Government Contract Number	Master Project Name	CFDA #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NSF	DMS-1601953	Wall-crossing and dualities in representation theory	47.049	119,445	-
NSF	DMS-1607901	Integrable probability	47.049	54,971	-
NSF	DMS-1623977	2017-2019 Talbot Workshops	47.049	9,998	-
NSF	DMS-1651995	CAREER: Gaussian Graphical Models: Theory, Computation, and Applications	47.049	21,154	-
NSF	DMS-1664412	FRG: cQIS: Collaborative Research: Mathematical Foundations of Topological Quantum Computation and its applications	47.049	159,614	-
NSF	DMS-1664619	FRG: Collaborative Research: Integrable Probability	47.049	86,973	-
NSF	DMS-1700127	Dynamics of nonlinear wave equations	47.049	36,185	-
NSF	DMS-1707270	Mean Curvature Flow and Nonlinear Heat Equations	47.049	101,191	-
NSF	DMS-1712596	Collaborative Research: Statistical Estimation with Algebraic Structure	47.049	76,255	-
NSF	DMS-1712862	Universal randomness in 2D	47.049	101,680	-
NSF	DMS-1719637	Collaborative Research: Overcoming order reduction and stability restrictions in high-order time-stepping	47.049	23,288	-
NSF	DMS-1723011	Collaborative Research: CDS&E-MSS: Stochastic Approximations for the Solution and Uncertainty Analysis of Data-Intensive Inverse Problems	47.049	15,506	-
NSF	DMS-1737944	Algorithms for anomaly detection using graphical models	47.049	154,729	-
NSF	DMS-1749858	CAREER: Classical and quantum chaos	47.049	61,869	-
NSF	DMS-1760264	FRG: Collaborative Research: Algebra and geometry behind link homology	47.049	56,728	-
NSF	DMS-1764176	Graph Theory and Additive Combinatorics	47.049	66,549	-
NSF	DMS-1764370	Combinatorics in Algebra, Geometry, and Physics	47.049	46,565	-
NSF	DMS-1764403	Collaborative Research: Dynamics of Nonlinear PDE: Integrating Deterministic and Probabilistic Methods	47.049	56,751	-
NSF	DMS-1808794-002	Gauge Theory and Trivalent Graphs in Three Manifolds	47.049	80,336	-
NSF	DMS-1810638	Motivic homotopy theory, stable homotopy groups of spheres and the Kervaire invariant	47.049	72,534	-
NSF	DMS-1811267	Non-compact solutions to geometric flows	47.049	97,585	-
NSF	DMS-1812142	Evolution equations in geometry	47.049	149,989	-
NSF	DMS-1838118	Arithmetic and geometry around relative trace formulae	47.049	41,293	-
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	138,916	-
NSF	DMS-1845034	CAREER: Higher enumerative geometry via representation theory and mathematical physics	47.049	2,876	-

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Federal Agency	Government Contract Number	Master Project Name	CFDA #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NSF	DMS-1845034-001	CAREER: Higher enumerative geometry via representation theory and mathematical physics	47.049	12,875	-
NSF	DMS-1853981	Colored Stochastic Vertex Models	47.049	32,709	-
NSF	DMS-1855773	Mathematical Sciences:Geometric methods in the representation theory of affine Hecke algebras, finite reductive groups and character sheaves	47.049	28,760	-
NSF	DMS-1901642-001	Algebraic cycles and L-values	47.049	101,246	-
NSF	DMS-1901849	K-stability and higher dimensional geometry	47.049	43,221	-
NSF	DMS-1902645	Geometric Partial Differential Equations and Algebraic Geometry	47.049	49,747	-
NSF	DMS-1904997-001	Lefschetz fibrations, their noncommutative counterparts, and formal groups	47.049	77,092	-
NSF	DMS-1905165	Minimal surfaces in geometric variational problems	47.049	44,143	-
NSF	DMS-1906072	Classical methods in motivic homotopy theory	47.049	29,556	-
NSF	DMS-1916120	PRIMES, MathROOTS, and CrowdMath: Expanding Opportunities for High School Students	47.049	81,127	-
NSF	DMS-1940092	CAREER: Phase Transitions in Randomized Combinatorial Search and Optimization Problems	47.049	118,242	-
NSF	DMS-1952531	FRG: Collaborative Research:Algebraic geometry and singularities in positive and mixed characteristic	47.049	18,326	-
NSF	DMS-1953946	Analytic and Algebraic Methods in Discrete Geometry	47.049	16,721	-
NSF	DMS-2000192	Multiplicities and Period Integrals for Spherical Varieties	47.049	16,111	-
NSF	DMS-2002778	Convex body shape recovery via geometric measures and inequalities	47.049	16,222	-
NSF	DRL-1418122	Collaborative Research: Revealing the Invisible: Data-Intensive Research Using Cognitive, Psychological, and Physiological Measures to Optimize STEM Learning	47.076	28,332	-
NSF	DRL-1508911	Collaborative Research: Building Enhanced Scientific Thinking through Modeling Ecosystems	47.076	11,028	-
NSF	DRL-1614548	Collaborative Research: WAVES: A STEM-Powered Youth News Network for the Nation	47.076	161,868	-
NSF	DRL-1639069	DRK-12 Teachers with GUTS (PI Irene Lee)	47.076	148,802	-
NSF	DRL-1644540	Neurocognitive underpinnings of dyslexia and dyscalculia	47.076	447,222	91,237
NSF	DRL-1723459	EAGER: MAKER: Collaborative: Beyond Rubrics: Moving Towards Embedded Assessment in Maker Education	47.076	20,398	8,849
NSF	DRL-1734443	NRI: INT: COLLAB: Development, Deployment and Evaluation of Personalized Learning Companion Robots for Early Literacy and Language Learning	47.070	496,705	103,258
NSF	DRL-1906636	Outsmarting Artificial Intelligence	47.076	15,530	-

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NSF	DRL-1934126	Made with Math	47.076	191,497	-
NSF	DRL-2022502	EAGER: ITEST: Developing AI Literacy (DAILy): An EAGER proposal to refine and study interventions to teach fundamental concepts in AI	47.076	26,795	6,738
NSF	DUE-1503793	Discovery-Based Student Learning with the Haystack 37-m Radio Telescope	47.076	10,051	-
NSF	DUE-1709359	Collaborative Research: Student Produced Audio Narratives (SPAN)	47.076	5,405	-
NSF	DUE-1734870	NCS-FO: Collaborative Research: Ground-Truth Analysis and Modeling of Entire Individual C. elegans Nervous Systems	47.076	13,889	-
NSF	DUE-1839921	FW-HTF Theme 2: Collaborative Research: Designing Future Reality Today: Physical-Reality Simulation Platform for Future Factories	47.076	3,100	-
NSF	EAR-1451022	Evolution of Microstructure and Creep Strength of Marble	47.050	40,978	-
NSF	EAR-1520825	Hazards SEES: Uncovering the hidden skeleton of environmental flows: advanced Langrangian methods for hazards prediction, mitigation and response	47.050	88,060	-
NSF	EAR-1551321	ABR: Experimental Studies of Hydrous Mantle Melting	47.050	137,159	-
NSF	EAR-1552202	Processes and Rates of Arc Crust Growth and Differentiation in the Southern Sierra Nevada Crustal Section	47.050	8,357	-
NSF	EAR-1615426	Collaborative Research: Integrating the geological and genomic records: time-calibrating Earth's dynamic biogeochemical history	47.050	232,837	-
NSF	EAR-1647504	INSPIRE: Search for Records of the Hadean Dynamo in Detrital Zircons	47.050	145,639	76,707
NSF	EAR-1659923	Predictive Models for Wave Damping by Flexible Aquatic Vegetation	47.050	105,381	-
NSF	EAR-1702588	Collaborative Research: Quantifying precipitation changes in the South American subtropics over the late Pleistocene	47.050	55,946	-
NSF	EAR-1722935	Collaborative Research: Relating bulk composition to seismic properties in crustal rocks	47.050	57,522	-
NSF	EAR-1753482	Melt Network Geometry in Stressed, Partially Molten Mantle Rocks: Implications for Seismic Anisotropy	47.050	78,514	-
NSF	EAR-1827715	Collaborative Research: Calibrating the end-Ediacaran extinction at a new boundary site with U-Pb Geochronology & Chemostratigraphy	47.050	84,623	-
NSF	EAR-1833478	Collaborative Research: Community Facility Support: Facilitating Access and Innovation through a Collaborative Organization for Rock Deformation (CORD)	47.050	136,635	-
NSF	EAR-1836304	Development of Multi-Channel Ultrasound Recording System for a High?Pressure, High?Temperature Rock Deformation Apparatus	47.050	153,414	-

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Federal Agency	Government Contract Number	Master Project Name	CFDA #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NSF	EAR-1843686	Community Facility Support for GNSS Data Analysis with GAMIT/GLOBK	47.050	40,932	-
NSF	EAR-1852946	Methane isotopologue fractionation during microbial methanogenesis and methonotrophy by pure and mixed laboratory cultures	47.050	18,860	-
NSF	EAR-1854564	Impact of vegetation geometry and distribution on bedload transport	47.050	88,022	-
NSF	EAR-1902179	Constraining the Nature and Formation Age of the Shyok Suture Zone in Ladakh, NE India	47.050	12,619	-
NSF	EAR-1903544	Collaborative Research: Regional hydrologic and vegetation changes over the last 150 kyr in the Searles and Death Valley basins	47.050	95,671	-
NSF	EAR-1905733	Collaborative Research: Development of a turnkey SQUID microscope platform for paleomagnetism and installation in a National Multi-User Facility	47.050	68,551	-
NSF	EAR-1923491	Collaborative Research: Hydrologic Disturbance in Tropical Peatlands: Linking Drainage, Soil Moisture, Flammability, and Carbon Fluxes	47.050	33,874	-
NSF	EAR-1925863	Collaborative Research: Do arc-continent collisions in the tropics set the Earth's climate state?	47.050	48,052	-
NSF	EAR-1948453	Laboratory Acquisition Protocols and Standards: A Standardized Digital Data System for Experimental Results	47.050	5,087	-
NSF	ECCS-1449291	SNM: Knowledge-based Continuous and Scalable Manufacture of Quantum Dots	47.041	-2,748	-
NSF	ECCS-1453218	CAREER: Glass-Based Fexible Integrated Photonic Devices	47.041	-49,641	-
NSF	ECCS-1509486	Collaborative Research: Understanding and Engineering Timing Jitter of Superconducting-Nanowire Single Photon Detectors	47.041	7,613	-
NSF	ECCS-1532591	NCS-FO: Algorithmically explicit neural representation of visual memorability	47.041	60,790	-
NSF	ECCS-1554171	CAREER: Computational toolbox for improved security of power systems	47.041	12,169	-
NSF	ECCS-1607865	Monolithic magneto-optical isolators for on-chip photonic integration	47.041	-20,205	-
NSF	ECCS-1609240	Collaborative Research: Advances in High-Frequency Magnetics for High-Efficiency, High-Density Power Electronic Systems	47.041	-5,539	-
NSF	ECCS-1610806	Collaborative Research: Electrochemically driven Mechanical Energy Harvesting	47.041	90,623	-
NSF	ECCS-1639921	E2CDA: Type II: Memory, Logic, and Logic in Memory Using Three Terminal Magnetic Tunnel Junctions	47.041	23,126	-
NSF	ECCS-1653100	CAREER: On-Chip Terahertz Electronic Frequency Combs	47.041	56,243	-

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NSF	ECCS-1653553	CAREER: Spin-Orbit Interaction based Spintronics in Superconductors	47.041	77,729	-
NSF	ECCS-1702716	Spectroscopy with Quantum Sensors at the Nanoscale	47.041	101,295	-
NSF	ECCS-1709212	Collaborative Research: Conformal and robust integrated infrared spectroscopic sensors	47.041	1,240	-
NSF	ECCS-1711027	CCSS: Small : Universal Feature Selection in Integrated Monitoring of Large Networks	47.041	43,984	-
NSF	ECCS-1740274	E2CDA: Type I: Collaborative Research: Interconnects Beyond Cu	47.041	61,099	-
NSF	ECCS-1743938	EAGER: Feedback optimization of dynamic nonlinear signal processing systems	47.041	-8,770	-
NSF	ECCS-1745547	Spatially Continuous Modeling of Power System Oscillations with Renewable Energy Penetration	47.041	24,536	-
NSF	ECCS-1808692	Model Reduction of High Dimensional Hidden Markov Models and Markov Decision Processes	47.041	16,769	-
NSF	ECCS-1808826	Magnetic Memory Devices Based on Antiferromagnet	47.RD	78,536	-
NSF	ECCS-1808828	Electrical switching of magnetic devices by voltage-controlled proton insertion for low-power, high-performance data storage and computing	47.041	125,426	-
NSF	ECCS-1809314	Collaborative Research: Stability, security and emergency control for reconfigurable networked microgrids	47.041	108,166	-
NSF	ECCS-1809917	CMOS THz Molecular Clock With Enhanced Stability And Energy Efficiency	47.041	156,041	-
NSF	ECCS-1824360	Tag-of-Everything: Secured Wireless Powering and Communication Using THz Spectrum for Ultra-Small, Package-Less ID Chips	47.041	231,008	-
NSF	ECCS-1929535	Learning for Dynamics and Control (L4DC)	47.041	19,760	-
NSF	ECCS-1933556	Collaborative Research: Quantum Communication with Loss-Protected Photonic Encoding	47.041	35,577	-
NSF	ECCS-1935075	LIDS Workshop on Information and Decision Sciences: From the Past to the Future	47.041	29,686	-
NSF	ECCS-1937994	NSF Workshop on Security in RF/Analog Microelectronics and Electromagnetics	47.041	61,571	-
NSF	EEC-1936981	Planning Grant: Engineering Research Center for Technologies and Design for Sustainable Offshore Aquaculture (SOA)	47.041	7,437	-
NSF	EFMA-1641064	EFRI ACQUIRE: Scalable Quantum Communications with Error-Corrected Semiconductor Qubits	47.041	288,182	104,330
NSF	EFMA-1830901	EFRI C3 SoRo: Soft, Strong, and Safe Configurable Robots for Diverse Manipulation Tasks	47.041	534,207	251,548
NSF	EFMA-1935291	EFRI C3 SoRo: Functional-Domain Soft Robots (FunDo SoRo) Precisely Controlled by Quantitative Dynamic Models and Data	47.041	451,583	12,714

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NSF	ICER-1854929	PREEVENTS Track 2: Collaborative Research: Predicting Hurricane Risk along the United States East Coast in a Changing Climate	47.050	91,979	-
NSF	IIP-1717362	PFI:BIC - Development, Deployment and Evaluation of an Intelligent Service System for Personalized Early Literacy Learning Using Mobile Devices	47.041	218,273	93,922
NSF	IIP-1735671	Type II: MIT Innovation Corps Site	47.041	16,321	-
NSF	IIP-1818795	I-Corps Teams: Improving the Energy Efficiency of Transport Refrigeration Units	47.041	9,228	-
NSF	IIP-1820773	I-Corps Teams: Machine Learning Algorithms and Tools for Analysis and Optimization of Infrastructure	47.041	-1,441	-
NSF	IIP-1821020	I-Corps Team: A Photonic Crystal Enabled Thermophotovoltaic Portable Power Generator	47.041	12,854	-
NSF	IIP-1832931	I-Corps New England Regional Innovation Node (NERIN)	47.041	1,210,723	55,674
NSF	IIP-1849518	I-Corps Teams: Mobile Platform for Collecting, Analyzing, and Managing In-Field Data	47.041	5,665	-
NSF	IIP-1927929	I-Corps Teams: Acoustic Monitoring of Remote Pumping Equipment	47.041	11,188	-
NSF	IIP-1928890	I-Corps Teams: Electric Reservoir Stimulation	47.041	14,282	3,333
NSF	IIP-1928909	I-Corps Teams: Robust Filtration Membranes For Harsh Environment Separations	47.041	4,046	-
NSF	IIP-1929013	I-Corps Teams: Synthetic Matrix Solutions for Neurodegenerative Disease Platforms	47.041	12,169	-
NSF	IIP-1931623	I-Corps Teams: Reducing Exercise-Related Injuries with Fabric-Based Technologiees	47.041	31,153	-
NSF	IIP-1946423	I-Corps Teams: Decentralized fertilizer production for improving soil quality and plant growth	47.041	49,839	-
NSF	IIP-1949121	I-Corps: Ultra-clear, transparent aerogel material developed to enable the next generation of energy efficient windows	47.041	21,104	-
NSF	IIP-1951872	I-Corps Teams: Novel, heat-stable binding proteins for diverse diagnostic applications	47.RD	42,193	-
NSF	IIP-2011473	I-Corps Teams: IoT Sensor Networks Detecting User Behavior in Architectural Space	47.RD	37,700	-
NSF	IIP-2016398	I-Corps Teams: Machine Learning (ML)-powered Data Analyzer for Radio Frequency Integrated Circuits (RFIC) Design	47.RD	34,735	-
NSF	IIS-1226883	NRI-Large: Collaborative Research: Soft Compliant Robotic Augmentation for Human-Robot Teams	47.070	75,153	-
NSF	IIS-1350160	CAREER: Human-Aware Autonomy for Team-Oriented Environments	47.070	119,992	-
NSF	IIS-1350879	CAREER: Gait Transition Principles in Quadruped Robots	47.070	-593	-

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NSF	IIS-1404494	SCH: EXP: Collaborative Research: THink - Inferring Cognitive State From Subtle Behaviors	47.070	104,332	66,404
NSF	IIS-1427050	NRI: Collaborative: Efficient Algorithms for Contact-Aware State Estimation	47.070	-7,341	-
NSF	IIS-1427547	NRI: Collaborative: Modeling and Verification of Language-based Interaction	47.070	157,967	15,671
NSF	IIS-1447476	BIGDATA: F: DKA: Collaborative Research: Structured Nearest Neighbor Search in High Dimensions	47.070	53,308	-
NSF	IIS-1447786	BIGDATA: IA: DKA: Collaborative Research: High-Thoughput Connectomics	47.070	7,195	-
NSF	IIS-1453141	CAREER: Advances in Monitoring Human Performance: Moving Wearable Technology from the Expert to Nonexpert User	47.070	157,127	-
NSF	IIS-1513443	III: Medium: Collaborative Research:DataHub - A Collaborative Dataset Management Platform for Data Science	47.070	9,549	-
NSF	IIS-1523767	NRI: Learning to Plan for New Robot Manipulation Tasks	47.070	-7,913	-
NSF	IIS-1524817	RI: Small: Advancing Visual Recognition with Feature Visualizations	47.070	39,583	-
NSF	IIS-1527181	RI: Small: Time Resolved Imaging: New Methods for Capture, Analysis and Applications	47.070	23,828	-
NSF	IIS-1546290	BIGDATA: Collaborative Research: F: Making Big Data Accessible on Personal Computers: Big Network Algorithms and Data Streams	47.070	73,940	-
NSF	IIS-1553284	CAREER: Scalable learning with combinatorial structure	47.070	126,132	-
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	47,742	-
NSF	IIS-1607486	US-German Research Proposal: Neurocomputation in the Visual Periphery: Experiments and Models	47.070	256,277	-
NSF	IIS-1617403	CHS : Small: Creating versatile vibrotactile displays	47.070	893	-
NSF	IIS-1637753	NRI: Collaborative Research: Accelerating Robotic Manipulation with Data-Enhanced Contact Mechanics	47.070	12,509	-
NSF	IIS-1637824	NRI: Collaborative Research: Towards Robots with Human Dexterity	47.070	91,940	-
NSF	IIS-1651190	EAGER: Linguistic Event Extraction and Integration (LEXI): A New Approach to Speech Analysis	47.070	25,575	-
NSF	IIS-1716413	CHS: Small: An Integrated Editing Environment for 3D Printing	47.070	119,781	-
NSF	IIS-1718258	III:Small:A New Perspective on Grouped Variable Selection via Modern Optimization	47.070	57,469	-
NSF	IIS-1723381	S&AS:INT: Integrated Reasoning, Planning and Acting for Household Robots	47.070	337,154	-

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Federal Agency	Government Contract Number	Master Project Name	CFDA #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NSF	IIS-1723943	S&AS: INT: COLLAB: Autonomy as a Service	47.070	3,343	-
NSF	IIS-1729931	Collaborative Research: Computational Photo-Scatterography: Unraveling Scattered Photons for Bio-imaging	47.070	67,888	-
NSF	IIS-1741137	BIGDATA: F: Testing high dimensional distributions without the curse of dimensionality	47.070	130,250	-
NSF	IIS-1741341	BIGDATA: F: Collaborative Research: Towards automating data analysis: interpretable, interactive, and scalable learning via discrete probability	47.070	214,859	-
NSF	IIS-1744809	Collaborative Research: The cognitive and neural mechanisms of computer programming in young children: storytelling or solving puzzles?	47.070	-1,026	-
NSF	IIS-1745125	CAREER: Exact Algorithms for Learning Latent Structure	47.070	256,212	-
NSF	IIS-1750286	CAREER: Robust, scalable, reliable machine learning	47.070	99,236	-
NSF	IIS-1761812	Spokes: MEDIUM: NORTHEAST: Collaborative: Data science foundry: A collaborative platform for computational social science	47.070	239,337	-
NSF	IIS-1763434	III: Medium: Massively Parallel Data Analytics on Heterogeneous Architectures	47.070	350,200	-
NSF	IIS-1815372	CHS: Small: Collaborative Research: Computational Acoustic Design for Digital Manufacturing	47.070	105,979	-
NSF	IIS-1815529	RI:Small:Computational analysis of eye movements in reading: reader characteristics, cognitive state, and natural language processing	47.070	143,440	-
NSF	IIS-1815585	CHS: Small: Collaborative Research: Computational Fine Art Reproduction	47.070	71,064	-
NSF	IIS-1822181	2nd Summer School on Cognitive Robotics	47.070	-299	-
NSF	IIS-1830282	NRI:INT:COLLAB: Collaborative Task Planning and Learning through Language Communication in a Human-Robot Team	47.070	266,978	-
NSF	IIS-1833154	Workshop for Women in Machine Learning	47.070	23,146	-
NSF	IIS-1838071	BIGDATA:F: Statistical and Computational Optimal Transport for Geometric Data Analysis	47.070	404,016	-
NSF	IIS-1844406	CAREER: Adaptive Physical User Interfaces	47.070	50,478	-
NSF	IIS-1846088	CAREER: Modern nonconvex optimization for machine learning: foundations of geometric and scalable techniques	47.070	144,117	-
NSF	IIS-1900933	III: Medium: Learning-based Synthesis of Data Processing Engines	47.070	116,491	-
NSF	IIS-1900991	III: Large: Collaborative Research: Analysis Engineering for Robust End-to-End Data Science	47.070	35,054	-
NSF	IIS-1917668	Supporting Teachers with Interaction Tools for Challenging Happenings (STITCH)	47.076	120,017	-

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Federal Agency	Government Contract Number	Master Project Name	CFDA #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NSF	IIS-1923089	Doctoral Mentoring Consortium at the Seventeenth International Conference on Autonomous Agents and Multiagent Systems	47.070	12,856	-
NSF	IIS-1926930	EAGER: AI-DCL: Collaborative Research: Understanding and Overcoming Biases in STEM Education Using Machine Learning	47.070	3,720	-
NSF	IIS-1929607	US-German Collaboration: Toward a quantitative understanding of navigational deficits in aging humans	47.070	-40	-
NSF	IIS-1935450	EAGER: Reimagining Teachers? Assessment Literacy Using Game-Based learning Analytics	47.070	70,500	-
NSF	IOS-1645061	IOS EDGE: Development of genetic tools for the dominant phototroph in the sea	47.074	173,912	-
NSF	IOS-1845663	CAREER: Dissecting Neural Mechanisms of Behavioral State Control in C. elegans	47.074	158,494	-
NSF	MCB-1615252	Collaborative research: Development of a platform enabling analysis of membrane protein interactions	47.074	4,324	-
NSF	MCB-1652390	CAREER: Integrating Chem. Biology Methods & RNA Virus Models to Elucidate How the Metazoan Proteostasis Ntwk Modulates Protein Evolutionary Landscapes	47.074	133,622	-
NSF	MCB-1715859	Breaking the Histone Code: Predicting Genome Organization with Chromatin States	47.074	229,351	-
NSF	MCB-1817708	Multiplexing Autonomous Metabolite Valves	47.074	138,280	-
NSF	MCB-1840257	RoL:FELS:RAISE: Principles of Modular Organization in Resource-Limited Biological Circuits	47.074	377,761	-
NSF	MCB-1844668	CAREER: Cracking the Cleavage Code of RNase Y and Its Associated Y-Complex in Firmicutes	47.074	221,939	-
NSF	MCB-1943141	CAREER: Towards open and community-responsive ecological editing	47.074	2,015	-
NSF	OAC-1636766	BD Spokes: SPOKE: NORTHEAST: Collaborative: A Licensing Model and Ecosystem for Data Sharing	47.070	535,656	10,841
NSF	OAC-1739772	Collaborative Research: SSE: Extending the physics reach of LHCb in Run 3 using machine learning in the real-time data ingestion and reduction system	47.070	98,063	-
NSF	OAC-1835443	Framework: Software: Next-Generation Cyberinfrastructure for Large-Scale Computer-Based Scientific Analysis and Discovery	47.070	194,770	-
NSF	OAC-1835618	Collaborative Research: Framework: Data: Toward Exascale Community Ocean Circulation Modeling	47.050	102,421	-
NSF	OAC-1839159	RAISE TAQS: Very Large Scale Integrated Electronics and Photonics Platform for Scalable Quantum Information Processing	47.070	249,001	-
NSF	OAC-1841617	Collaborative Research: Community Planning for Scalable Cyberinfrastructure to Support Multi-Messenger Astrophysics	47.070	16,390	-

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Federal Agency	Government Contract Number	Master Project Name	CFDA #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NSF	OAC-1931391	Frameworks: Collaborative Research: Extensible and community-driven thermodynamics, transport, and chemical kinetics modeling with Cantera: expanding to diverse scientific domains	47.070	30,542	-
NSF	OAC-1931469	Collaborative Research: Frameworks: Machine learning and FPGA computing for real-time applications in big-data physics experiments	47.070	23,821	-
NSF	OAC-1934700	Collaborative Research: Advancing Science with Accelerated Machine Learning	47.070	106,702	-
NSF	OAC-1940231	Collaborative Research: Autonomous Computing Materials	47.070	87,218	-
NSF	OAC-1947440	BD Spokes: SPOKE: NORTHEAST: Collaborative: A Licensing Model and Ecosystem for Data Sharing	47.070	126,999	-
NSF	OCE-1338814	FESD Type 1:The impact of the ozone hole on the climate of the Southern Hemisphere	47.050	275,699	126,942
NSF	OCE-1459702	Theoretical studies of eddy mixing	47.050	39,044	-
NSF	OCE-1502985	Collaborative Research: Insights into North African climate variability over the last 1.1 million years from dust fluxes and leaf wax isotopes	47.050	-22	-
NSF	OCE-1536515	Collaborative Research: An Ocean Tale of Two Climates: Modern and Last Glacial Maximum	47.050	57,875	-
NSF	OCE-1558702	Collaborative Research: Predicting the Spatiotemporal Distribution of Metabolic Function in the Global Ocean	47.050	52,524	-
NSF	OCE-1658451	Microbial interactions on particulate organic matter: from community structure to function.	47.050	47,418	-
NSF	OCE-1736109	Collaborative Research: Deep Circulation over the Flanks of a Mid-Ocean Ridge	47.050	20,818	-
NSF	OCE-1736996	Collaborative Research: US GEOTRACES PMT: Pb and Cr isotopes	47.050	-19,230	-
NSF	OCE-1756324	Collaborative Research: Bottom Boundary Layer Turbulent and Abyssal Recipes	47.050	127,551	-
NSF	OCE-1923312	Improving Accuracy and Precision of Marine Inorganic Carbon Measurements	47.050	90,353	-
NSF	OCE-1924050	Cr Isotope Oceanography of the Eastern Tropical North Pacific Ocean	47.050	190,425	-
NSF	OIA-1231216	A Center for Brains, Minds, and Machines: The Science and the Technology of Intelligence	47.070	12,534	-
NSF	OMA-1936263	QII-TAQS Characterizing and Utilizing 2D Van der Wals Materials with Superconducting Quibits	47.049	241,683	117,434
NSF	OPP-1837646	NNA: Collaborative Research: Navigating the New Arctic--Persistent, Long-Range, Autonomous Under-Ice Observations of Arctic Change	47.050	38,559	-

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Federal Agency	Government Contract Number	Master Project Name	CFDA #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NSF	PHY-1433156	Collaborative Research: Construction of the Upstream Tracker for the LHCb Upgrade	47.049	2,281	-
NSF	PHY-1454673	CAREER: SELECTIVE TRANSPORT IN BIOLOGICAL HYDROGELS - FROM DESIGN PRINCIPLES TO MECHANISMS	47.049	152,249	-
NSF	PHY-1504942	Physics of Chromosomes	47.049	6	-
NSF	PHY-1505855	The EPP-Supported Neutrino Program at MIT	47.049	-4,228	-
NSF	PHY-1505858	The PA-Supported Neutrino Program at MIT	47.049	-15,755	-
NSF	PHY-1506019	Strongly Interacting Fermi Gases of Ultracold Atoms	47.049	146,537	-
NSF	PHY-1506369	A Program in Ultralow-Temperature Atomic Physics	47.049	499,709	-
NSF	PHY-1541160	INSPIRE: Testing Bell's Inequality with Astrophysical Observations	47.049	74,649	74,649
NSF	PHY-1554875	Career: Next-Generation Liquid Scintillator Detectors: Picosecond Timing and Quantum-Dot-Doped Scintillator	47.049	76,005	11,505
NSF	PHY-1607225	Searching for physics beyond the Standard Model at the LHCb Experiment	47.049	13	-
NSF	PHY-1620045	Research in Theoretical Elementary Particle Physics	47.049	5,702	-
NSF	PHY-1626069	MRI: Development of the IsoDAR Front-End	47.049	190,419	-
NSF	PHY-1654168	CAREER: Magnetogenesis Revisited: The First Self-consistent Plasma Dynamo	47.049	90,063	-
NSF	PHY-1705940	Measuring Attometer-Scale Thermal Fluctuations in Optical Coatings for Applications in Gravitational Wave Detection	47.049	68,968	-
NSF	PHY-1707549	Studies of strong-gravity binaries and their gravitational waves	47.049	115,093	-
NSF	PHY-1707840	Quantum Optomechanics on Multiple Mass Scales	47.049	208,493	-
NSF	PHY-1707999	Inferring the Physics of mRNA Trafficking in Neuronal Systems	47.049	61,516	-
NSF	PHY-1720311	Dynamical decoupling, error mitigation and noise correlations in multi-qubit systems	47.049	142,053	-
NSF	PHY-1734011	Center for Ultracold Atoms	47.049	3,257,363	2,440,669
NSF	PHY-1743900	RAISE: A phase separation model for transcriptional control in mammals	47.049	360,773	199,325
NSF	PHY-1801996	The EPP-Supported Neutrino Program at MIT	47.049	210,431	-
NSF	PHY-1806251	New Experimental Techniques for Neutrino Physics	47.049	181,636	-
NSF	PHY-1806440	Rare Event Searches at MIT	47.049	237,104	-
NSF	PHY-1806765	Many-body entanglement for precision measurement	47.049	112,930	-
NSF	PHY-1836814	Collaborative Proposal: The Next Generation of Gravitational Wave Detectors	47.049	267,461	-
NSF	PHY-1841699	CAREER: Quark and Gluon Structure of Nucleons and Nuclei	47.049	152,731	-
NSF	PHY-1848247	CAREER: Symmetry and Geometry in Biological Active Matter	47.049	145,849	-
NSF	PHY-1904160	LHCb operations and computing	47.049	390,283	-

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Federal Agency	Government Contract Number	Master Project Name	CFDA #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NSF	PHY-1904160-001	LHCb operations and computing	47.049	148,393	65,544
NSF	PHY-1912764	The PA-Supported Neutrino Program at MIT	47.049	303,988	-
NSF	PHY-1912836	SEARCHING FOR PHYSICS BEYOND THE STANDARD Model AT THE LHCB EXPERIMENT	47.049	143,438	-
NSF	PHY-1914418 000	WoU-MMA: Collaborative Research: A Next-Generation SuperNova Early Warning System for Multimessenger Astronomy	47.049	4,472	-
NSF	PHY-1915218	Quantum simulation of out-of-equilibrium spin models	47.049	61,880	-
NSF	PHY-2026995	RAPID Immunogenicity of SARS-CoV2 to Human T Cells	47.049	27,213	-
NSF	PHY-2033046	COVID-19: RAPID: Identifying the role of mucus in COVID-19 pathogenesis	47.049	810	-
NSF	PLR-1503966	Collaborative Research: The combined influence of sea ice and snow cover on Northern Hemisphere atmospheric climate variability	47.050	32,396	-
NSF	PLR-1543366	Dynamics of the Antarctic Seasonal Ice Zone	47.050	245,535	-
NSF	PLR-1603557	Collaborative Research: Quantifying the Residual Circulation of the Arctic Ocean	47.050	28,051	-
NSF	PLR-1607968	Collaborative Research: Speleothem records of permafrost thaw and paleoclimate in the North American Arctic	47.050	904	-
NSF	SES-1528487	Collaborative Research: A New Design for Identifying Persuasion Effects and Selection in Media Exposure Experiments via Patient Preference Trials	47.075	53,725	-
NSF	SES-1555071	CAREER: Dynamic Games and Institutions	47.075	49,400	-
NSF	SES-1558205	Choice, Learning and Equillibrium	47.075	117,981	-
NSF	SES-1725235	Policy as a Private Good: Firm-Lobbyist-Politician Networks in the Legislative Process	47.075	46,459	-
NSF	SES-1733899	From School to Work: Experimental Interventions Following A Longitudinal Study of Gender Stratification in Science and Engineering	47.075	20,578	-
NSF	SES-1757198	Information, Attention, and Coordination in Macroeconomics	47.075	113,599	-
NSF	SES-1757199	Inferences in Factor Pricing Models with Many Assets	47.075	398	-
NSF	SES-1757307	Multidisciplinary Conference on Election Auditing	47.075	38,019	-
NSF	SES-1848857	Risk Markets Imbalances and Macroeconomics	47.075	23,181	-
NSF	SES-1849526	Doctoral Dissertation: From Documents to Data: The Politics of National Biometric Identification Systems in the 21st Century	47.075	13,030	-
NSF	SES-1919437	Collaborative Research: The Tax Administration Production Function: Evidence from Indonesia	47.075	11,933	-
NSF	SES-1947087	Standard Grant: Genetown: Tracing the History of the Biotechnology Industry in the Greater Boston Area, 1973-2000	47.075	20,610	-

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Federal Agency	Government Contract Number	Master Project Name	CFDA #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NSF	SES-2001208	Advancing Methods for Analyzing Coordination: New Developments in Global Game Theory	47.RD	14,014	-
NSF	SMA-1757344	Mapping the Inventor Gender Gap: Analyzing Regional & Organization Variation in the Inclusivity of the Innovation Economy	47.075	81,252	-
		Total for National Science Foundation		**84,413,200**	**8,854,059**
		TOTAL for National Science Foundation		**84,413,200**	**8,854,059**
		TOTAL Federal Research Support - On Campus		**375,074,365**	**62,723,346**

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Massachusetts Institue of Technology
Schedule of Expenditures of Federal Awards - Lincoln Laboratory
By Sponsor & Contract - FY 2020

Sponsor	Contract Number	Program Name	CFDA #	Total $ Amount Expended	$ Amount Passed to Subrecipients
DEPARTMENT OF DEFENSE					
AIR FORCE	FA8721-05-C-0002		12.RD	$ 1,014,180	$ 403,994
	FA8702-15-D-0001		12.RD	375,865,930	31,956,433
ARMY	FA8721-05-C-0002		12.RD	38,870	38,870
	FA8702-15-D-0001		12.RD	60,243,679	2,591,903
CLASSIFIED	FA8721-05-C-0002		12.RD	10,513	867
	FA8702-15-D-0001		12.RD	188,974,702	13,135,747
DEFENSE ADVANCED RESEARCH PROJECT AGENCY	FA8702-15-D-0001		12.RD	42,003,261	3,883,580
MISSILE DEFENSE AGENCY	FA8721-05-C-0002		12.RD	2,429	-
	FA8702-15-D-0001		12.RD	104,244,873	5,198,918
NATIONAL SECURITY AGENCY	FA8702-15-D-0001		12.RD	8,636,769	336,964
NAVY	FA8721-05-C-0002		12.RD	6,035	-
	FA8702-15-D-0001		12.RD	49,864,693	2,402,033
OTHER DEPARTMENT OF DEFENSE	FA8721-05-C-0002		12.RD	310,013	276,954
	FA8702-15-D-0001		12.RD	150,914,585	4,343,289
TOTAL DEPARTMENT OF DEFENSE				**$ 982,130,532**	**$ 64,569,552**
NON DEPARTMENT OF DEFENSE					
DEPARTMENT OF HOMELAND SECURITY	FA8721-05-C-0002		97.RD	(606)	-
	FA8702-15-D-0001		97.RD	28,277,961	911,636
FEDERAL AVIATION AUTHORITY	FA8721-05-C-0002		20.RD	509	-
	FA8702-15-D-0001		20.RD	26,912,763	397,864
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	FA8702-15-D-0001		43.RD	41,730,684	8,693,471
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION	FA8702-15-D-0001		11.RD	6,228,907	72,054
OTHER NON DOD	FA8702-15-D-0001		99.RD	11,864,425	290,436
TOTAL NON-DEPARTMENT OF DEFENSE				**$ 115,014,643**	**$ 10,365,461**
TOTAL DIRECT AWARDS				**$ 1,097,145,175**	**$ 74,935,013**

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Schedule of Expenditures of Federal Awards - Lincoln Laboratory
By Sponsor & Contract - FY 2020 Continued

Prime Sponsor and Sponsor	Passthrough Contract Number	Program Name	CFDA #	Total	$ Amount Passed to Subrecipients
DEPARTMENT OF COMMERCE					
NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY					
New Jersey Office of Homeland Security and Preparedness	70NANB17H169	Representative Public Safety Video Testbed	11.RD	$ 259,629	$ 19,817
		Total Department of Commerce		**$ 259,629**	**$ 19,817**
DEPARTMENT OF DEFENSE					
AIR FORCE					
MIT Campus	FA8802-14-C-0001	Design of Reconfigurable Constellation A	12.RD	$ 20,423	$ -
AIM Photonics	FA8650-15-2-5220	Electronic-Photonic Design Automation	12.RD	7,074	-
Arete Associates	FA9451-17-P-0531	Alternative Methods for Creating Sodium Guidestar	12.RD	35,764	-
MIT Campus	FA8750-19-2-1000	AI for Personalized Foreign Language Education	12.RD	58,047	-
MIT Campus	FA8750-19-2-1000	Explainable Machine Learning for Decision	12.RD	89,185	-
MIT Campus	FA8750-19-2-1000	AI-Enhanced Spectral Awareness	12.RD	49,212	-
MIT Campus	FA8750-19-2-1000	Objective Performance Prediction & Optimization	12.RD	99,695	-
MIT Campus	FA8750-19-2-1000	AI-Enhanced Spectral Awareness	12.RD	36,161	-
Draper Laboratory	FA8075-17-F-1310	Draper RF System Characterization	12.RD	13,557	
ARMY					
Agiltron, Inc.	W911QY-16-P-0068	Ag Nanowire Grid on Amorphous Silicon	12.RD	57,904	-
Advanced Functional Fabrics of America	W15QKN-16-3-0001	Controlled Reflectivity Fabrics	12.RD	852,923	2,133
Si2 Technologies	W911QX-18-P-0178	Additive Manufacturing for RF Materials	12.RD	12,588	-
MIT Campus	W911NF-13-D-0001	Diamond Electronics	12.RD	137,323	-
MIT Campus	W911NF-19-1-0481	Development of Methods for Cont.	12.RD	12,734	-
DEFENSE MICROELECTRONICS ACTIVITY					
Optowares Inc.	HQ0727-17-P-0030	Measurement for Thin Films on Sapphire	12.RD	95,345	-
MISSILE DEFENSE AGENCY					
Copius Imaging LLC	HQ0147-19-C-7066	Novel Approaches for Eliminating Bias Drift in IR FPAs	12.RD	30,703	-
Triton Systems, Inc.	HQ0147-17-C-7431	Nanofuse	12.RD	122,000	-
NAVY					
Ohio State University	N00014-17-1-2440	Low Excess-Noise Avalanche Photodetector	12.RD	44,586	-
MIT Campus	N00014-20-1-2533	Secure and Resiliant Soft Real-Time	12.RD	38,923	-
Vescent Photonics LLC	N68335-19-C-0642	Diamond Deployed Devices	12.RD	79,621	-
		Total Department of Defense		**$ 1,893,768**	**$ 2,133**
DEPARTMENT OF ENERGY					
Triton Systems, Inc.	DE-SC0017884	Photonic Fabrics for Optical Tagging	81.RD	$ 152,167	$ -
University of Rochester	DE-NA0001944	High Power Optical Absorption Measurements	81.RD	2,184	-
Lawrence Berkeley National Laboratory	DE-AC02-05CH11231	Advanced Quantum Testbed	81.RD	1,307,852	-
Telluric Labs LLC	DE-SC0019581	Rad-Hard Terabit Data Links for Particle Physics	81.RD	3,927	-
		Total Department of Energy		**$ 1,466,130**	**$ -**

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Schedule of Expenditures of Federal Awards - Lincoln Laboratory
By Sponsor & Contract - FY 2020 Continued

Prime Sponsor and Sponsor	Passthrough Contract Number	Program Name	CFDA #	Total	$ Amount Passed to Subrecipients
DEPARTMENT OF INTERIOR					
MIT Campus	D18AP00070	RECONFig	15.RD	$ 46,244	$ -
		Total Department of Interior		**$ 46,244**	**$ -**
DEPARTMENT OF TRANSPORTATION					
MIT Campus	13-C-AJFE-MIT-047	Ascent Project 46	20.RD	$ 18,234	-
		Total Department of Transportation		**$ 18,234**	**$ -**
FEDERAL BUREAU OF INVESTIGATION					
Federal Bureau of Investigation Science and Technology Acquisition Unit	15F06718P0006714	WMD Threat Assessment	16.RD	$ 82,309	$ -
		Total Federal Bureau of Investigation		**$ 82,309**	$ -
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION					
Jet Propulsion Laboratory	NNN12AA01C	Psyche Deep-Space Optical Communications	43.RD	$ 3,235,778	$ -
Jet Propulsion Laboratory	NNN12AA01C	Europa Lander Ladar Design Study	43.RD	3,910,283	-
Jet Propulsion Laboratory	NNN12AA01C	Uplink Laser Transmitter Study	43.RD	7,035	-
NASA	NAS2-97001	Stratospheric Observatory for Infrared Astronomy	43.RD	25,401	-
MIT Campus	NNX17AE47G	High Resolution X-ray Telescope Optics	43.RD	42,002	-
MIT Campus	80NSSC18K1677	Auroral Emissions Radio Explorer	43.RD	648,264	-
MIT Campus	80NSSC19K0617	LL Vista	43.RD	250,891	-
MIT Campus	80NSSC19K0335	Arcus	43.RD	87,276	-
		Total National Aeronautics and Space Administration		**$ 8,206,930**	**$ -**
NATIONAL INSTITUTE OF HEALTH					
MIT Campus	1-R01-EB025256-01A1	Programmable Multi-Step Genetic Difference	93.859	224,300	-
MIT Campus	1-R01-MH111916-01A1	Development of an Integrated Multimodal	93.859	189,140	-
MIT Campus	2-R01-DA029639-05	Optical Control of Neural Circuits	93.859	85,916	-
Massachusetts General Hospital	1-R01-EB025145-01	Gated Diffuse Correlation Spectroscopy	93.859	76,341	-
MIT Campus	1-U01-MH117072-01	Integrated Cell Type Brain Mapping	93.859	203,824	-
MIT Campus	230321	Clin Res for Imprv Prev - Vocal Hyperfunc Yr3	93.173	99,036	-
Massachusetts General Hospital	1-R01-DK119860-01	Diagnostic Assistant for Fatty Liver Disease	93.859	114,522	-
Massachusetts General Hospital	1-U01-EB028660-01	Diffuse Correlation Spectroscopy for Functional Imaging of the Human Brain	93.859	257,394	-
		Total National Institute of Health		**$ 1,250,473**	**$ -**
NATIONAL SCIENCE FOUNDATION					
University of Southern California	IIS-1514544	Understanding Individual Speech Variability	47.RD	$ 13,262	$ -
MIT Campus	AST-1836002	LLAMAS Optical System Integration	47.070	25,351	-
MIT Campus	CCF-1521759	Evolvable Living Computing	47.070	210,295	-
National Radio Astronomy Observatory	AST-1519126	3D Printing of Ultra-Low Loss Materials for Radio Astronomy	47.070	6,021	-
		Total National Science Foundation		**$ 254,929**	**$ -**
Total Passthrough Awards				**$ 13,478,646**	**$ 21,950**
Total Federal Awards				**$ 1,110,623,821**	**$ 74,956,963**

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DEPARTMENT OF DEFENSE						
Lincoln Laboratory						
DEPARTMENT OF DEFENSE	6941919	16-C-19-0445 PO#7000465881	Climate Modeling and Climate Impact Assessment	12.RD	74,049	-
DEPARTMENT OF DEFENSE	6940077	7000438136	Breaking the Diffraction Limit in Micro-Raman Thermography	12.RD	65,054	-
DEPARTMENT OF DEFENSE	6940386	7000446675	Open Source Autonomy Software for the Ionobot Open Ocean Autonomous Platform	12.RD	-2,474	-
DEPARTMENT OF DEFENSE	6941920	7000469159	A Safe and High-Energy-Density Electrochemical Power System Using Liquid Fluorinated Reactants	12.RD	72,322	-
DEPARTMENT OF DEFENSE	6939912	PO #7000436744	Optimized 3D printed prosthetic foot topologies for improved mobility and customization	12.RD	11,123	-
DEPARTMENT OF DEFENSE	6941418	PO #7000462800	Multi-Agent Tactical Autonomy Simulation Cluster	12.RD	107,859	-
DEPARTMENT OF DEFENSE	6928933	PO# 7000243692	Innovation in Unmanned Air Vehicle Development	12.RD	-337	-
DEPARTMENT OF DEFENSE	6941529	PO# 7000290592	Coherent Spin Qubits for Quantum-Enhanced Optimization	12.RD	616,831	-
DEPARTMENT OF DEFENSE	6931611	PO# 7000306158	Advanced GaN Transistor Technology (AGT2)	12.RD	89,689	-
DEPARTMENT OF DEFENSE	6932764	PO# 7000326660	Platform Device for Non-Invasive Gastrointestinal Disease Monitoring	12.RD	-2,682	-
DEPARTMENT OF DEFENSE	6933645	PO# 7000344422	Development of Aluminum Fueled Electric Vehicle and Submersible Power Systems (Lilypads II)	12.RD	-601	-
DEPARTMENT OF DEFENSE	6935139	PO# 7000367982	Cyber Adversarial SCenario modeling and Automated Decision Engine (CASCADE)	12.RD	24,051	-
DEPARTMENT OF DEFENSE	6935279	PO# 7000369000	Microplasmas for Additive Materials Deposition	12.RD	101,240	-
DEPARTMENT OF DEFENSE	6935235	PO# 7000370657	Phase Change Metamaterials	12.RD	188,044	-
DEPARTMENT OF DEFENSE	6935316	PO# 7000372082	Low SWaP Reaction Sphere for Precision CubeSat Attitude Control	12.RD	26,876	-
DEPARTMENT OF DEFENSE	6937917	PO# 7000374874	Graduate Student Research in FY17 in support of Verification and Validation of Autonomous Systems	12.RD	-50,663	-
DEPARTMENT OF DEFENSE	6935644	PO# 7000376241	Chip-Scale THz Spectrometer: Miniaturized Molecular Clock and Gas Sensor	12.RD	-74	-
DEPARTMENT OF DEFENSE	6935965	PO# 7000381569	Demonstration of Logical Qubits using 3D Integration	12.RD	14,140	-
DEPARTMENT OF DEFENSE	6936237	PO# 7000385831	Development of A Built-In, Metal-Air, Nano Battery (Lincoln Laboratory Program # TIO2-0126)	12.RD	9,623	-
DEPARTMENT OF DEFENSE	6936301	PO# 7000385936	Design and Characterization of JTWPAs	12.RD	51,147	-

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DEPARTMENT OF DEFENSE	6936468	PO# 7000386377	Time-Resolved Observations of Precipitation structure and storm Intensity with a Constellation of Smallsats (TROPICS)	12.RD	39,014	-
DEPARTMENT OF DEFENSE	6936395	PO# 7000387954	Integrated QC Collaboration	12.RD	-177	-
DEPARTMENT OF DEFENSE	6936545	PO# 7000389700	WaferSat	12.RD	121,836	-
DEPARTMENT OF DEFENSE	6936796	PO# 7000391952	Advanced Methods for Sensing, Learning, and Communication	12.RD	30,968	-
DEPARTMENT OF DEFENSE	6936795	PO# 7000393666	NEXRAD Algorithm Analysis	12.RD	22,057	-
DEPARTMENT OF DEFENSE	6937231	PO# 7000398589 / LETTER NO. 16-C-17-0691	Alternatives for FEMA Disaster-Related Housing Assistance	12.RD	726,382	-
DEPARTMENT OF DEFENSE	6941138	PO# 7000399771	MIT Haystack Observatory Engineering Support for The Lincoln Space Surveillance Complex (LSSC)	12.RD	2,735,903	-
DEPARTMENT OF DEFENSE	6937457	PO# 7000401832	Aluminum Powered Electric Vehicle	12.RD	-254	-
DEPARTMENT OF DEFENSE	6937660	PO# 7000403338	Physics-In-The-Loop Photorealistic Simulation System For High-Throughput Computing Research	12.RD	149,140	-
DEPARTMENT OF DEFENSE	6937581	PO# 7000403560	Secure Processing Engine for Self-configuring Autonomous Systems	12.RD	444	-
DEPARTMENT OF DEFENSE	6939102	PO# 7000404297	Autonomous Underway Biofouling Removal and Autonomous Open Water Sensor Platform	12.RD	20,913	-
DEPARTMENT OF DEFENSE	6938341	PO# 7000407322	Evaluation of Stress Fracture Phenomenology Using Ultrasound	12.RD	-9,369	-
DEPARTMENT OF DEFENSE	6937851	PO# 7000408525	Multiphysics Approach to Designing Tunneling Based Post-CMOS Ultra-Low Power Logic Devices	12.RD	-24,653	-
DEPARTMENT OF DEFENSE	6937963	PO# 7000409620	Unhackable Mission Computer	12.RD	399,230	-
DEPARTMENT OF DEFENSE	6938413	PO# 7000416344	Thin Film Microbatteries	12.RD	81,751	-
DEPARTMENT OF DEFENSE	6938424	PO# 7000416579	BeaverCube	12.RD	-1,540	-
DEPARTMENT OF DEFENSE	6938561	PO# 7000419429	Lincoln Labs ACC Project on Amorphous Germanium Resonators	12.RD	-33	-
DEPARTMENT OF DEFENSE	6938640	PO# 7000420407	Electrically -Driven Conversion of Carbon Dioxide to Distillate Fuels	12.RD	-37,576	-
DEPARTMENT OF DEFENSE	6938802	PO# 7000422783	Cyber Domain Tasks: Study of Methods for Development of a Taxonomical Cyber Operations Task List using Ontology-Based Text Extraction and Interpretation	12.RD	77,604	-
DEPARTMENT OF DEFENSE	6938865	PO# 7000423531	Unsupervised Audio-Visual Learning in the Wild	12.RD	-147	-
DEPARTMENT OF DEFENSE	6938895	PO# 7000423938	Integrated Textile Systems for Real-Time Physiological Status Monitoring and Toxic Industrial Chemical Sensing	12.RD	-10,631	-
DEPARTMENT OF DEFENSE	6939172	PO# 7000424794	Support of the Westford 9M Remote Antenna - Group 64	12.RD	43,079	-

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DEPARTMENT OF DEFENSE	6938988	PO# 7000426059	On-chip dFT-Raman Spectrometers for Chemical and Biological Detection	12.RD	-44	-
DEPARTMENT OF DEFENSE	6939056	PO# 7000427377	ACC 721: Knowledge Transfer between Multiple Tasks and Real-Time Learning for Time-Varying Models	12.RD	15,046	-
DEPARTMENT OF DEFENSE	6939164	PO# 7000427652	Secure Multi-Party Computation	12.RD	10,308	-
DEPARTMENT OF DEFENSE	6940185	PO# 7000441640	3D Printed, No-Moving-Parts, Miniature High-Vacuum Pump	12.RD	98,262	-
DEPARTMENT OF DEFENSE	6940197	PO# 7000441730	Miniature Cryocooler as a Platform for Quantum Sensors	12.RD	142,610	-
DEPARTMENT OF DEFENSE	6940414	PO# 7000442717	Quantum Memory Technology Development for Quantum Network Testbed Demonstration	12.RD	30,696	-
DEPARTMENT OF DEFENSE	6940223	PO# 7000443135	Task Execution with Semantic Segmentation	12.RD	116,573	-
DEPARTMENT OF DEFENSE	6940387	PO# 7000443447	Resilient Perception in Degraded Environments	12.RD	109,928	-
DEPARTMENT OF DEFENSE	6940262	PO# 7000443563	Low-defect III-N Devices by Remote Epitaxial GaN	12.RD	200,488	-
DEPARTMENT OF DEFENSE	6940258	PO# 7000443819	Develop tools for performance characterization and optimization of AI software	12.RD	55,312	-
DEPARTMENT OF DEFENSE	6940307	PO# 7000444597	Wide Area Ocean Floor Mapping	12.RD	86,630	-
DEPARTMENT OF DEFENSE	6940303	PO# 7000445219	Self-Heating Materials	12.RD	54,899	-
DEPARTMENT OF DEFENSE	6940354	PO# 7000445262	Valley Dynamics of Heterogeneous Bilayer Excitons	12.RD	63,455	-
DEPARTMENT OF DEFENSE	6942465	PO# 7000445983	Ionobot: Autonomous Ocean Platform	12.RD	104,757	-
DEPARTMENT OF DEFENSE	6940398	PO# 7000446862	Computational Assessment of Post-CMOS Devices	12.RD	23,459	-
DEPARTMENT OF DEFENSE	6940718	PO# 7000451072	Design and mask layout of photonic integrated circuits	12.RD	-10	-
DEPARTMENT OF DEFENSE	6940757	PO# 7000452592	Dynamic Data Driven Long-Range Weather Forecasting	12.RD	35,161	-
DEPARTMENT OF DEFENSE	6940956	PO# 7000455589	Wallace Observatory Support in Mustang Program	12.RD	27,126	-
DEPARTMENT OF DEFENSE	6941150	PO# 7000458166	Non-Reciprocal Freqency Conversion for IBFD	12.RD	65,607	-
DEPARTMENT OF DEFENSE	6941416	PO# 7000462136	Dry-X Adhesive Tape for Instant Surgical-Strength Tissue Sealing	12.RD	27,341	-
DEPARTMENT OF DEFENSE	6941626	PO# 7000465398	Design and mask layout of photonic integrated circuits	12.RD	6,628	-
DEPARTMENT OF DEFENSE	6941655	PO# 7000465630	ACC 746: Modular Quantum Memory with Photonic Interface	12.RD	48,517	-
DEPARTMENT OF DEFENSE	6942049	PO# 7000466958	AFRL Machine Learning Course	12.RD	175,683	-
DEPARTMENT OF DEFENSE	6941809	PO# 7000467723	ISN-LL Fiber Collaboration	12.RD	79,719	-
DEPARTMENT OF DEFENSE	6941983	PO# 7000469591	High Thermal Conductivity Polymers for Lightweight Thermal Management	12.RD	58,793	-
DEPARTMENT OF DEFENSE	6942305	PO# 7000470769	Technologies for Reliable Assured Autonomy in Challenging Environments (TRAACE)	12.RD	131,519	-
DEPARTMENT OF DEFENSE	6942147	PO# 7000471328	Superconducting Sensors for Neutrino Detection	12.RD	50,886	-

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DEPARTMENT OF DEFENSE	6942171	PO# 7000471801	Weakly Supervised Multimodal Learning for Battlefield Medical Diagnosis	12.RD	106,499	-
DEPARTMENT OF DEFENSE	6942397	PO# 7000474480	Design of kirigami airfoils with tunable drag to lift ratio	12.RD	32,714	-
DEPARTMENT OF DEFENSE	6942549	PO# 7000476809	Climate Risks for Key Crops Over Bangladesh	12.RD	68,015	-
DEPARTMENT OF DEFENSE	6942724	PO# 7000478792	USAID Humanitarian Supply Chains	12.RD	38,118	-
DEPARTMENT OF DEFENSE	6943010	PO# 7000482739	Super-DICE Superconducting Discrete Integrated Electronics	12.RD	8,033	-
DEPARTMENT OF DEFENSE	6940196	PO#7000441601	Enhanced Thermoelectric Waste Heat Recovery with Semiconductor Intercalation Compounds	12.RD	71,581	-
DEPARTMENT OF DEFENSE	6940203	PO#7000442589	Natural Pathogen Phenomenology	12.RD	129,828	-
DEPARTMENT OF DEFENSE	6939822	PO#7000442873	LL/MIT Research Collaboration on Metal Matrix Composites by SLM	12.RD	0	-
DEPARTMENT OF DEFENSE	6940512	PO#7000447700	Research and Development with Open Source Probabilistic Programming Languages	12.RD	202,473	-
DEPARTMENT OF DEFENSE	6941106	PO#7000456741	Engineered cellular sensors utilizing GPCRa and fast BRET readout	12.RD	79,994	-
DEPARTMENT OF DEFENSE	6941098	PO#7000457149	Robust high-extinction integrated modulators	12.RD	92,936	-
DEPARTMENT OF DEFENSE	6942350	PO#7000473193	Color Changing Fabrics	12.RD	18,220	-
DEPARTMENT OF DEFENSE	6942809	PO#7000480340	Defeating Key Disclosure with Quantum Low Probability of Intercept	12.RD	32,799	-
DEPARTMENT OF DEFENSE	6940010	PO# 7000436941	Human-Exoskeleton Teaming	12.RD	104,376	-
DEPARTMENT OF DEFENSE	6940202	PO#7000442474	Neural Control of Exoskeletons	12.RD	141,678	-
			Total for Lincoln Laboratory		**8,705,770**	**-**
Universal Technology Corporation						
DEPARTMENT OF DEFENSE	6936095	17-S8401-05-C1	Adaptive Flight Control for Hypersonic Vehicles with Integrated Loops Using High Fidelity Models	12.RD	109,876	-
			Total for Universal Technology Corporation		**109,876**	**-**
University of Texas at Arlington						
DEPARTMENT OF DEFENSE	6941202	2016GC524	Next Generation Advances in Ionosphere Thermosphere Coupling at Multiple Scales for Environmental Specification and Prediction	12.800	75,758	61,284
DEPARTMENT OF DEFENSE	6940726	2016GC5246	Next Generation Advances in Ionosphere Thermosphere Coupling at Multiple Scales for Environmental Specification and Prediction	12.800	123,784	-
			Total for University of Texas at Arlington		**199,541**	**61,284**

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University of Michigan						
DEPARTMENT OF DEFENSE	6936329	3004427924	Multi-Fidelity Modeling of Rocket Combustor Dynamics	12.800	1,081	-
DEPARTMENT OF DEFENSE	6933569	3003660082	AN AUTOMATED MEASUREMENT SYSTEM FOR WARFIGHTER PERFORMANCE QUANTIFICATION IN NATURALISTIC SETTINGS	12.RD	42,282	-
DEPARTMENT OF DEFENSE	6940978	PO3005498246/SUBK00010160	Near-Field Radiative Heat Transfer and Energy Conversion in Nanogaps of Nano- and Meta-Structured Materials	12.431	148,799	-
DEPARTMENT OF DEFENSE	6938346	3004811123	Applications Driving Architectures (ADA) Center	12.RD	758,917	-
DEPARTMENT OF DEFENSE	6939785	3005210117	Applications Driving Architectures (ADA) Center	12.RD	94,018	-
DEPARTMENT OF DEFENSE	6940785	SUBK00009163 / PO3005498095	Rapid Autopilot Prototyping for Minimally Modeled Aircraft	12.300	180,931	-
			Total for University of Michigan		**1,226,028**	**-**
University of Maryland						
DEPARTMENT OF DEFENSE	6935254	43830-Z8183003	MURI: Photonic Quantum Matter	12.800	58,651	-
			Total for University of Maryland		**58,651**	**-**
Boise State University						
DEPARTMENT OF DEFENSE	6933762	6856-PO124372	Phase-Controlled Magnetron Development	12.800	-2,111	-
DEPARTMENT OF DEFENSE	6940736	8583-PO132256	Plasma and Electro-Energetic Physics	12.800	102,686	-
			Total for Boise State University		**100,575**	**-**
BAE Systems						
DEPARTMENT OF DEFENSE	6939994	921019-11	BAE DARPA BRASS	12.RD	50,970	-
DEPARTMENT OF DEFENSE	6942890	1056208	CAML: MINDFUL	12.910	89,298	-
			Total for BAE Systems		**140,268**	**-**
University of Minnesota						
DEPARTMENT OF DEFENSE	6943095	A006524101	Optimal Sensor Tasking Through Deep Reinforcement Learning for Space Situational Awareness	12.800	41,065	-
DEPARTMENT OF DEFENSE	6941912	A007146101	Development of Dynamic Data-Driven Uncertainty Quantification System	12.800	75,553	-
DEPARTMENT OF DEFENSE	6937286	A006141803	Predicting Turbulent Multi-Phase Flows with High Fidelity: A Physics-Based Approach	12.300	130,338	-
			Total for University of Minnesota		**246,956**	**-**
Emory University						

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DEPARTMENT OF DEFENSE	6939929	A007735	MURI: Molecular Level Studies of Solid-Liquid Interfaces in Electrochemical Processes	12.800	456,016	-
			Total for Emory University		**456,016**	**-**
Aerospace Corporation						
DEPARTMENT OF DEFENSE	6938786	AGMT DTD 3/15/18	Design of Reconfigurable Constellation Architectures	12.RD	109,011	-
DEPARTMENT OF DEFENSE	6938879	PO# 4600006296	Relative Operations for Autonomous Maneuvers	12.RD	144,835	-
			Total for Aerospace Corporation		**253,846**	**-**
Pointwise, Inc						
DEPARTMENT OF DEFENSE	6942801	AGMT. DATED 2/26/2020	Aircraft Configuration Development Using Medium-Fidelity Computational Methods	12.RD	32,903	-
			Total for Pointwise, Inc		**32,903**	**-**
National Aerospace Solutions, LLC						
DEPARTMENT OF DEFENSE	6941220	AGMT. DTD. 06/24/2019	Hypersonic Modeling, Analysis, Simulation, and Testing	12.RD	69,613	-
			Total for National Aerospace Solutions, LLC		**69,613**	**-**
Metis Design Corporation						
DEPARTMENT OF DEFENSE	6941144	AGMT. DTD. 2/1/2019	Analyzing carbon nanotube FETs for RF applications.	12.RD	74,736	-
DEPARTMENT OF DEFENSE	6936775	SBIR AGMT EFF 8/27/17	Carbon Nanotube Electronics for Radiation-Resilient Hardware	12.RD	115,156	-
DEPARTMENT OF DEFENSE	6941669	AGMT DATED 4/15/2019	STTR Phase I: Interlaminar Reinforcement of Composite Rotorcraft Components via Tailored Nanomorphologies of Aligned Carbon Nanotubes	12.RD	97,585	-
DEPARTMENT OF DEFENSE	6942204	AGMT DTD 1/23/2020	Scalable Manufacturing of Composite Components using Nanostructured Heaters - STTR Phase 2	12.RD	155,719	-
DEPARTMENT OF DEFENSE	6939815	STTR AGRMNT DTD. 12/05/2018	STTR Phase I: Scalable Manufacturing of Composite Components using Nanostructured Heaters	12.RD	26,950	-
			Total for Metis Design Corporation		**470,146**	**-**
SUNY: AIM Photonics						
DEPARTMENT OF DEFENSE	6940845	AGMT. DTD. 3/22/2016	IP-IMI	12.800	558,874	-
			Total for SUNY: AIM Photonics		**558,874**	**-**
University of Chicago						
DEPARTMENT OF DEFENSE	6941412	AWD100348 (SUB00000079)	Design and optimization of synthesizable materials with targeted quantum characteristics	12.800	142,479	-

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DEPARTMENT OF DEFENSE	6929146	FP054294-C	Fundamental Issues in Non-equilibrium Dynamics (MURI)	12.431	188,172	-
DEPARTMENT OF DEFENSE	6938423	FP067719	Social MIND: Social Machine Intelligence for Novel Discovery	12.910	107,771	-
			Total for University of Chicago		**438,422**	**-**
University of California-Santa Barbara						
DEPARTMENT OF DEFENSE	6940947	KK2014	Quantum Codes, Tensor Networks, and Quantum Spacetime	12.800	68,597	-
DEPARTMENT OF DEFENSE	6932998	KK1622	QUANTA: Quantitative Network-based Models of Adaptive Team Behavior	12.431	230,033	-
DEPARTMENT OF DEFENSE	6935172	KK1713	Neural foundations of expertise based on optimal decision-making, physical control and responses to stress	12.431	356,448	-
DEPARTMENT OF DEFENSE	6937076	KK1808	From Data-Driven Operator Theoretic Schemes to Predication, Inference, and Control of Systems	12.431	234,338	-
DEPARTMENT OF DEFENSE	6941151	KK9151	Institute for Collaborative Biotechnology (ICB)	12.RD	152,018	-
DEPARTMENT OF DEFENSE	6940558	SUBAWARD NO. KK1955	ICB UARC projects - Research Projects	12.431	601,840	-
DEPARTMENT OF DEFENSE	6940755	SUBAWARD NO. KK1957-03	Fundamental Biological Factors Underlying Human Performance	12.RD	258,231	-
DEPARTMENT OF DEFENSE	6938347	KK1838	A Center for Converged TeraHertz Communications and Sensing	12.910	187,876	-
			Total for University of California-Santa Barbara		**2,089,382**	**-**
GE Global Research						
DEPARTMENT OF DEFENSE	6942343	PO 401134429	Measuring Biological aptitude	12.RD	135,907	-
			Total for GE Global Research		**135,907**	**-**
Draper Laboratory Incorporated						
DEPARTMENT OF DEFENSE	6937745	SC001-1138	Mechanics of Nanostructure Assemblies (MoNA)	12.RD	4,076	-
DEPARTMENT OF DEFENSE	6932696	SC001-0000000918	Unifying Perception and Control via Fast Approximations for Fast Flight in Cluttered Environments	12.RD	-31,649	-
DEPARTMENT OF DEFENSE	6940529	SC-001-1190	System Security Integrated Through Hardware and firmware (SSITH)	12.RD	207,757	-
DEPARTMENT OF DEFENSE	6939970	SUB# SC001-1243	The Sea Whisperer: a co-adaptive self-learning ocean data framework	12.RD	160,588	-
			Total for Draper Laboratory Incorporated		**340,773**	**-**
UES, Inc.						

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DEPARTMENT OF DEFENSE	6942017	SUB NO. S-111-051-006	Synthetic Biology to Access Unnatural Porphyrins as Intermediates for Photonic Applications	12.RD	53,496	-
DEPARTMENT OF DEFENSE	6934325	SUBCONTRACT NO. S-114-005-008	Ultrafast Beam Steering/Scanning Based on Photonic Crystals	12.RD	-233	-
DEPARTMENT OF DEFENSE	6942676	SUBCONTRACT# S-111-065-001	3D printed carbon nanotube field emitters	12.RD	6,173	-
			Total for UES, Inc.		**59,436**	**-**
Brown University						
DEPARTMENT OF DEFENSE	6939420	SUBAWARD # 00001240	QuIC-M - A System for Quality-aware Interactive Curation of Models	12.300	443,493	-
DEPARTMENT OF DEFENSE	6933009	00000827	Mathematical Framework for Design Under Uncertainty	12.910	31,934	-
DEPARTMENT OF DEFENSE	6934244	00000921	Mechanism-Driven Discovery of Efficient H2 Production Electrocatalysts	12.300	40,645	-
			Total for Brown University		**516,071**	**-**
University of Colorado Boulder						
DEPARTMENT OF DEFENSE	6934474	SUBAWARD NO. 1553954	Chemical Reactions of Cold Molecular Ions and Molecular Radicals	12.800	12,074	-
			Total for University of Colorado Boulder		**12,074**	**-**
University of Arizona						
DEPARTMENT OF DEFENSE	6940557	SUBAWARD NO. 506417	Bayesian Light Curve Inversion of Space Objects	12.800	61,848	-
			Total for University of Arizona		**61,848**	**-**
Rice University						
DEPARTMENT OF DEFENSE	6933218	SUBAWARD NO. R19091	Proteus: Controlling Resource-Adaptive Embedded Softward	12.300	-58,068	-
DEPARTMENT OF DEFENSE	6942813	SUBCONTRACT NO. R1A26	Magnetic optical and acoustic neural access	12.RD	22,790	-
			Total for Rice University		**-35,278**	**-**
TIPD, LLC						
DEPARTMENT OF DEFENSE	6941048	SUBCONTRACT UNDER FA8650-19-P-6010	Leaky Waveguide Full Parallax Holographic Video Display (LWFP-HVD)	12.RD	5,977	-
			Total for TIPD, LLC		**5,977**	**-**
Battelle Memorial Institute						
DEPARTMENT OF DEFENSE	6942129	US001-0000758851-LINE 1	Granular Jamming for Runway Repair	12.RD	92,409	-

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DEPARTMENT OF DEFENSE	6941249	PO US0011-0000743557-LINE 1	Low-Probability-of-Detect/Intercept Communications Employing Peaky Frequency-Shift-Key Modulation	12.RD	417,704	-
			Total for Battelle Memorial Institute		**510,113**	**-**
University of Texas - Austin						
DEPARTMENT OF DEFENSE	6936108	UTA17-000362	Bayesian Optimal Experimental Design for Inverse Scattering	12.800	130,989	-
DEPARTMENT OF DEFENSE	6934067	UTA16-000556	Phonon Hydrodynamics and Spectroscopy in High Thermal Conductivity Materials	12.300	289,936	-
			Total for University of Texas - Austin		**420,925**	**-**
University of Washington						
DEPARTMENT OF DEFENSE	6941764	UWSC11381 PO42935	Neural-inspired sparse sensing and control for agile flight	12.800	66,737	-
DEPARTMENT OF DEFENSE	6941979	UWSC11420	2D MAGIC: New Science from Two-Dimensional MAGnetIC Heterostructures	12.800	6,006	-
DEPARTMENT OF DEFENSE	6933157	BPO4415, SUB# UWSC7968	Muscle's Energetic Versatility Arises From Its Crystalline and Multi-Component Structure	12.431	22,831	-
			Total for University of Washington		**95,575**	**-**
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	96,937	-
			Total for Zona Technology, Inc.		**96,937**	**-**
University of Wisconsin-Madison						
DEPARTMENT OF DEFENSE	6941698	0000000208	From Particles to Landforms: Integrating Theory, Computation, Experiments and Field Data to Overcome Empiricisms	12.431	100,889	-
			Total for University of Wisconsin-Madison		**100,889**	**-**
Beth Israel Deaconess Medical Center						
DEPARTMENT OF DEFENSE	6936076	01029123	DAMP-Mediated Innate Immune Failure and Pneumonia after Trauma	12.420	208,810	-
			Total for Beth Israel Deaconess Medical Center		**208,810**	**-**
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	24,384	-

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DEPARTMENT OF DEFENSE	6935768	10043028-MIT	Design Responding to Engineering Analysis in support of Manufacturing	12.910	221,237	-
DEPARTMENT OF DEFENSE	6935759	10043182-MIT	Augmented Design Through Analysis and Visualization Facilitating Better Designs and Enhanced Designers	12.910	38,636	-
			Total for University of Utah		**284,258**	**-**
Carnegie-Mellon University						
DEPARTMENT OF DEFENSE	6941571	1130236-420697	MasAI-Assisted Detection and Target Recognition (AIDTR)	12.431	343,151	-
			Total for Carnegie-Mellon University		**343,151**	**-**
Brigham & Women's Hospital						
DEPARTMENT OF DEFENSE	6942602	122094	Developing targeted chemotherapeutics for malignant brain tumors using an innovative	12.420	16,106	-
DEPARTMENT OF DEFENSE	6940336	SUBAWARD 117951	A Novel Approach to Lower Extremity Amputation to Augment Volitional Motor Control and Restore Proprioception	12.420	141,333	-
DEPARTMENT OF DEFENSE	6940338	SUBAWARD 119948	A Novel Approach to Upper Extremity Amputation to Augment Volitional Motor Control and Restore Proprioception	12.420	301,666	-
			Total for Brigham & Women's Hospital		**459,105**	**-**
Harvard University						
DEPARTMENT OF DEFENSE	6942205	124164	Billing Agreement - Neha Kapate: Targeted drug delivery to the brain via red blood cell hitchhiking of nanoparticles for improved treatment of glioblastoma multiforme	12.420	31,002	-
DEPARTMENT OF DEFENSE	6936171	134062-5093041	Imaging and Control of Biological Transduction using NV-Diamond	12.431	484,072	-
DEPARTMENT OF DEFENSE	6939434	134119-5110647	Topological Superconductivity using Layered Materials	12.431	119,177	-
DEPARTMENT OF DEFENSE	6940390	167936.0003	Reverse Engineering Host Resilience	12.RD	-90	-
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	6,700	-
DEPARTMENT OF DEFENSE	6940300	AGMT DTD 3/19/2019	Diamond Nitrogen Vacancy Magnetometry	12.910	0	-
DEPARTMENT OF DEFENSE	6941264	GEORGE_CHAO_153170_FY20	Billing Agreement - Chung-Yun Chao-Summer - Design of Cellular Blocks, their Programmatic Assembly into Biological Meshes, and the Synthesis of Tissue-Like Structures	12.431	7,308	-

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DEPARTMENT OF DEFENSE	6937039	123950-5092634	Quantum Opto-Mechanics with Atoms and Nanostructured Diamond (QOMAND)	12.300	186,824	-
DEPARTMENT OF DEFENSE	6943286	130417-5114573	Next-Generation Materials for Oxygen Generation, Transport, and Storage in the Undersea Environment	12.300	18,802	-
DEPARTMENT OF DEFENSE	6940862	7555498-01	Billing Agreement - Dylan Cable - Harvard	12.300	-3	-
DEPARTMENT OF DEFENSE	6942123	124164	Billing Agreement - Wang, Li-Wen	12.420	55,100	-
			Total for Harvard University		**908,893**	**-**
University of Maryland - College Park						
DEPARTMENT OF DEFENSE	6932951	28725-Z8401005	Center for Distributed Quantum Information	12.431	248,729	-
DEPARTMENT OF DEFENSE	6932890	2875-Z8401005	Center for Distributed Quantum Information	12.431	294,176	-
			Total for University of Maryland - College Park		**542,905**	**-**
Duke University						
DEPARTMENT OF DEFENSE	6939801	313-0837	Quantum control based on real-time environment analysis by spectator qubits	12.431	307,549	-
DEPARTMENT OF DEFENSE	6938444	313-0793	An Integrated Nonparametric Bayesian and Deep Neural Network Framework for Biologically-Inspired Lifelong Learning	12.910	444,269	-
DEPARTMENT OF DEFENSE	6928294	13-ONR-1109	Expanding the Limits of Acoustic Metamaterials	12.300	85,884	-
			Total for Duke University		**837,703**	**-**
Boston University						
DEPARTMENT OF DEFENSE	6941261	4500003079	ICENET: Integrated Cryogenic Egress with Nanophotonics for Exascale Technology	12.431	161,269	-
DEPARTMENT OF DEFENSE	6942484	4500003251	RECURRENT MODULE NETWORKS: A THEORY AND APPLICATIONS	12.910	144,944	-
DEPARTMENT OF DEFENSE	6935193	4500002204	NEURAL CIRCUITS UNDERLYING SYMBOLIC PROCESSING IN PRIMATE CORTEX AND BASAL GANGLIA	12.300	346,321	-
DEPARTMENT OF DEFENSE	6942565	4500003329	Neuro_autonomy: Neuroscience-Inspired Perception, Navigation, and Spatial Awareness for Autonomous Robots	12.300	93,565	-
			Total for Boston University		**746,100**	**-**
Northeastern University						
DEPARTMENT OF DEFENSE	6940208	504126-78055	Engineered Materials and Materials Design for Engineered Materials (EMMDEM)	12.431	221,119	50,000

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DEPARTMENT OF DEFENSE	6943253	504141-78050	Engineered Materials And Materials Design for Engineered Materials (EMMDEM) Year 3	12.431	21,428	-
DEPARTMENT OF DEFENSE	6941800	505176-78050	ACHILLES: Assured CryptograpHic Integration of muLtiple Languages for Encrypted Systems	12.RD	374,441	-
			Total for Northeastern University		**616,989**	**50,000**
University of Pennsylvania						
DEPARTMENT OF DEFENSE	6926839	560102	Evolution of Cultural Norms and Dynamics of Socio Political Change	12.431	104,714	-
DEPARTMENT OF DEFENSE	6939085	572622	ARCHES: Autonomous Resilient Cognitive Heterogeneous Swarms	12.630	1,037,647	-
DEPARTMENT OF DEFENSE	6940647	PO 4271955 SUB#576432	ARCHES: Autonomous Resilient Cognitive Heterogeneous Swarms	12.630	85,373	-
DEPARTMENT OF DEFENSE	6940107	575467 / PO #4174326	The statistical mechanics of crowds - tools for predictive modeling in the social sciences	12.910	-178	-
DEPARTMENT OF DEFENSE	6937175	572339	New phase change materials for photonics: from in-silico design to novel device concepts	12.300	505,752	-
DEPARTMENT OF DEFENSE	6939157	574340, PO 4511655	Blueprint for design and assembly of multifunctional, adaptive materials using the nanocrystal periodic table	12.300	353,484	-
			Total for University of Pennsylvania		**2,086,792**	**-**
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	33,920	-
			Total for Modern Technology Solutions, Inc.		**33,920**	**-**
H. F. Webster Engineering Services						
DEPARTMENT OF DEFENSE	6940060	AGRMNT DTD. 10/01/2018	Understanding cold spray through single particle impact studies	12.431	26,832	-
			Total for H. F. Webster Engineering Services		**26,832**	**-**
Mimosa Acoustics Inc.						
DEPARTMENT OF DEFENSE	6940745	AWD DTD 5/01/2019	Objective Measurement Tool for Detection and Monitoring of Noise-Induced Hearing Loss	12.RD	59,506	-
DEPARTMENT OF DEFENSE	6939874	SUBCONTRACT DTD. 12/18/2018	Portable Acquisition, Assessment, and Reporting of Middle Ear Function and Hearing - All-in-One Binaural Audiological Test System, Revision D	12.RD	-33	-
			Total for Mimosa Acoustics Inc.		**59,473**	**-**

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Georgia Institute of Technology						
DEPARTMENT OF DEFENSE	6941447	AWD-000084-G3	Formal Foundations of Algorithmic Matter and Emergent Computation	12.431	190,859	-
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	220,793	-
			Total for Georgia Institute of Technology		**411,652**	**-**
University of Sydney						
DEPARTMENT OF DEFENSE	6937861	G174385 RESEARCH COLLABORATION AGREEMENT	Quantum Control Engineering	12.431	140,180	-
			Total for University of Sydney		**140,180**	**-**
University of California						
DEPARTMENT OF DEFENSE	6938164	KK9151	Institute for Collaborative Biotechnology (ICB)	12.RD	-628	-
DEPARTMENT OF DEFENSE	6933077	KK9151-44	Institute for Collaborative Biotechnology (ICB)	12.RD	23,616	-
DEPARTMENT OF DEFENSE	6941708	SUBAWARD NO. KK1957-05	Fundamental Biological Factors Underlying Human Performance	12.RD	96,732	-
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	198,664	-
			Total for University of California		**318,384**	**-**
General Dynamics						
DEPARTMENT OF DEFENSE	6936534	PO# 40279278	General Dynamics Land Systems	12.431	151,949	-
			Total for General Dynamics		**151,949**	**-**
Research Foundation of SUNY-Buffalo						
DEPARTMENT OF DEFENSE	6941275	R1173649	Molecular design and assembly towards conducting ferroic crystals	12.431	23,255	-
			Total for Research Foundation of SUNY-Buffalo		**23,255**	**-**
California Institute of Technology						
DEPARTMENT OF DEFENSE	6939667	S396000	Dynamics in Photo-Doped Metastable States	12.431	109,797	-
			Total for California Institute of Technology		**109,797**	**-**
LongWave Photonics LLC						

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DEPARTMENT OF DEFENSE	6940267	STTR AGMT UNDER W911NF18C0097	STTR Phase II: Tunable Active HEterodyne THz Imager (TAHETI)	12.RD	231,927	-
			Total for LongWave Photonics LLC		**231,927**	**-**
QinetiQ North America, Inc.						
DEPARTMENT OF DEFENSE	6940073	SUB3-00233	Robot-Assisted Wire-harness Installation	12.RD	51,282	-
			Total for QinetiQ North America, Inc.		**51,282**	**-**
Sri International						
DEPARTMENT OF DEFENSE	6931008	SUBCONTRACT 27-001441, REL 2	Mining and Understanding Software Enclaves (MUSE)	12.RD	73,668	-
			Total for Sri International		**73,668**	**-**
New Jersey Institute of Technology						
DEPARTMENT OF DEFENSE	6932677	(NP) 996402	PALISADE: Program obfuscation Advancement with Lattice Implementation for Scalable Application Demonstration of Efficiency	12.RD	49,893	-
			Total for New Jersey Institute of Technology		**49,893**	**-**
University of California - Berkeley						
DEPARTMENT OF DEFENSE	6938520	00009805	Harnessing Parameterization for Fast and Reliable Nonconvex Optimization	12.910	192,941	-
DEPARTMENT OF DEFENSE	6943071	10333	:MESS: Model Building, Exploratory, Social System	12.910	221,527	-
DEPARTMENT OF DEFENSE	6933761	00009042/PO#BB00650967	Helio: Program Synthesis for Efficient, Privacy-Preserving Distributed Computation	12.RD	45,809	-
DEPARTMENT OF DEFENSE	6940831	SUBAGREEMENT NO. 00010066	Rational Design of Statistical Heteropolymers as Biomimetic Enzymes and Binders	12.351	300,146	-
			Total for University of California - Berkeley		**760,423**	**-**
On Demand Pharmaceuticals Inc						
DEPARTMENT OF DEFENSE	6934747	001	Pharmacy on Demand Technology Transition	12.910	136	-
			Total for On Demand Pharmaceuticals Inc		**136**	**-**
Raytheon Technologies Corporation						
DEPARTMENT OF DEFENSE	6935230	1224171 / PO# 2604891	Scalable Inference for Rare Events (SIRE).	12.RD	76,858	-
			Total for Raytheon Technologies Corporation		**76,858**	**-**
University of California-San Diego						

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DEPARTMENT OF DEFENSE	6943076	131169460	Performance Evaluation Network Measurements and Analytics (PENMAN)	12.910	18,991	-
DEPARTMENT OF DEFENSE	6939646	108548654	RAIDER: Resilient Actionable Intelligence for Distributed Environment understanding and Reasoning	12.300	103,539	-
DEPARTMENT OF DEFENSE	6934249	PO #S9000381, SUB #43019208	The Information Content of Ocean Noise: Theory and Experiment - Imaging the Changing Arctic with Ice Noise	12.300	-4,256	-
			Total for University of California-San Diego		**118,274**	**-**
Harvard Medical School						
DEPARTMENT OF DEFENSE	6938338	152304.5106735.0006	Surveillance of Passenger Organisms to Record Embarkment	12.910	-119,061	-
DEPARTMENT OF DEFENSE	6942710	152318.5112612.0006	STOP PAIN: Safe Therapeutic Options for Pain and Inflammation	12.91	207,578	-
DEPARTMENT OF DEFENSE	6940234	153283.5110025.0014	Computationally Designed Biostasis Proteins Optimized in High-Throughput Screens	12.910	336,903	-
DEPARTMENT OF DEFENSE	6943412	153283.5110025.0028	Computationally Designed Biostasis Proteins Optimized in High-Throughput Screens	12.910	19,944	-
DEPARTMENT OF DEFENSE	6939658	325-28721-124078-322771	Understanding the hierarchical self-assembly of biological gels	12.300	10,083	-
DEPARTMENT OF DEFENSE	6939479	45493.2019.0001 / PO 70002752463	Letter Agreement: Li-Wen	12.420	502	-
			Total for Harvard Medical School		**455,949**	**-**
Wyss Institute						
DEPARTMENT OF DEFENSE	6941203	167982.0001	Bianca Lepe - Integration of top-down and bottom-up methodologies for accurate modeling of biological networks	12.RD	63,873	-
DEPARTMENT OF DEFENSE	6942594	167982.0001	Billing Agreement - Jacqueline Valeri - Integration of top-down and bottom-up methodologies for accurate modeling of biological networks	12.RD	16,274	-
			Total for Wyss Institute		**80,147**	**-**
Smithsonian Inst. - Astrophysical Observatory						
DEPARTMENT OF DEFENSE	6939228	18-S-TO-0000404937	Development of Nanoscale Magnetometer using Quantum assisted Sensing Readout	12.910	1,289	-
			Total for Smithsonian Inst. - Astrophysical Observatory		**1,289**	**-**
SYSTEMS & TECHNOLOGY RESEARCH LLC						
DEPARTMENT OF DEFENSE	6937319	2017-0026	STTR Phase II: DEEPSONG	12.RD	111,787	-

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DEPARTMENT OF DEFENSE	6941663	2019-0013	Learning with Optimal Labels (LOL)	12.RD	141,891	-
			Total for SYSTEMS & TECHNOLOGY RESEARCH LLC		**253,678**	**-**
University of Tennessee						
DEPARTMENT OF DEFENSE	6940665	9500074403	Phytosensors 2.0	12.910	407,670	-
DEPARTMENT OF DEFENSE	6941253	SUBAWARD NUMBER 9500081144	SYNTHETIC CHLOROPLAST GENOME-ENABLED IMPROVED PHOTOSYNTHESIS AND SUSTAINABILITY IN CROPS	12.910	11,757	-
			Total for University of Tennessee		**419,427**	**-**
BAE Systems Info & Electronic Systems Integration, Inc						
DEPARTMENT OF DEFENSE	6937008	964193	Bundle Congestion Control for Programmable Network Control Points	12.RD	267,975	-
			Total for BAE Systems Info & Electronic Systems Integration, Inc		**267,975**	**-**
Sandia National Laboratories						
DEPARTMENT OF DEFENSE	6934229	AGREEMENT 1340868 / PO 1685489	Uncertainty Quantification in LES Computations of Turbulent Multiphase Combustion in a SCRAMJET Engine	12.RD	-12,890	-
			Total for Sandia National Laboratories		**-12,890**	**-**
Aurora Flight Sciences RDC						
DEPARTMENT OF DEFENSE	6936333	AGRMT EFF. 9/27/16	ALASA CubeSat Deformable Mirror Demonstration Mission (DEMI)	12.RD	21,596	-
DEPARTMENT OF DEFENSE	6935749	AMA-17-0001	ALASA CubeSat Deformable Mirror Demonstration Mission (DEMI)	12.RD	41,033	-
			Total for Aurora Flight Sciences RDC		**62,630**	**-**
Ecovative Design LLC						
DEPARTMENT OF DEFENSE	6939027	AGT DATED 6/30/18	Sustainable Biologically Active Modular Building Materials	12.RD	745,705	-
			Total for Ecovative Design LLC		**745,705**	**-**
Aurora Flight Sciences Corporation						
DEPARTMENT OF DEFENSE	6942276	AMA-19-0015	ALASA CubeSat Deformable Mirror Demonstration Mission (DEMI)	12.RD	42,111	-
			Total for Aurora Flight Sciences Corporation		**42,111**	**-**
Applied Physical Sciences Corp.						

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DEPARTMENT OF DEFENSE	6938458	APS-18-03	Tactical Exploitation of the Acoustic Channel (TEAC)	12.RD	10,894	-
			Total for Applied Physical Sciences Corp.		**10,894**	**-**
Smart Information Flow Technologies						
DEPARTMENT OF DEFENSE	6939369	CPS-MIT-01	sTTR Phase II: MacGyver: Creative Problem Solver	12.RD	199,213	-
			Total for Smart Information Flow Technologies		**199,213**	**-**
IBM Thomas J. Watson Research Center						
DEPARTMENT OF DEFENSE	6942927	CW3013540\PO4700205308	Building Machine Common Sense the Human Way	12.RD	136,882	-
DEPARTMENT OF DEFENSE	6943356	CW3031624 / PO# 4700229565	Transfer, Augmentation and Automatic Learning with Less Labels	12.91	9,081	-
DEPARTMENT OF DEFENSE	6940701	SUBCONTRACT 4917017433/PO 4700059854	DIVA - IBM	12.RD	352,061	-
			Total for IBM Thomas J. Watson Research Center		**498,024**	**-**
Columbia University						
DEPARTMENT OF DEFENSE	6943120	G14463	TRAUMAS: Treatment and recovery augmented with electrical and ultrasound- mediated actuation and sensing	12.91	161,164	-
DEPARTMENT OF DEFENSE	6927546	1(GG007792)	Power Grid Vulnerability and Resilience to Geographically Correlated Failures	12.351	21,765	-
DEPARTMENT OF DEFENSE	6943113	NO.1 (GG015669-02)/PO G14175	Verona	12.RD	55,341	-
			Total for Columbia University		**238,270**	**-**
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	117,262	-
			Total for University of Virginia		**117,262**	**-**
Raytheon BBN Technologies Corp.						
DEPARTMENT OF DEFENSE	6938139	LBN9513645	Explainable Question Answering System (EQUAS)	12.910	104,829	-
DEPARTMENT OF DEFENSE	6940318	PO #4202005609 BBN REF #90065	INSPECT: IN Situ Phenotype Evaluation using CMOS Technology	12.910	357,388	-
DEPARTMENT OF DEFENSE	6942346	PO# 4202187793 BBN REF#90113	SYMBIANT	12.RD	86,573	-
DEPARTMENT OF DEFENSE	6936196	SLIN 0001 / LBN9513537	Generalized Network Assisted Transport (GNAT)	12.RD	182,542	-

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DEPARTMENT OF DEFENSE	6936009	9500013359	(CONQUEST) Communications and Networking with Quantum Operationally-Secure Technology for Maritime Deployment	12.RD	38,978	-
DEPARTMENT OF DEFENSE	6935317	LBN9513359	(CONQUEST) Communications and Networking with Quantum Operationally-Secure Technology for Maritime Deployment	12.RD	66,492	-
			Total for Raytheon BBN Technologies Corp.		**836,802**	**-**
NVIDIA Corporation						
DEPARTMENT OF DEFENSE	6939240	PO 56090640	Symphony: Orchestrating Sparse and Dense Data for Efficient Computation	12.RD	516,742	-
			Total for NVIDIA Corporation		**516,742**	**-**
BBN Technologies Corporation						
DEPARTMENT OF DEFENSE	6937311	PO LBN9513244	Precision Ocean Interrogation, Navigation and Timing (POINT)	12.RD	-2,737	-
			Total for BBN Technologies Corporation		**-2,737**	**-**
Perspecta Labs Inc.						
DEPARTMENT OF DEFENSE	6934363	PO-0008492	SCATTERED	12.RD	-95,428	-
DEPARTMENT OF DEFENSE	6939719	PO-0016764 PRIME HR001117S0035	WILEE: Agent-Based Threat Detection and Adaptive Collection for Cyber Hunting at Scale	12.RD	292,244	-
			Total for Perspecta Labs Inc.		**196,817**	**-**
Scientific Systems Company, Incorporated						
DEPARTMENT OF DEFENSE	6941339	SC-1656-01	Teammate Aware Autonomy	12.RD	88,648	-
DEPARTMENT OF DEFENSE	6941099	SC-1661-04	Rapid Autonomous Instigated Discovery of Threats (RAID-T)	12.RD	142,701	-
DEPARTMENT OF DEFENSE	6941206	SC-1664-01	Station-keeping using Perception and Relative Image-based Navigation and Tracking (SPRINT)	12.RD	79,923	-
DEPARTMENT OF DEFENSE	6942142	SUBCONTRACT # SC-1674-001	DecPOMDPs for SWIFT ARROW	12.RD	89,397	-
DEPARTMENT OF DEFENSE	6941430	SC-1654-01	Real-Time Validation of Machine Intelligence Controlling Unmanned Vehicle Autonomous Operations	12.RD	28,934	-
			Total for Scientific Systems Company, Incorporated		**429,602**	**-**
Charles River Analytics						
DEPARTMENT OF DEFENSE	6942396	SC1911601	Compositionally Organized Learning To Reason About Novel Experience (COLTRANE)	12.910	262,102	-

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			Total for Charles River Analytics		**262,102**	**-**
Aarno Labs LLC						
DEPARTMENT OF DEFENSE	6939022	SUB UNDER HR001118C0059	Arya: Automatic Injection of Defensive Agents	12.RD	765,425	-
			Total for Aarno Labs LLC		**765,425**	**-**
Dynamic Object Language Labs, Inc.						
DEPARTMENT OF DEFENSE	6942303	SUB UNDER HR0011-20-C-0035	Robust Ideal Team Assistant (RITA)	12.RD	352,657	-
			Total for Dynamic Object Language Labs, Inc.		**352,657**	**-**
Princeton University						
DEPARTMENT OF DEFENSE	6940192	SUB0000294	Re-configurable IR frequency comb spectronscopic sending platform for chemical threat detection	12.910	261,856	-
DEPARTMENT OF DEFENSE	6939778	SUBCONTRACT NO: SUB0000266	Physics-Informed Machine Learning via Imposed Constraints (PIMLICo)	12.RD	155,146	-
			Total for Princeton University		**417,002**	**-**
Aptima, Inc.						
DEPARTMENT OF DEFENSE	6941672	SUBCONTRACT NUMBER 1197-2015	Agile Teams (A-Teams) - ThermoTeams: An Energy-Based Approach to the Design of Highly Adaptive Teams	12.RD	126,036	-
			Total for Aptima, Inc.		**126,036**	**-**
Haverford College						
DEPARTMENT OF DEFENSE	6942287	SUBK DTD. 12/15/2019	Discovering Reactions and Uncovering Mechanisms of Hybrid Organohalide Perovskite Formation	12.RD	172,503	-
			Total for Haverford College		**172,503**	**-**
University of Southern California						
DEPARTMENT OF DEFENSE	6939922	107215392	Livtronics: Living Electronics for Biologically-Enhanced Sensing, Computing, and Signal Transmission	12.300	265,223	-
DEPARTMENT OF DEFENSE	6942367	125046653	Multi-modal Open World Grounded Learning and Inference (MOWGLI)	12.910	35,244	-
DEPARTMENT OF DEFENSE	6937906	90502031	IARPA QEO, Algorithms and Designs for Quantum Annealing	12.RD	175,728	-
DEPARTMENT OF DEFENSE	6937962	NO. 94711981	SARAL: Summarization and domain-Adaptive Retrieval of Information Across Languages	12.RD	158,678	-

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Prime Sponsor Name	Project WBS id	Passthrough Number	WBS Project Name	CFDA #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
			Total for University of Southern California		**634,873**	**-**
Oasis						
DEPARTMENT OF DEFENSE	6942398	1186-001-45	Detection Rate Improvements Through Understanding and Modeling Variability	12.RD	21,215	-
DEPARTMENT OF DEFENSE	6940842	OASIS 19-05	STTR Phase I Opt 1: Detection Rate Improvements Through Understanding and Modeling Ocean Stability	12.RD	29,817	-
			Total for Oasis		**51,032**	**-**
Temple University						
DEPARTMENT OF DEFENSE	6941980	264443-MIT / PO P0583584	Elements of Causal Learning: Basic Concepts, Theory, Methods, Algorithms and Applications	12.300	74,618	-
			Total for Temple University		**74,618**	**-**
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	191,465	-
			Total for Virginia Polytechnic Institute & State University		**191,465**	**-**
Stanford University						
DEPARTMENT OF DEFENSE	6931094	60744752-114407	Role of Bidirectional Computation in Visual Scene Analysis	12.300	122,655	-
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	163,177	-
			Total for Stanford University		**285,831**	**-**
Cornell University						
DEPARTMENT OF DEFENSE	6937216	81825-10911	PERISCOPE: Perceptual Representations for Actions, Composition, and Verification	12.300	1,317,888	-
DEPARTMENT OF DEFENSE	6941679	87748-11235	Modeling and Planning with Human Impressions of Robots	12.300	5,023	-
			Total for Cornell University		**1,322,910**	**-**
Woods Hole Oceanographic Institution						
DEPARTMENT OF DEFENSE	6941770	A101439	COAST: A CubeSat for Measuring Sea Surface Salinity with Integrated Atmospheric Correction Capabilities	12.300	59,711	-
			Total for Woods Hole Oceanographic Institution		**59,711**	**-**
Applied Ocean Sciences, LLC						

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DEPARTMENT OF DEFENSE	6942080	AGMT DTD 8/9/19	Local Stochastic Prediction for UUV/USV Environmental Awareness	12.RD	39,064	-
			Total for Applied Ocean Sciences, LLC		**39,064**	**-**
Radiation Monitoring Devices						
DEPARTMENT OF DEFENSE	6941640	C19-20	Hot Wall Epitaxy of Mixed Lead Chalcogenides in Resonant Cavity Structures	12.RD	175,166	-
			Total for Radiation Monitoring Devices		**175,166**	**-**
George Mason University						
DEPARTMENT OF DEFENSE	6937200	E2042811	Safety Evaluation of Lithium-ion Batteries Under Combined Mechanical and Electrical Abuse Conditions	12.300	48,011	-
DEPARTMENT OF DEFENSE	6939518	E2045481	Host-based anti-microbial peptides as therapeutic strategies for alphavirus infection	12.351	78,018	-
			Total for George Mason University		**126,029**	**-**
Florida State University						
DEPARTMENT OF DEFENSE	6935158	R01849	ESRDC - FSU and MIT Sea Grant Collaboration	12.300	199,405	-
			Total for Florida State University		**199,405**	**-**
SeeByte						
DEPARTMENT OF DEFENSE	6942772	SC0001-19	Feasibility Study for a Multi-Architecture Autonomy Framework	12.RD	53,593	-
			Total for SeeByte		**53,593**	**-**
American Lightweight Materials Manufacturing Innovation Institute						
DEPARTMENT OF DEFENSE	6934657	SUB AWARD NUMBER 0004A-5	Sub-Award Agreement 0001: Cross-Cut Pillar Lead - Cost Modeling v.2	12.RD	-18	-
			Total for American Lightweight Materials Manufacturing Innovation Institute		**-18**	**-**
University of Illinois						
DEPARTMENT OF DEFENSE	6943393	SUB# 099963-17888	Robust Photonic Materials with High-Order Topological Protection	12.300	586	-
			Total for University of Illinois		**586**	**-**
CREARE, Incorporated						
DEPARTMENT OF DEFENSE	6932855	SUBCONTRACT NO. 78380	Ship Airwake Measurement System	12.RD	48,960	-
			Total for CREARE, Incorporated		**48,960**	**-**

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HRL Laboratories, LLC						
DEPARTMENT OF DEFENSE	6938516	15026-503667-DS	Microwave Quantum Engineering for Semiconductor Quantum Dot Qubits	12.RD	226,153	-
			Total for HRL Laboratories, LLC		**226,153**	**-**
Vanderbilt University						
DEPARTMENT OF DEFENSE	6940344	SUBCONTRACT UNIV60073	Strategic Sensing and Resource Allocation for Infrastructure Resilience	12.RD	139,595	-
			Total for Vanderbilt University		**139,595**	**-**
Civil-Military Innovation Institute, Inc.						
DEPARTMENT OF DEFENSE	6939234	1807-001	Development of NSIC Program and End-User Driven/Prototype Development (ED/PD) Course	12.RD	36,885	-
			Total for Civil-Military Innovation Institute, Inc.		**36,885**	**-**
Stevens Institute of Technology						
DEPARTMENT OF DEFENSE	6939449	2102876-03	(SERC) Collaboration Agreement: Systems Engineering Research Center	12.RD	7,078	-
DEPARTMENT OF DEFENSE	6940962	SUBAWARD # 2102948-01	Model Curation Innovation & Implementation	12.RD	349,434	-
DEPARTMENT OF DEFENSE	6941670	SUBAWARD # 2102960-02	WRT 1008 Transforming Systems Engineering through Model-Centric Engineering ? Phase 6	12.431	36,408	-
			Total for Stevens Institute of Technology		**392,921**	**-**
Ohio State University						
DEPARTMENT OF DEFENSE	6931042	60040869/RF01385268	Modeling, Analysis and Control for Robust Interdependent Networks	12.351	-5,511	-
			Total for Ohio State University		**-5,511**	**-**
ESPACE						
DEPARTMENT OF DEFENSE	6928454	AGMT. DTD. 8/14/13	IMPACT: Validation of iEPS in Space	12.RD	565,160	-
			Total for ESPACE		**565,160**	**-**
Advanced Functional Fabrics of America (AFFOA)						
DEPARTMENT OF DEFENSE	6938682	EXHIBIT 1-A	Shape-Shifting Climate-Adaptive Garments	12.RD	213,840	69,566
DEPARTMENT OF DEFENSE	6941166	TASK ORDER NUMBER: 003	Shape-Shifting Climate-Adaptive Garments	12.RD	29,414	-
			Total for Advanced Functional Fabrics of America (AFFOA)		**243,254**	**69,566**

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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	287,649	-
			Total for North American Philips Corporation - Philips L		**287,649**	**-**
Ministry of Defense of Israel						
DEPARTMENT OF DEFENSE	6941452	PO 4440883829	Heterogeneous Multi-Agent Systems for Maritime Applications	12.RD	9,003	-
DEPARTMENT OF DEFENSE	6938047	PO 4440884397	Multifunctional Fiber System for Magnetic Wave Sensing	12.RD	57,255	-
DEPARTMENT OF DEFENSE	6931680	PO 4440949975	Planning and Sensing Algorithms for Underwater Persistent Monitoring	12.RD	52,105	-
DEPARTMENT OF DEFENSE	6942162	PO 4441024394	Effects of Oxidizing Environments on Carbon-Based Materials	12.RD	78,396	-
			Total for Ministry of Defense of Israel		**196,759**	**-**
Advanced Regenerative Manufacturing Institute						
DEPARTMENT OF DEFENSE	6941797	SUBAWARD NO. T0060	Differentiation and Monitoring of Mature Liver Organoids for Drug Testing	12.630	341,461	-
			Total for Advanced Regenerative Manufacturing Institute		**341,461**	**-**
Potomac Institute For Policy Studies						
DEPARTMENT OF DEFENSE	6939559	SUBCONTRACT NUMBER: S18-07	DARPA IPA Study	12.RD	35,730	-
			Total for Potomac Institute For Policy Studies		**35,730**	**-**
			TOTAL for Department of Defense		**40,326,635**	**180,850**

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DEPARTMENT OF COMMERCE						
Northeastern University						
DEPARTMENT OF COMMERCE	6935162	599807-78050	Investigation of The Effects of Ocean Acidification & Warming	11.417	5,561	-
			Total for Northeastern University		**5,561**	**-**
Northwestern University						
DEPARTMENT OF COMMERCE	6943285	60052977 MIT	CHiMaD Award-Sub from Northwestern Univeristy	11.609	17,293	-
			Total for Northwestern University		**17,293**	**-**
Aerodyne Research Incorporated						
DEPARTMENT OF COMMERCE	6939657	ARI 11436-1	SBIR Phase I: Developing a robust and scalable calibration approach to low-cost AQ sensing	11.RD	-71	-
			Total for Aerodyne Research Incorporated		**-71**	**-**
U Delaware: National Institute for Innovation in Manufacturing Biopharmaceuticals (NIIMBL)						
DEPARTMENT OF COMMERCE	6941814	PC1.0.006 / PO# 53391	NIIMBL Projects	11.619	187,999	-
DEPARTMENT OF COMMERCE	6941812	PC2.1-036 / PO 55644	NIIMBL Projects	11.619	156,187	-
DEPARTMENT OF COMMERCE	6943411	PC2.1-037	NIIMBL Projects	11.619	6,792	-
			Total for U Delaware: National Institute for Innovation in Manufacturing Biopharmaceuticals (NIIMBL)		**350,977**	**-**
Total Technology, Inc.						
DEPARTMENT OF COMMERCE	6939456	PO# 18-076	NSWC Crane Innovation Eco-System Case Study	11.RD	68,835	-
			Total for Total Technology, Inc.		**68,835**	**-**
Lincoln Laboratory						
DEPARTMENT OF COMMERCE	6937869	PO# 7000406016	MIT-LL collaborative project: Representative Public Safety Video Testbed	11.609	-2,629	-
			Total for Lincoln Laboratory		**-2,629**	**-**
			TOTAL for Department of Commerce		**439,966**	**-**

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DEPARTMENT OF ENERGY						
Brown University						
DEPARTMENT OF ENERGY	6941848	00001292	Bridging the time scale in exascale computing of chemical systems	81.049	151,153	-
			Total for Brown University		**151,153**	**-**
University of Alabama-Birmingham						
DEPARTMENT OF ENERGY	6942567	000517656-SC001	Novel, Middle and Long Wave Infrared Laser Sources For Accelerator and X-ray Generation Applications	81.049	125,444	-
			Total for University of Alabama-Birmingham		**125,444**	**-**
University of Illinois-Urbana Champaign						
DEPARTMENT OF ENERGY	6939594	078620-16205 (GRANT CODE: AC995)	Cyber Resilient Energy Delivery Consortium (CREDC)	81.122	412,103	-
			Total for University of Illinois-Urbana Champaign		**412,103**	**-**
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	139,782	-
			Total for University of Illinois Board of Trustees		**139,782**	**-**
AltaRock Energy, LLC						
DEPARTMENT OF ENERGY	6942705	1051-2	Millimeter-Wave Technology Demonstration for Geothermal Direct Energy Drilling	81.135	18,392	-
			Total for AltaRock Energy, LLC		**18,392**	**-**
Worcester Polytechnic Institute						
DEPARTMENT OF ENERGY	6942797	10634-GR	A Catalytic Process to Convert Municipal Solid Waste Components to Energy	81.087	118,320	-
			Total for Worcester Polytechnic Institute		**118,320**	**-**
Harvard Medical School						
DEPARTMENT OF ENERGY	6941697	124163	Design and Discovery of Optically Addressable Spin Qubits	81.049	66,313	-
			Total for Harvard Medical School		**66,313**	**-**

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Washington State University						
DEPARTMENT OF ENERGY	6938562	130616-G003845	UI-ASSIST: US-India collAborative for smart diStribution System wIth STorage	81.122	112,715	-
DEPARTMENT OF ENERGY	6938310	130862-G003801	AGGREGATE: data-driven modeling preserving controllable DER for outage management and resiliency	81.122	126,204	-
			Total for Washington State University		**238,918**	**-**
Harvard University						
DEPARTMENT OF ENERGY	6920743	133512-5028381	Transport and Imaging of Mesoscopic Phenomena in Single and Bilayer Graphene	81.049	418,093	-
DEPARTMENT OF ENERGY	6940259	AGREEMENT NO. 134126-5110101	QPress: Quantum Press for Next-Generation Quantum Information Platforms	81.049	395,269	-
			Total for Harvard University		**813,362**	**-**
Purdue University						
DEPARTMENT OF ENERGY	6939853	14000388-014	Manufacturing of Robust High-Temperature Heat Exchangers	81.087	212,568	-
			Total for Purdue University		**212,568**	**-**
Composite Technology Development, Inc.						
DEPARTMENT OF ENERGY	6934564	16779	Insulation of TSTC for fusion applications	81.049	43,630	-
DEPARTMENT OF ENERGY	6942443	18526	Integrated Insulation-Cooling Systems for Joints for HTS Cables	81.049	45,057	-
			Total for Composite Technology Development, Inc.		**88,687**	**-**
Arizona State University						
DEPARTMENT OF ENERGY	6936487	17-032	DNA Nanostructure Directed Designer Excitonic Networks	81.049	10,061	-
			Total for Arizona State University		**10,061**	**-**
George Washington University						
DEPARTMENT OF ENERGY	6938165	17-S33	Microscale Optimized Solar-Arrays with Integrated Concentration (MOSAIC).	81.135	14,269	-
			Total for George Washington University		**14,269**	**-**
Columbia University						
DEPARTMENT OF ENERGY	6930075	2(GG008553)	Device and Fabrication Technology for the Next Generation of Medium Voltage Vertical Transistors	81.135	67,589	-

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			Total for Columbia University		**67,589**	**-**
Sandia National Laboratories						
DEPARTMENT OF ENERGY	6942032	2080471	Utilization of CR39 on Z for DD Yield, Yield Anisotropies and Neuron Spectroscopy	81.RD	55,305	-
DEPARTMENT OF ENERGY	6938128	AGREEMENT 1340868 / PO 1874220	Frameworks, Algorithms and Scalable Technologies for Mathematics (FASTMath) SciDAC Institute	81.RD	65,214	-
DEPARTMENT OF ENERGY	6941762	PO# 2059856/1340868	Ionic Liquid Ion Source Development and Demonstration for SNL's nanoImplanter	81.RD	31,724	-
DEPARTMENT OF ENERGY	6933745	PO1619650/ CPA1340868	Utilization of CR39 on Z for DD yield, yield anisotropies, and neutron spectroscopy	81.RD	73,152	-
DEPARTMENT OF ENERGY	6942877	PURCHASE ORDER: 2140788	Tools for Correct-by-Construction Hardware and Software in Critical Systems	81.RD	5,489	-
			Total for Sandia National Laboratories		**230,883**	**-**
Mission Support and Test Services LLC						
DEPARTMENT OF ENERGY	6942283	231648	Real-Time Methods for Statistical Image Enhancement	81.RD	71,195	-
			Total for Mission Support and Test Services LLC		**71,195**	**-**
University of Michigan						
DEPARTMENT OF ENERGY	6931203	3003222367	Consortium for Verification Technology (CVT)	81.113	266,537	-
DEPARTMENT OF ENERGY	6943018	PO 3005787040 / SUBK00009794	Consortium for Monitoring, Technology, and Verification	81.113	108,935	-
			Total for University of Michigan		**375,472**	**-**
Brookhaven National Laboratory						
DEPARTMENT OF ENERGY	6934084	312673	Beam Energy Scan Theory Collaboration	81.RD	58,129	-
DEPARTMENT OF ENERGY	6934181	313021	Transverse Momentum Dependent Parton Structure Collaboration	81.RD	17,685	-
DEPARTMENT OF ENERGY	6941361	367289	Superconducting nanowire single-photon detectors	81.RD	50,000	-
DEPARTMENT OF ENERGY	6941332	368338	R&D on the sPHENIX MAPS Vertex Detector upgrade	81.RD	233,503	-
DEPARTMENT OF ENERGY	6938035	NO. 343173	Gas Injection and NMR for a Polarized 3He Ion Source at RHIC	81.RD	32,454	-
DEPARTMENT OF ENERGY	6938641	NO. 347538	Time-resolved imaging of sub-10 nm skyrmions in ferrimagnets and synthetic antiferromagnets	81.RD	36,663	-
DEPARTMENT OF ENERGY	6943088	SUBCONTRACT NO. 380126	R&D on the sPHENIX MAPS Vertex Detector upgrade	81.RD	102,403	-
			Total for Brookhaven National Laboratory		**530,836**	**-**

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University of New Mexico						
DEPARTMENT OF ENERGY	6938242	327075-875J	Bimetallic Composite (Incoloy 800H/Ni-201) Development and Compatibility in Flowing FLiBe as a Molten Salt Reactor (MSR) Structural Material	81.121	42,339	-
			Total for University of New Mexico		**42,339**	**-**
UT- Battelle LLC						
DEPARTMENT OF ENERGY	6933207	4000102892	The Consortium for Advanced Simulation of Light Water Reactors (CASL)	81.RD	745,304	-
DEPARTMENT OF ENERGY	6936739	4000155797	Coupled Monte Carlo Neutronics and Fluid Flow Simulation of Small Modular Reactors (ExaSMR)	81.RD	509,550	-
DEPARTMENT OF ENERGY	6937665	4000158704	Center for Bioenergy Innovation	81.049	237,855	-
DEPARTMENT OF ENERGY	6942828	4000159358	Development of Next Generation Slicing Software for Additive Manufacturing	81.RD	159,830	-
DEPARTMENT OF ENERGY	6938156	4000160305	Optimization of sensor networks for improving climate model predictions	81.RD	88,933	-
DEPARTMENT OF ENERGY	6939467	4000164925	Behavior-Based Metal Additive Manufacturing	81.RD	70,718	-
DEPARTMENT OF ENERGY	6940671	4000169386	The Effects of Temperature on the Propagation of Nuclear Data Uncertainty in Nuclear Criticality Safety Calculations	81.RD	75,435	-
DEPARTMENT OF ENERGY	6941701	4000174269	Machine-Learning-Based Multi-Physics Nuclear Reactor Core Simulations of Molten Salt Reactor	81.RD	24,378	-
DEPARTMENT OF ENERGY	6942904	4000176148	MODELING-ENHANCED INNOVATIONS TRAILBLAZING NUCLEAR ENERGY REINVIGORATION (MEITNER)	81.RD	63,511	-
DEPARTMENT OF ENERGY	6942741	4000177261	Consortium on Coal-based Carbon Materials Manufacturing - Coal-based Separation Membranes	81.RD	164,489	-
DEPARTMENT OF ENERGY	6923222	SUBCONTRACT NO. 4000100452	ITER ECH Transmission Line System: Research and Scientific Support	81.RD	32,027	-
			Total for UT- Battelle LLC		**2,172,030**	**-**
University of Rochester						
DEPARTMENT OF ENERGY	6940700	417532G/ UR FAO GR510907	Nuclear-particle Spectroscopy and Analysis at Omega	81.112	558,262	-
			Total for University of Rochester		**558,262**	**-**
Northeastern University						
DEPARTMENT OF ENERGY	6939896	503036-78052	Design, Control and Application of Next-Generation Qubits	81.049	164,954	-

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			Total for Northeastern University		**164,954**	**-**
Pennsylvania State University						
DEPARTMENT OF ENERGY	6940065	5952-MIT-DOE-1090	Center for Lignocellulose Structure and Formation (CLSF III)	81.049	209,722	-
			Total for Pennsylvania State University		**209,722**	**-**
Ohio State University						
DEPARTMENT OF ENERGY	6936056	60058746	Alloying Agents to Stabilize Lanthanides Against Fuel Cladding Chemical Interaction: Tellurium and Antimony Studies	81.121	18,050	-
			Total for Ohio State University		**18,050**	**-**
State University of New York						
DEPARTMENT OF ENERGY	6930984	68799	EFRC:NorthEast Center for Chemical Energy Storage (NECCES)	81.049	79,017	-
			Total for State University of New York		**79,017**	**-**
University of Wisconsin						
DEPARTMENT OF ENERGY	6935633	704K303	Sodium cooled fast reactor key modeling and analysis for commercial deployment	81.121	-8,095	-
			Total for University of Wisconsin		**-8,095**	**-**
Lawrence Berkeley National Laboratory						
DEPARTMENT OF ENERGY	6941260	7453199	High-Coherence Multilayer Superconducting Structures for Large Scale Qubit Integration and Photonic Transduction	81.RD	94,966	-
DEPARTMENT OF ENERGY	6940535	7457914	Building a Reference-Based Metagenomics Workflow in KBase	81.RD	98,723	-
DEPARTMENT OF ENERGY	6931128	SUBCONTRACT # 7204982	Molecular Determinants of Community Activity, Stability and Ecology (MDCASE)	81.RD	176,040	-
			Total for Lawrence Berkeley National Laboratory		**369,729**	**-**
UChicago Argonne, LLC						
DEPARTMENT OF ENERGY	6941591	8F-30212	Joint Center for Energy Storage Research (JCESR) Renewal Year 1	81.RD	977,251	-
DEPARTMENT OF ENERGY	6941173	9F-60132	Updates and Improvements to the GREET Model	81.RD	53,543	-
DEPARTMENT OF ENERGY	6941696	9F-60227	Pulsed Thermal Tomography Nondestructive Examination of Additively Manufactured Reactor Materials and Components	81.RD	11,241	-

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DEPARTMENT OF ENERGY	6941867	NO. 9F-60231	Advanced characterization of lithium/electrolyte interface	81.RD	104,904	-
DEPARTMENT OF ENERGY	6927797	SUBCONTRACT NO. 3F-31144	Joint Center for Energy Storage Research (JCESR)	81.RD	0	-
DEPARTMENT OF ENERGY	6937302	SUBCONTRACT NO. 7F-30180	Reaction Mechanism Generator (RMG) Software	81.RD	95,078	-
DEPARTMENT OF ENERGY	6934260	WO 2J-30101-0008A	Task 8: Preliminary SAR Review and Conversion Transition Planning for the MITR-II Research Reactor	81.RD	194,611	-
DEPARTMENT OF ENERGY	6941829	WO 2J-30101-0009A	Task 9: LEU Fuel Specification Impact Assessment for the MITR Research Reactor	81.RD	197,352	-
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	84,647	-
			Total for UChicago Argonne, LLC		**1,718,627**	**-**
University of Minnesota						
DEPARTMENT OF ENERGY	6941840	A004527506	Inorganometallic Catalyst Design Center	81.049	133,485	-
			Total for University of Minnesota		**133,485**	**-**
C.A. Goudey & Associates						
DEPARTMENT OF ENERGY	6939174	AGMT DTD 05/01/2018	AUTONOMOUS TOW VESSELS FOR OFFSHORE MACROALGAE FARMING	81.135	7,216	-
			Total for C.A. Goudey & Associates		**7,216**	**-**
Technology Holding, LLC						
DEPARTMENT OF ENERGY	6942038	AGMT DTD 7/1/19	Nanoporous Atomically Thin Membranes for Desalination and Rare Earth Materials Recovery	81.RD	59,997	-
			Total for Technology Holding, LLC		**59,997**	**-**
Adelphi Technology Inc						
DEPARTMENT OF ENERGY	6942781	AGMT EFFECTIVE 1/24/2020	Multiplexing Focusing Analyzer for Efficient Stress-Strain Measurements	81.049	36,343	-
			Total for Adelphi Technology Inc		**36,343**	**-**
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	140,807	-
DEPARTMENT OF ENERGY	6941160	STTR AGMT DTD. 7/1/19	STTR Phase I: Large Volume Plasma Generation for CO2 Processing	81.RD	113,250	-

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DEPARTMENT OF ENERGY	6939061	STTR DTD 07/19/2018	SBIR Phase I: Plasma Control of Combustion Instabilities	81.049	13,788	-
			Total for FGC Plasma Solutions		**267,845**	**-**
Brookhaven Technology Group, Inc.						
DEPARTMENT OF ENERGY	6941954	AGMT. DTD. 09/18/2019	HTS Cable development for the central solenoid of the DEMO fusion reactor	81.049	16,739	-
			Total for Brookhaven Technology Group, Inc.		**16,739**	**-**
Via Separations, LLC						
DEPARTMENT OF ENERGY	6942309	AGMT. DTD. 8/1/19	Scalable Graphene Oxide Membranes for Energy-Efficient Chemical Separations	81.135	296,905	-
			Total for Via Separations, LLC		**296,905**	**-**
Brayton Energy, LLC						
DEPARTMENT OF ENERGY	6940431	AGREEMENT DTD 2/6/19	Reversible Counter-Rotating Turbomachine	81.135	126,549	-
			Total for Brayton Energy, LLC		**126,549**	**-**
Georgia Institute of Technology						
DEPARTMENT OF ENERGY	6942401	AWD-000286-G2	Aerial Intelligence for Retrofit Building Energy Modeling (AirBEM)	81.086	10,062	-
DEPARTMENT OF ENERGY	6942141	AWD-000372-G2	CONSORTIUM FOR ENABLING TECHNOLOGIES & INNOVATION (ETI)	81.113	116,983	-
DEPARTMENT OF ENERGY	6941850	AWD-102458-G1	Real-time Measurements of Complex Transition Metal Oxide Nanostructure Growth	81.049	23,750	-
			Total for Georgia Institute of Technology		**150,795**	**-**
Lawrence Livermore National Security, LLC						
DEPARTMENT OF ENERGY	6933555	B615534	Multi-Nuclear Burn Diagnostic Development	81.RD	-31	-
DEPARTMENT OF ENERGY	6938345	B627203	Microscale biophysical analyses of algal bacterial interactions	81.RD	80,903	-
DEPARTMENT OF ENERGY	6940158	B631377	Chemical Threat Responsive Carbon Nanotube Membranes	81.RD	218,280	-
DEPARTMENT OF ENERGY	6942385	B635598	Design and implementation of the MRSt neutron spectrometer in support of NIF	81.RD	68,404	-
DEPARTMENT OF ENERGY	6943194	B640614	Experimental Studies of High-Velocity Impacts for Micron-Sized Metallic Particles on Metallic Surfaces	81.RD	16,583	-

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DEPARTMENT OF ENERGY	6935266	NO. B620960	Guiding the design of vaccination strategies aimed toward generating broadly neutralizing antibodies against highly mutable pathogens: HIV and Influenza as case studie	81.RD	29,536	-
DEPARTMENT OF ENERGY	6940134	SUBCONTRACT B631595	High Density Implosions on Omega and the NIF	81.RD	233,978	-
			Total for Lawrence Livermore National Security, LLC		**647,652**	**-**
University of Missouri-Columbia						
DEPARTMENT OF ENERGY	6943064	C00069059-2	High quality GaN FETs through transmutation doping and low temperature processing	81.135	23,638	-
			Total for University of Missouri-Columbia		**23,638**	**-**
Battelle-Pacific Northwest Laboratories						
DEPARTMENT OF ENERGY	6943127	CONTRACT #: 517296	Multi-Sector, Multi-Resource Interactions with Multiple Forcers	81.RD	11,451	-
DEPARTMENT OF ENERGY	6943241	CONTRACT NO. 511287	Siting Gen III+ Small Modular Reactor or Gen IV Advanced Reactor Concepts in the Pacific Northwest	81.RD	18,598	-
DEPARTMENT OF ENERGY	6939625	CONTRACT# 428422	Center for Molecular Electrocatalysis	81.RD	241,163	-
DEPARTMENT OF ENERGY	6942932	CONTRACT# 499232	Phonon-mediated Quasiparticles in Superconducting Circuits	81.RD	8,445	-
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	8,492	-
			Total for Battelle-Pacific Northwest Laboratories		**288,149**	**-**
Battelle Energy Alliance, LLC						
DEPARTMENT OF ENERGY	6941423	CONTRACT 112583 - RELEASE #13	LWR CORE ANALYSIS WITH RELAP-7 FLUIDS MODELS	81.RD	109,599	-
DEPARTMENT OF ENERGY	6942785	REL 17 BMC 112583	Development of an Advanced Method for TREAT Modeling and Simulation with Thermal Graphite Model Validation	81.RD	101,264	-
DEPARTMENT OF ENERGY	6937536	RELEASE 14 BMC00112583	Safety Margin Evaluation for Experiment Irradiation in ATR	81.RD	-614	-
DEPARTMENT OF ENERGY	6937503	RELEASE 16 / 00112583	Irradiation of the TREAT LEU Fuel Irradiation Experiment 1 (TIE-1) in MITR	81.RD	-320	-
DEPARTMENT OF ENERGY	6939000	RELEASE 18 / BMC 112583	ATR Experiment Safety Margin Characterization-Recommendations for Implementation	81.RD	177,201	-
DEPARTMENT OF ENERGY	6939943	RELEASE 19 / BMC 112583	Low temperature Electrochemical Activation of Ethane for Co-production of Chemicals/Fuels and Hydrogen	81.RD	46,794	-

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DEPARTMENT OF ENERGY	6940384	RELEASE 20 /BMC 0112583	Advanced Data Acquisition and Simulation with Live Data Supporting VTR Experiments	81.RD	40,326	-
DEPARTMENT OF ENERGY	6941059	RELEASE 21/BMC 0112583	Moving beyond DPA: A new approach for rapidly quantifying radiation damage	81.RD	148,200	-
DEPARTMENT OF ENERGY	6942013	RELEASE 22 /BMC 0112583	Switchable Solvent Water Extraction and Water Softening ? Thermodynamic Modeling	81.RD	79,002	-
			Total for Battelle Energy Alliance, LLC		**701,451**	**-**
Free Form Fibers LLC						
DEPARTMENT OF ENERGY	6938183	DE-SC0011954	SBIR: AN ADDITIVE MANUFACTURING TECHNOLOGY FOR THE FABRICATION AND CHARACTERIZATION OF NUCLEAR REACTOR FUEL	81.049	7,649	-
			Total for Free Form Fibers LLC		**7,649**	**-**
Plasma Processes, LLC						
DEPARTMENT OF ENERGY	6938695	DE-SC0015931 / PO# 1014-002-JK-050218	SBIR Phase II: Additive Manufacture of Tungsten Armored Plasma Facing Components	81.049	86,726	-
DEPARTMENT OF ENERGY	6940880	PO 1015-002-JK-120618	SBIR Phase II: Advanced Metallic-Silicon Carbide Composite Claddings for Improved Damage Tolerance	81.049	107,866	-
			Total for Plasma Processes, LLC		**194,593**	**-**
Tanner Research, Incorporated						
DEPARTMENT OF ENERGY	6941794	DE-SC0019905	Quench Detection Method using MEMS Acoustic Sensor Arrays for Superconducting Magnets (STTR Phase 1)	81.049	50,222	-
			Total for Tanner Research, Incorporated		**50,222**	**-**
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	53,326	-
			Total for University of California-Santa Barbara		**53,326**	**-**
Western Research Institute						
DEPARTMENT OF ENERGY	6938492	MIT17-10G663	Consortium for Production of Affordable Carbon Fibers (CPACF) in the U.S.	81.086	20,748	-
			Total for Western Research Institute		**20,748**	**-**
Honeywell						
DEPARTMENT OF ENERGY	6933853	N000189586	Additive Manufacturing of Porous Solids	81.RD	-2,528	-

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DEPARTMENT OF ENERGY	6940342	PO N000302644	MIT idea PDRD	81.RD	15,052	-
DEPARTMENT OF ENERGY	6942696	PO# N000343525	Porosity controlled additive manufacturing	81.RD	104,892	-
			Total for Honeywell		**117,417**	**-**
Brookhaven Science Associates, LLC						
DEPARTMENT OF ENERGY	6939706	NO. 345800	N3XT: CN-FET logic on (D)RAM Devices	81.RD	45,084	-
			Total for Brookhaven Science Associates, LLC		**45,084**	**-**
National Renewable Energy Laboratory						
DEPARTMENT OF ENERGY	6941550	NO. UGA-0-41029-21	NREL: Lignin-First Biorefinery Development	81.049	73,697	-
DEPARTMENT OF ENERGY	6930868	UGA-0-41029-16/ER392000	Center for Next Generation of Materials by Design: Incorporating Metastablility	81.049	3,010	-
DEPARTMENT OF ENERGY	6942931	UGA-0-41029-22	NREL: Plastics Upcycling Consortium	81.049	24,321	-
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	2,420	-
			Total for National Renewable Energy Laboratory		**103,448**	**-**
Fluor Marine Propulsion						
DEPARTMENT OF ENERGY	6931456	PO 101633	Investigation of Nucleate Boiling Suppression in Annular Flow using Advanced Imaging Diagnostics and CFD Simulations	81.RD	1,200	-
DEPARTMENT OF ENERGY	6942196	PO 135265 / LINE ITEM 1	Effect of surface properties on the two-phase heat transfer and critical heat flux	81.RD	99,738	-
			Total for Fluor Marine Propulsion		**100,938**	**-**
Research Foundation of SUNY-Buffalo						
DEPARTMENT OF ENERGY	6940392	PO R1154215	REDUCING OVERNIGHT CAPITAL COST IN ADVANCED REACTORS USING EQUIPMENT-BASED SEISMIC PROTECTIVE TECHNOLOGIES	81.135	79,317	-
			Total for Research Foundation of SUNY-Buffalo		**79,317**	**-**
General Atomics						
DEPARTMENT OF ENERGY	6937870	PO# 4500071909	AToM: Advanced Tokamak Modeling Environment	81.049	132,819	-
			Total for General Atomics		**132,819**	**-**
Lincoln Laboratory						
DEPARTMENT OF ENERGY	6942991	PO# 7000477965	Advanced Quantum Testbed (AQT)	81.RD	69,094	-

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			Total for Lincoln Laboratory		**69,094**	**-**
Raytheon Technologies Corporation						
DEPARTMENT OF ENERGY	6941044	RESEARCH AGMT 1249042	Hydrogen and Fuel Cell R&S FOA; Topic 1 High Performance Non-PGM Transition Metal Oxide Oxygen Reduction Catalyst for Polymer Electrolyte Membrane Fuel Cells	81.RD	154,758	-
DEPARTMENT OF ENERGY	6940860	RESEARCH AGREEMENT # 2606669	Low-cost Redox-Flow-Battery System with S- and Mn-anion active materials	81.135	218,973	-
			Total for Raytheon Technologies Corporation		**373,731**	**-**
University of Iowa						
DEPARTMENT OF ENERGY	6939845	S00483-01	Foundations of Quantum Computing for Gauge Theories and Quantum Gravity	81.049	118,238	-
			Total for University of Iowa		**118,238**	**-**
Princeton Plasma Physics Laboratory						
DEPARTMENT OF ENERGY	6933435	S014796-H	Transport and Turbulence Physics Studies and Data Analysis Collaboration on NSTX-U	81.RD	0	-
DEPARTMENT OF ENERGY	6937617	S015850-H	Partnership Center for High -fidelity Boundary Plasma Simulation	81.RD	8,498	-
			Total for Princeton Plasma Physics Laboratory		**8,498**	**-**
California Institute of Technology						
DEPARTMENT OF ENERGY	6940104	S399795	Quantum Machine Learning and Quantum Computation Frameworks for HEP (QMLQCF)	81.049	77,055	-
			Total for California Institute of Technology		**77,055**	**-**
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	1,963	-
			Total for University of Massachusetts-Lowell		**1,963**	**-**
University of Arkansas						
DEPARTMENT OF ENERGY	6942737	SA1712153	Cybersecurity Center for Secure Evolvable Energy Delivery Systems (SEEDS)	81.112	51,223	-
			Total for University of Arkansas		**51,223**	**-**
The REMADE Institute						

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DEPARTMENT OF ENERGY	6942536	SA-19-31	Dummy Parent for Identifying Strategies to Maximize Benefit of Fiber Recovery Through Systems Quantification	81.087	35,453	-
			Total for The REMADE Institute		**35,453**	**-**
Faraday Technology, Inc						
DEPARTMENT OF ENERGY	6936670	SC 6305-1031	Microfluidic System for CO2 Reduction to Hydrocarbons	81.049	13,470	-
			Total for Faraday Technology, Inc		**13,470**	**-**
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	13,875	-
			Total for Electroformed Nickel, Inc.		**13,875**	**-**
University of California - Berkeley						
DEPARTMENT OF ENERGY	6937842	SUB#00009635/PO#BB0099 8750	Methods to Predict Thermal Radiation and to Design Scaled Separate and Integral Effects Testing For Molten Salt Reactors	81.121	116,368	-
			Total for University of California - Berkeley		**116,368**	**-**
Princeton University						
DEPARTMENT OF ENERGY	6940086	SUB0000289	Bioinspired Light-Escalated Chemistry (BioLEC)	81.049	163,555	-
			Total for Princeton University		**163,555**	**-**
University of Colorado Boulder						
DEPARTMENT OF ENERGY	6937968	SUBAWARD#: 1555955 PO# 1000976258	Design and Engineering of Synthetic Control Architectures	81.049	521,971	-
			Total for University of Colorado Boulder		**521,971**	**-**
Los Alamos National Security, L.L.C.						
DEPARTMENT OF ENERGY	6934723	SUBCONTRACT #399489	Emergency Control of Power System Networks	81.RD	18,163	-
DEPARTMENT OF ENERGY	6940426	SUBCONTRACT 489270	Thermal Scattering in NJOY21	81.RD	83,376	-
DEPARTMENT OF ENERGY	6940672	SUBCONTRACT NO. 531711	Analysis and Optimization of Parallel Unstructured-Mesh Computations	81.RD	106,492	-
			Total for Los Alamos National Security, L.L.C.		**208,030**	**-**
Yellowstone Energy Inc						

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DEPARTMENT OF ENERGY	6939928	SUBCONTRACT AGMT 01/01/19	NOVEL REACTIVITY CONTROL ROD FOR YELLOWSTONE ENERGY MOLTEN NITRATE SALT REACTOR	81.135	31,401	-
			Total for Yellowstone Energy Inc		**31,401**	**-**
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	102,253	-
			Total for Radiation Monitoring Devices		**102,253**	**-**
Form Energy, Inc.						
DEPARTMENT OF ENERGY	6941805	SUBCONTRACT RESEARCH AGREEMENT DATED 10-24-2019	Aqueous Sulfur Systems for Long-Duration Grid Storage	81.135	83,681	-
			Total for Form Energy, Inc.		**83,681**	**-**
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	90,787	-
			Total for University of Nevada-Reno		**90,787**	**-**
University of Texas - Austin						
DEPARTMENT OF ENERGY	6938299	UTA18-000276	Partnership for Multiscale Gyrokinetic (MGK) Turbulence	81.049	286,686	-
DEPARTMENT OF ENERGY	6940002	UTA18-001328	AEOLUS: Advances in Experimental Design, Optimal Control, and Learning for Uncertain Complex Systems	81.049	145,866	-
			Total for University of Texas - Austin		**432,552**	**-**
University of Washington						
DEPARTMENT OF ENERGY	6937599	UWSC10120	Ultrafast Control of Emerging Electronic Phenomena in 2D Quantum Materials	81.049	147,159	-
			Total for University of Washington		**147,159**	**-**
			TOTAL for Department of Energy		**15,332,665**	**-**

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DEPARTMENT OF HEALTH & HUMAN SERVICES						
Massachusetts General Hospital						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6942258	SUBAWARD# 235212	Using system dynamics to enhance the FDA?s opioids systems model and address the ongoing crisis	93.103	11,735	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6941413	224403	Wald Institute for Innovation in Imaging- (I3)	93.RD	61,229	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6932581	226025	MRI-GENetics Interface Exploration (MRI-GENIE) Study	93.286	41,837	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6942103	227334	Billing Agreement: Chen, Bryan - Clinical and Genetic Analysis of Retinopathy of Prematurity	93.867	57,928	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6939603	228193	Injury-inducible Activation of Cardiomyocyte Proliferation	93.837	-5,774	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6939141	228314	Natural language processing for characterizing psychopathology	93.242	1,168	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6939294	228599	Letter Agreement : Antonie Ramier 070118 -053119	93.286	-282	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6941965	228599/A. RAIMER	Billing Agreement: Antonie Ramier - TRD1: Quantitative Biomechanics Imaging	93.286	7,321	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6941721	228599/ANTOINE RAIMER	Billing Agreement: Antonie Ramier - TRD1: Quantitative Biomechanics Imaging	93.286	3,647	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6942122	228601	Billing Agreement - Taylor Cannon - JulyAugust19-TRD3: Percutaneous and Interstitial Imaging	93.286	1,941	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6939664	228601	Letter Agreement: Szu-Yu Lee 070118 -083118	93.286	-67	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6941726	228601/CANNON	Billing Agreement - Taylor Cannon - Fall20 -TRD3: Percutaneous and Interstitial Imaging	93.286	19,300	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6941725	228601/CANNON	Billing Agreement - Taylor Cannon - June19 -TRD3: Percutaneous and Interstitial Imaging	93.286	967	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6941727	228601/CANNON	Billing Agreement - Taylor Cannon - Spring20 -TRD3: Percutaneous and Interstitial Imaging	93.286	19,300	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6939682	229172	A systems biology approach to fingerprint HIV immune defense in Elite Controllers	93.839	-4	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6942176	229297	Billing Agreement - Paul Dannenberg August 19 - Massive wavelength-division multiplexing and imaging with laser particles	93.310	2,841	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6939663	229297	Letter Agreement: Paul Dannenberg 080118-083118	93.310	-35	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6936861	229297	Letter Agreement: Sangyeon Federick Cho 060117 - 053118	93.310	-6	-

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DEPARTMENT OF HEALTH & HUMAN SERVICES	6939666	229297	Letter Agreement: Sangyeon Federick Cho 080118 - 083118	93.310	-39	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6939659	229297	Letter Agreement: Sangyeon Federick Cho 090118 - 053119 Fall & Spring	93.310	-139	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6942177	229297 - PAUL DANNENBERG	Billing Agreement - Paul Dannenberg Fall 19 - Massive wavelength-division multiplexing and imaging with laser particles	93.310	21,409	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6942178	229297 - PAUL DANNENBERG	Billing Agreement - Paul Dannenberg June&July 19 - Massive wavelength-division multiplexing and imaging with laser particles	93.310	5,681	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6942182	229297 - PAUL DANNENBERG	Billing Agreement - Paul Dannenberg Spring 20 - Massive wavelength-division multiplexing and imaging with laser particles	93.310	19,653	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6935377	229354	Improving Human fMRI through Modeling and Imaging Microvascular Dynamics	93.242	268,254	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6939469	229386	Billing Agreement - Giorgia Grisot Multimodal mapping of the neurocircuitry of the human prefrontal cortex	93.286	-200	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6935622	229428	Filtered point process inference framework for modeling neural data	93.286	122,162	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6935800	229825	Role of miR-222 in pathological hypertrophy and heart failure	93.837	69,388	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6935992	229916	Interfering with the macrophage life cycle in atherosclerosis	93.837	186,145	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6940563	230321	Clinical Research for the Improved Prevention, Diagnosis and Treatment of Vocal Hyperfunction	93.173	155,267	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6941265	230662	Billing Agreement - Mingjian He - Noninvasive Low-cost Biomarkers for Preclinical Diagnosis and Longitudinal Tracking of Alzheimer's Disease Using Sleep and Resting State EEG	93.866	66,856	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6937341	230837	Reengineering obesity-induced abnormal microenvironment to improve PDAC Treatment	93.396	50,195	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6939510	231297	Letter Agreement: John Samuelsson 060118 - 053119	93.286	-231	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6940973	231297/SAMUELSSON	Billing Agreement - John Samuelsson - Device-Independent Acquisition and Real-Time Spatiotemporal Analysis of Clinical Electrophysiology Data	93.286	9,510	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6941252	231409	Billing Agreement - Eli Mattingly - Wald A magnetic particle imager (MOI) for functional brain imaging in humans	93.286	10,976	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6939894	231409	Letter Agreement : Erica Mason - A magnetic particle imager (MOI) for functional brain imaging in humans	93.286	-176	-

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DEPARTMENT OF HEALTH & HUMAN SERVICES	6941756	231409/MASON	Billing Agreement - Erica Mason - A magnetic particle imager (MOI) for functional brain imaging in humans	93.286	32,747	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6937884	231617	An integrated translational approach to overcome drug resistance	93.353	36,570	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6938426	231833	Unique Value of Real Time Shear Stress to Enhance Coronary Disease Management	93.837	42,166	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6940711	232073	MRI Corticography: Developing Next Generation Microscale Human Cortex MRI Scanner - Zijing Dong	93.286	-347	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6942719	232232 (MORALES)	Billing Agreement - Manuel Morales - Multimodal MR-PET Machine Learning Approaches for Primary Prostate Cancer Characterization	93.394	29,836	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6942039	232232/MORALES	Billing Agreement - Manuel Morales - Multimodal MR-PET Machine Learning Approaches for Primary Prostate Cancer Characterization	93.394	24,637	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6942360	232432	Billing Agreement - Alex Shalek & Research Tech - Riley Drake - T Cells in HCV/HIV Co-infection	93.279	44,661	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6938653	232432	T cells in HCV/HIV co-infection	93.279	-15,803	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6939768	232673	Billing Agreement - Olivia Warning Reversal of Immune Failure with Viral Cure in Chronic HCV Infection - Pilot Feasibility Study (Gaiha)	93.855	-165	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6940260	233405	Harnessing Diverse BioInformatic Approaches to Repurpose Drugs for Alzheimers Disease (R01 Resub)	93.866	109,096	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6941972	233481	Combined Cortical and Subcortical Recording and Stimulation as a Circuit-Oriented Treatment for Obsessive-Compulsive Disorder	93.853	28,433	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6940323	233811	Leveraging Artificial Intelligence for the assessment of severity of depressive symptoms	93.242	84,516	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6942728	234408	Determining antigen recognition in systemic sclerosis	93.855	15,212	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6942467	235400	DISCOVERY: Determinants of Incident Stroke Cognitive Outcomes and Vascular Effects on RecoverY	93.853	107,970	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6941742	235663	An integrated translational approach to overcome drug resistance	93.353	102,229	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6943169	236482	Demystifying the antiviral activity of the IgG3+ antibody response	93.855	13,920	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6942485	AGREEMENT 234061/P30DK043351	Bacterial intraspecies variation in the colorectal cancer microenvironment	93.847	2,233	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6937425	SUBAWARD 231183	Parallel Excitation Methods for High Field MRI, NIH, PA-16-160	93.286	219,586	-

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Prime Sponsor Name	Project WBS id	Passthrough Number	WBS Project Name	CFDA #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
DEPARTMENT OF HEALTH & HUMAN SERVICES	6938915	SUBAWARD NO. 230203	Non-Human Primate Studies of Anesthetic Action	93.279	149,691	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6937453	SUBAWARD NO. 231125	Sleep-dependent Memory Processing in Schizophrenia	93.279	80,348	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6942989	SUBAWARD# 235289	Platelet alphaIIbeta3 activation and therapeutic targeting	93.839	15,000	-
			Total for Massachusetts General Hospital		**2,330,293**	**-**
Fred Hutchinson Cancer Research Center						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6941754	00001006276	The Syngenic DNA and uPOET Platform: Overcoming Innate Barriers to Genetic Engineering in Bacteria	93.121	235,030	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6940946	0000997305	The Syngenic DNA and uPOET Platform: Overcoming Innate Barriers to Genetic Engineering in Bacteria	93.121	95,654	-
			Total for Fred Hutchinson Cancer Research Center		**330,684**	**-**
Beth Israel Deaconess Medical Center						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6942508	01027119	Complex function of Hsf1 in breast cancer	93.393	26,000	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6935922	01029400	A Psychobiological Follow-up Study of Transition from Prodrome to Early Psychosis	93.242	-1,628	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6941041	01061188	The development and human translation of Temporal Interference brain stimulation	93.242	296,145	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6942799	1061926	Research Resource for Complex Physiologic Data	93.859	16,567	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6940360	SUBAWARD #01028330	Research, Resource for Complex Physiologic Signals	93.859	86,904	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6940118	SUBAWARD NO. 01060888	A multi-faceted approach to identifying K-Ras synthetic lethal relationships	93.396	49,847	-
			Total for Beth Israel Deaconess Medical Center		**473,835**	**-**
University of California, Los Angeles						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6939958	0125 G VB305	Precision lung cancer therapy design through multiplexed adapter measurement	93.396	96,870	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6941247	1554 G WC474	Molecular Analysis of Host Immune Response in Leprosy	93.855	63,670	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6942046	1554 G XA369	IL-26 in host defense against infection by intracellular bacteria in skin	93.846	66,008	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6942479	2000 G XH151	AN OPEN-SOURCE, WIRELESS, MULTICHANNEL MINIATURIZED MICROSCOPE FOR IMAGING ACTIVITY NEURONAL ACTIVITY	93.853	17,795	-

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Prime Sponsor Name	Project WBS id	Passthrough Number	WBS Project Name	CFDA #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
			Total for University of California, Los Angeles		**244,343**	**-**
Icahn School of Medicine at Mount Sinai						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6939068	0255-8673-4609	High-throughput immunophenotypic analyses of humoral responses in Lyme Disease	93.855	12,666	-
			Total for Icahn School of Medicine at Mount Sinai		**12,666**	**-**
Rutgers University						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6940859	0927 PO#1133368	Biomarkers and Mechanisms of Paucibacillary and Latent Tuberculosis	93.855	45,712	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6941997	1194	Biomarkers and Mechanisms of Paucibacillary and Latent Tuberculosis	93.855	105,022	-
			Total for Rutgers University		**150,733**	**-**
Columbia University						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6934117	1(GG012140)/PO G10545	Analysis of Cancer Cell Metabolism in Diverse Environmental Conditions	93.396	149,564	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6940022	1(GG012741-03)	The role of stem cells and the microenvironment in gastrointestinal cancers	93.393	42,849	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6942747	1(GG012741-04)	The role of stem cells and the microenvironment in gastrointestinal cancers	93.393	35,026	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6941039	2(GG012789-02)	The Role of the Microenvironment in Barrett's Esophagus	93.397	67,701	-
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	12,505	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6940407	PO G13407 1(GG014640)	Distal enhancers controlling motor neuron gene expression program	93.853	118,892	-
			Total for Columbia University		**426,537**	**-**
Tufts Medical Center						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6936291	100107-00004	Embedded Peri-Clinical Research Platform for Accelerated Medical Sensor/Algorithm Evaluation & Translation	93.350	28	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6940174	5014371-SERV/U24TR001609	Johns Hopkins-Tufts Trial Innovation Center	93.350	-1,363	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6942241	5017158-SERV/U24TR001609	Johns Hopkins-Tufts Trial Innovation Center	93.350	63,909	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6939673	PO EP0182273 / 102188-00001-ELAZER_EDELMAN	Clinical and Translational Science Award U54	93.350	837,440	-

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Prime Sponsor Name	Project WBS id	Passthrough Number	WBS Project Name	CFDA #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
			Total for Tufts Medical Center		**900,014**	**-**
Dana Farber Cancer Institute						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6928787	1006718	Antigen Presentation and T Cell Programmimg in Human Autoimmune Diseases	93.855	108,489	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6942023	1040826	Billing Agreement - M. Silva: Development of self-amplifying RNA replicon platforms for effective HIV vaccines	93.398	33,840	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6937438	1225411/PO#1034483	DFHCC SPORE in Prostate Cancer - Project 1	93.397	-107	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6939136	1282101	Targeting immunogenicity to the MPER hinge and C-helix for BNAb elicitation	93.855	29,132	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6939137	1282601	Targeting immunogenicity to the MPER hinge and C-helix for BNAb elicitation-Project 2	93.855	311,811	-
			Total for Dana Farber Cancer Institute		**483,166**	**-**
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	161,773	-
			Total for Oregon Health and Science University		**161,773**	**-**
University of California-San Diego						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6937078	101443667 (PO# S9001920)	Development of siderophore-based vaccines against non-typhoidal Salmonella infection	93.855	127,403	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6936867	91379849 (PO# S9001710)	Infection-homing nanosystems as antibacterial therapeutics-delivery platforms	93.855	180,748	-
			Total for University of California-San Diego		**308,150**	**-**
Tufts University						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6939624	102188-00001-PETER_SZOLOVITS	Tufts Clinical and Translational Science Institute (CTSI)	93.350	68,417	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6942047	103076-00001/NIH113/PO EP0192109	Voltage imaging of astrocyte-neuron interactions	93.853	128,446	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6941426	HH1241	Understanding and designing cyclic peptides	93.859	41,800	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6941442	HH4977	Competing Segment: Models to Predict Protein Biomaterial Performance	93.286	65,042	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6939293	HH4977 / PO# EP0159433	Competing Segment: Models to Predict Protein Biomaterial Performance	93.286	-975	-

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			Total for Tufts University		**302,729**	**-**
Harvard University						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6942742	109786.5110773	Immune Mechanisms of Protection against Mycobacterium Tuberculosis Center (IMPAc-TB)	93.RD	83,380	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6942743	109786.5110775	Immune Mechanisms of Protection against Mycobacterium Tuberculosis Center (IMPAc-TB)	93.RD	257,635	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6939817	132692-5106604	Developmental origins of mental illness: evolution and reversibility	93.242	85,986	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6939767	151577	Molecular Basis of Viral Infectivity	93.855	-1,611	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6941397	151577/ANTONUCCI	'Billing Agreement - Jenna Antonucci - Molecular Basis of viral Infectivity	93.855	42,839	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6939227	164647-5107687	Novel Age-Dependent DNA Modifications	93.866	176,076	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6940320	AGMT DTD 4/11/2019	Syringe Injectable Mesh Electronics for Seamless Integration with the Central Nervous System	93.310	0	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6941561	BILLING AGREEMENT FOR LU MI	Sensory-motor processing in a developing nervous system	93.853	32,947	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6941293	GEORGE_CHAO_152772.0501_FY20	Billing Agreement - Chung-Yun Chao - CEGS CGEO: Center for Genomically Engineered Organs	93.172	63,332	-
			Total for Harvard University		**740,583**	**-**
Harvard School of Public Health						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6942040	111922-5115321	Validating City Scanner: a low-cost mobile air quality platform for cities	93.113	6,218	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6935148	112545-5095784	Safety and Health Management of Hazards Associated with Emerging Technologies	93.143	1,675	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6939891	113098-5109806	Epithelial layer jamming in breast cancer cell migration (Supplement #2)	93.396	17,952	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6939060	113113-5096677	Engineered Nanomaterial Synthesis, Characterization and Method Development Center for Nano-safety Research	93.113	130,485	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6938889	114506-5096447	Powering whole genome sequence-based genetic discovery for common human diseases	93.172	79,853	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6939811	114963-5104790	Optimism and Exceptional Longevity	93.866	0	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6942706	116353-5115592	Demographic and Health Disparities in Recovery from Hurricane Katrina: KATRINA@10	93.865	16,604	-

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DEPARTMENT OF HEALTH & HUMAN SERVICES	6940400	117127-5108050	Multi-Pathway DNA Repair Capacity Measurements in Lung Cancer Patients and Healthy Controls	93.113	7,150	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6941333	117127-5108052	Multi-Pathway DNA Repair Capacity Measurements in Lung Cancer Patients and Healthy Controls	93.113	73,307	-
			Total for Harvard School of Public Health		**333,245**	**-**
Brigham & Women's Hospital						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6939670	112548	Monitoring peripheral blood leukocyte and immune responses in health and disease	93.855	181,648	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6933473	113786	PARP9 and PARP14 in atherosclerosis	93.837	59,136	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6940538	114237	Mucins and immune cell interactions in ovarian cancer pathogenesis & progression	93.396	71,940	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6936292	116900	Macrophage-derived microcalcificaitons	93.837	47,090	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6940370	120368	Neuroimaging Analysis Center	93.286	183,622	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6940533	120780	Systematic unlocking of stem cell differentiation programs	93.351	92,444	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6941991	121535	Pro-inflammatory activation of human macrophages regulated by lncRNAs	93.837	29,009	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6941853	121596	Fluorinated macrocyclic peptides as BBB penetrating agent for improved GBM treatment	93.395	118,080	-
			Total for Brigham & Women's Hospital		**782,969**	**-**
Boston Biomedical Innovation Center						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6935091	115622	Minimally invasive tissue engineered therapies for acute airway injury	93.837	2,553	-
			Total for Boston Biomedical Innovation Center		**2,553**	**-**
Harvard Medical School						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6936632	152448.5079089.0408	Patient - Centered Information Commons	93.866	-35	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6941988	152561.5112601.0002	Elucidation of the role of Creb5 in synovial joint formation	93.846	15,478	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6931022	152754.5068079.0002	Targeting a Novel Regulator of Brain Aging and Alzheimer's Disease	93.866	-307	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6939914	153032.5091220.0402	4D Nucleome Network Data Coordination and Integration Center	93.393	32,885	-

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Prime Sponsor Name	Project WBS id	Passthrough Number	WBS Project Name	CFDA #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
DEPARTMENT OF HEALTH & HUMAN SERVICES	6941917	153032.5091220.0502	4D Nucleome Network Data Coordination and Integration Center	93.393	126,128	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6941419	JANG_2019_153320	Billing Agreement - Min-Young Jang (Megan) - Regulation of Cardiac Development in Health and Disease	93.837	4,693	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6939386	SUBAWARD 152772.5906243.0105	Center for Genomically Engineered Organs	93.172	200,770	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6937980	SUBAWARD NO. 117954	Integrative multi-omic discovery of proximal mechanisms driving age-dependent neurodegeneration	93.866	139,846	-
			Total for Harvard Medical School		**519,458**	**-**
New York University						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6940084	17-A0-00-006701-01	Novel Diagnostics for Glaucoma Structure and Function	93.867	24,333	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6939036	18-A0-00-1001558-01; PO# M190200494	CRCNS: An Integrative Approach for the Study of Hippocampal-Neocortical Memory Coding during Sleep	93.242	318,968	-
			Total for New York University		**343,301**	**-**
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	125,359	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6938652	OSP2016196	Center for Reproducible Neuroimaging Computation (CRNC) - Project 2	93.286	-261	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6939279	OSP2018099/ PO NO.WA01010676	Structural annotation of the human genome	93.172	94,707	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6940496	WA00803340/OSP2016201	Center for Reproducible Neuroimaging Computation (CRNC)	93.286	13,765	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6940498	WA00803347/ OSP2016196	Center for Reproducible Neuroimaging Computation (CRNC) - Project 2	93.286	92,321	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6942854	WA00973155/OSP2016201	Center for Reproducible Neuroimaging Computation (CRNC)	93.286	8,132	-
			Total for University of Massachusetts		**334,023**	**-**
Cornell University						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6941608	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	247,114	-
			Total for Cornell University		**247,114**	**-**
Research Foundation of SUNY-Albany						

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DEPARTMENT OF HEALTH & HUMAN SERVICES	6938950	19-23-80301	Transational Control of ROS Management	93.113	204,994	-
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	221,902	-
			Total for Research Foundation of SUNY-Albany		**426,896**	**-**
Health Resources in Action						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6937415	1R25OD023756	LEAH-Knox Scholars Program in Biomedical Research	93.859	26,019	-
			Total for Health Resources in Action		**26,019**	**-**
SaferMed, LLC						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6941956	1R41LM013050-01	Using Advanced Natural Language Processing to Facilitate Documentation of Meaningful Use and Quality Payment Compliance	93.879	89,758	-
			Total for SaferMed, LLC		**89,758**	**-**
Johns Hopkins University						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6939792	2004089323	CRCNS: MOVE!-MOdeling of fast moVement for Enhancement via neuroprosthetics YR 1	93.853	22,425	-
			Total for Johns Hopkins University		**22,425**	**-**
University of California						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6941042	2016-3340	From structure to therapy: the TRiC Chaperonin network in Huntington's disease	93.855	167,881	-
			Total for University of California		**167,881**	**-**
Allen Institute for Brain Science						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6937894	2017-0572 PO# AIP044827	A comprehensive whole-brain atlas of cell types in the mouse	93.242	104,445	-
			Total for Allen Institute for Brain Science		**104,445**	**-**
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	58,809	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6938822	SUBAWARD NO. 2014-3129	Neuron and Glial cellular signatures from normal and diseased iPS cells	93.853	400,390	-

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			Total for University of California - Irvine		**459,199**	**-**
La Jolla Institute for Allergy and Immunology						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6940706	22496-33-382	Maximizing germinal centers and somatic hypermutation to HIV Env immunogens	93.855	121,846	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6942060	27909-01-133-408	Consortium for Immunotherapeutics against Emerging Viral Threats	93.855	81,368	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6943342	27909-02-133-408	Consortium for Immunotherapeutics against Emerging Viral Threats	93.855	9,542	-
			Total for La Jolla Institute for Allergy and Immunology		**212,756**	**-**
Board of Regents of the University System of Georgia						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6940330	30835-62	Cholera toxin, microbiome and obesity	93.847	52,639	-
			Total for Board of Regents of the University System of Georgia		**52,639**	**-**
Augusta University						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6942168	31733-2	Hydrogel probes for stereotaxic injection	93.847	58,344	-
			Total for Augusta University		**58,344**	**-**
University of Kentucky						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6938783	3200001830-18-315	Inflammation in human obesity and type 2 diabetes	93.847	119,962	-
			Total for University of Kentucky		**119,962**	**-**
University of Louisiana at Lafayette						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6941981	330185-01	HIVRAD Project: Defense-in-depth against mucosal HIV clade C invasion	93.855	391,074	-
			Total for University of Louisiana at Lafayette		**391,074**	**-**
University of Connecticut						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6941937	357361	Inhibition of Translesion Synthesis as a Novel Strategy for Cancer Chemotherapy	93.395	100,963	-
			Total for University of Connecticut		**100,963**	**-**
McLean Hospital						

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DEPARTMENT OF HEALTH & HUMAN SERVICES	6943086	401663	Novel Treatment Targets For Affective Disorders Through Cross-Species Investigation of Approach/Avoidance Decision Making	93.242	103,958	-
			Total for McLean Hospital		**103,958**	**-**
National Bureau of Economic Research, Inc.						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6941651	4117B.MIT	Determinants of Medical Spending for the Elderly: Insurance, Patents, Providers	93.866	309,669	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6940132	4126B.MIT	What Does Health Insurance Do? Evidence from the Oregon Health Insurance Lottery	93.866	218,343	-
			Total for National Bureau of Economic Research, Inc.		**528,012**	**-**
University of Rochester						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6940288	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	-16,704	-
			Total for University of Rochester		**-16,704**	**-**
Boston University						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6933002	4500001922	Engineering Multicellular Tissue Structure, Function, and Vascularization	93.286	71,482	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6939954	4500002883	MRI, Genetic and Cognitive Precursors of AD & Dementia	93.866	65,735	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6940789	4500003010	Functional reorganization of the language and domain-general multiple demand systems in aphasia	93.173	428,242	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6939502	50203805.2	Letter Agreement : Hyun Ho Greco Song 060118-053119	93.286	-336	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6939543	50204332	Billing Agreement - Shoshana Das Mechanoelectrical Interactions Between Cardiac Myofibroblasts and Myocytes	93.837	-27	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6939758	50204332.2	Billing Agreement - Shoshana Das Mechanoelectrical Interactions Between Cardiac Myofibroblasts and Myocytes	93.837	-99	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6941421	50204332/SHOSHANA DAS	Billing Agreement - Shoshana Das - Mechanoelectrical Interactions Between Cardiac Myofibroblasts and Myocytes	93.837	20,073	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6938063	SUBAWARD NO.4500002555	Integrated compressive sensing microscope for high-speed biological imaging	93.867	-37,630	-
			Total for Boston University		**547,440**	**-**

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The Broad Institute, Inc.						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6942491	50000651-5500001353	Innovative technologies to transform antibiotic discovery - Administrative Core	93.855	9,174	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6942487	50000652-5500001352	Genomic applications to transform Gram-negative Abx discovery	93.855	36,936	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6942539	50000655-5500001351	Infection site-specific activation and amplification of antimicrobial peptide activity	93.855	373,619	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6939401	5000094-5500000814	SYSTEMATIC IDENTIFICATION OF ONCOGENIC KRAS SYNTHETIC LETHAL INTERACTIONS	93.396	54,130	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6942540	5000651-550000135	Infection site-specific activation and amplification of antimicrobial peptide activity	93.855	117,487	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6930971	5610221-5500000694	There and Back Again: Epigenetic	93.310	0	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6939273	5610225-5500000694	There and Back Again: Epigenetic	93.310	-42,283	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6941603	5610226-5500000694	There and Back Again: Epigenetic	93.310	296,523	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6940011	5610227-5500001212	Deciphering the Role of Kinase Signaling and Epigenetic States in a Down Syndrome Model of Alzheimer's Disease	93.310	167,061	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6940346	5700171-5500000731	RNA based diagnostics for rapid pathogen identification and drug resistance	93.855	79,676	-
			Total for The Broad Institute, Inc.		**1,092,322**	**-**
Northeastern University						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6933466	500449-78050	Predictability in Complex Object Control	93.865	113,331	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6935020	500489-78051	GuMI: New In Vitro Platforms to Parse the Human Gut Epithelial-Microbiome-Immune Axis	93.286	275,887	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6935732	500514-78051	Quantification of Predictive Motor Impairments in Individuals with ASD	93.865	1,753	-
			Total for Northeastern University		**390,970**	**-**
The Scripps Research Institute						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6938407	5-53517	The Consortium for Viral Systems Biology (CViSB)	93.855	0	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6938790	5-53702	S-Nitrosylation-induced posttranslational modification and aberrant cell signaling in sporadic Alzheimer's disease	93.866	-167	-

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DEPARTMENT OF HEALTH & HUMAN SERVICES	6941161	5-53703	S-Nitrosylation-induced posttranslational modification and aberrant cell signaling in sporadic Alzheimer's disease	93.866	135,881	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6938990	5-53735	CHAVI-ID: Research Focus 2	93.855	31,233	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6940241	5-53937	The Consortium for Viral Systems Biology (CViSB)	93.855	56,020	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6941210	5-54020	Consortia for HIV/AIDS Vaccine Development (CHAVD) RFA-AI-18-001	93.855	774,662	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6942561	5-54180	The Consortium for Viral Systems Biology (CViSB)	93.855	3,046	-
			Total for The Scripps Research Institute		**1,000,675**	**-**
University of Pennsylvania						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6938240	573341	Recording Neural Activities onto DNA	93.242	-319	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6940083	SUB #565369 / PO# PO# TO 4201790	A vascularized three-dimensional biomimetic for islet function and physiology	93.847	-476	-
			Total for University of Pennsylvania		**-795**	**-**
Northwestern University						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6941366	60039739 MIT	Spatio-temporal organization of chromatin and information transfer in cancer	93.397	72,540	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6940198	60047352 MIT	Bayesian Generative Methods for Extracting and Modeling Relations in EHR Narratives	93.879	-2,899	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6940249	SP0046269-PROJ001311	Whole-brain recording into nucleic acids using template-independent polymerases	93.853	198,044	-
			Total for Northwestern University		**267,685**	**-**
Ohio State University						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6938231	60064327-MIT; PO RF01508164	A model-based examination of behavioral and social science workforce: Improving health outcomes	93.859	41,079	-
			Total for Ohio State University		**41,079**	**-**
Stanford University						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6940874	62106626-28291	Project 1 - Influenza responses and repertoire in vaccination, infection and tonsil organoids	93.855	8,151	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6942127	62196377-28291	Influenza responses and repertoire in vaccination, infection and tonsil organoids	93.855	88,112	-

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			Total for Stanford University		**96,262**	**-**
Cold Spring Harbor Laboratory						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6939604	64580127/PO# 921003-SV	A High Resolution Cell Type Atlas of the Mouse Forebrain.	93.242	219,088	-
			Total for Cold Spring Harbor Laboratory		**219,088**	**-**
Physical Sciences, Incorporated						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6940787	82883-1981-45	Dual-channel sub-millisecond resolution neural imaging system	93.242	60,396	-
			Total for Physical Sciences, Incorporated		**60,396**	**-**
University of California - San Francisco						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6932939	8943SC	Balanced Signaling Cues to Guide Cell Transitions in the Blood Lineage Continuum	93.839	57,804	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6934999	9574SC	PROJECT 1: Defining the unique properties of the distinct signaling machinery used by TCR	93.855	181,318	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6935000	9583SC	PROJECT 2: Defining the unique properties of the distinct signaling machinery used by TCR	93.855	73,724	-
			Total for University of California - San Francisco		**312,845**	**-**
University of Southern California						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6939012	96266729 ; REFERENCE 105553021	Anatomical characterization of neuronal cell types of the mouse brain	93.242	80,867	-
			Total for University of Southern California		**80,867**	**-**
University of Minnesota						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6937571	A006079901	Robotic platform for high-density in vivo intracellular recording from mammalian circuits	93.853	-4,599	-
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	144,908	-
			Total for University of Minnesota		**140,309**	**-**
Duke University						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6942128	A032777	Project 3: Chemical Probe Discovery for PAX3-FOXO1	93.393	61,707	-
			Total for Duke University		**61,707**	**-**

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University of California/Davis						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6939140	A18-0226-S002	Facile Synthesis of Microbial Polysaccharides	93.310	251,942	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6940652	A19-1044-S004	Recombinant Immunolabels for Nanoprecise Brain Mapping Across Scales	93.853	79,347	-
			Total for University of California/Davis		**331,289**	**-**
Novopyxis, Inc.						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6940061	AGMT DTD 11/29/2018	SBIR Phase I: Droplette: A Platform Technology to Deliver Nucleic Acid Therapeutics Deep into Tissue for the Treatment of Epidermolysis Bullosa and Other Genetic Diseases	93.286	12,939	-
			Total for Novopyxis, Inc.		**12,939**	**-**
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	151,682	-
			Total for Praevium Research Inc.		**151,682**	**-**
Superconducting Systems, Inc.						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6938777	AGMT. DTD. 9/22/15	Compact light weight superconducting bending magnets for gantries	93.395	121	-
			Total for Superconducting Systems, Inc.		**121**	**-**
Rectify Pharmaceuticals LLC						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6941235	AGREEMENT DATED 04/01/2019	STTR Phase I: Establishing a structural and mechanistic foundation for drug discovery: The ABCA4 transporter in Stargardt's Disease and other retinopathies	93.867	84,240	-
			Total for Rectify Pharmaceuticals LLC		**84,240**	**-**
LeafLabs, LLC						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6938518	AGREEMENT DATED 9/21/17	Ultra-high channel count electrophysiology and data processing for freely-moving animals	93.242	-56,067	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6941266	AGREEMENT DTD 09/13/2018	Toward Automated Spike Sorting via Ground Truth Neural Recordings	93.242	221,614	-
			Total for LeafLabs, LLC		**165,547**	**-**
Tissuevision Inc						

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DEPARTMENT OF HEALTH & HUMAN SERVICES	6941263	AGREEMENT DTD 9/15/2017	The Development of a Resonant Scanning MMM system for high resolution 3D CNS imaging	93.242	152,161	-
			Total for Tissuevision Inc		**152,161**	**-**
University of Pittsburgh						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6943008	AWD00001777 (133980-1)	Motor cortical signaling of impedance during manipulation	93.853	18,455	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6939246	CNVA0060623 (131345-1)	Neural Encoding of Impedance for Object Manipulation	93.853	30,299	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6933995	NO. 0048768 (127337-1)	Spatial Segregation of Cell Functioning During Motility	93.859	1,642	-
			Total for University of Pittsburgh		**50,397**	**-**
University of Chicago						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6941935	AWD100339 (SUB00000090)	The Organization Hub and Web Portal for the 4D Nucleome Network	93.393	50,967	-
			Total for University of Chicago		**50,967**	**-**
University of Kansas						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6935990	FY2017-077	Microfluidic Integrative Circulating miRNA Profiling for Cancer Diagnosis	93.286	46,122	-
			Total for University of Kansas		**46,122**	**-**
Children's Hospital Boston						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6938552	GENFD0001442726	Advanced Fetal Imaging	93.286	165,676	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6939784	GENFD0001538557	Novel Biologic Therapies for BMT: Mechanistic Evaluation in Rhesus Macaques	93.839	123,937	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6939961	GENFD0001548986	Noninvasive Realtime Assessment of Placental Structure and Function with Novel MR Imaging Methods	93.865	54,939	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6939964	GENFD0001552721	Customized stem cells for clinical application in blood disorders	93.847	13,948	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6939366	GENFD0001722202	Morphology-based forward genetic screens of mammalian cells through integration of Cas9 mutagenesis and image-based cell sorting	93.865	125,737	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6942423	GENFD0001734192	Novel MRI Assessment of Placental Structure and Function Throughout Pregnancy	93.865	164,203	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6941969	PO#0000704243	Gastrointestinal Microflora Changes in Children Treated with Proton Pump	93.847	33,301	-

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			Total for Children's Hospital Boston		**681,741**	**-**
Yale University						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6935083	GK000523 (CON-80000585)	Dynamic Neuroimmune Profiling in Patients with Acute Intracerebral Hemorrhage.	93.853	42,259	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6937723	GR100963(CON-80001033)	Costimulatory Mechanisms of Autoimmunity	93.866	21,853	-
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	12,937	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6940272	M17A12653(A10974)	Systems Immune Profiling of Divergent Responses to Infection	93.855	110,284	-
			Total for Yale University		**187,332**	**-**
Janssen Vaccines & Prevention B.V.						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6936202	HHSN272200800056C	Phenotypic and transcriptomic correlates of immunity for filovirus vaccination	93.RD	25,289	-
			Total for Janssen Vaccines & Prevention B.V.		**25,289**	**-**
Mayo Clinic Rochester						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6939581	MAS-228292 PO#65353103	The Mayo GBM Xenograft National Resource	93.853	96,211	-
			Total for Mayo Clinic Rochester		**96,211**	**-**
European Bioinformatics Institute						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6941340	MIT-2582-04	GENCODE: comprehensive genome annotation for human and mouse	93.172	178,726	-
			Total for European Bioinformatics Institute		**178,726**	**-**
University of Massachusetts Medical Center						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6939645	OSP2018125	Develop combinatorial non-viral and viral CRISPR delivery for lung diseases	93.310	236,301	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6942714	WA00540618/OSP2017186	EDAC: ENCODE Data Analysis Center	93.172	145,359	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6939744	WA00753477/ OSP2017050	Center for 3D Structure and Physics of the Genome	93.310	34,443	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6933357	WA00753479/OSP2017052	Center for 3D Structure and Physics of the Genome	93.310	11,040	-

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DEPARTMENT OF HEALTH & HUMAN SERVICES	6940335	WA00805796/OSP2017186	EDAC: ENCODE Data Analysis Center	93.172	234,273	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6941781	WA00904156/OSP2017050	Center for 3D Structure and Physics of the Genome	93.310	356,375	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6942030	WA00904158/OPS2017052	Center for 3D Structure and Physics of the Genome	93.310	70,677	-
			Total for University of Massachusetts Medical Center		**1,088,468**	**-**
Texas Biomedical Research Institute						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6939522	PO 39803	Defense-in-depth against mucosal HIV clade C invasion	93.855	6,040	-
			Total for Texas Biomedical Research Institute		**6,040**	**-**
University of Maryland						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6942722	PO#1000001612/SUBAWARD F201577-1	Internal Dynamics of the Postsynaptic Density	93.242	43,794	-
			Total for University of Maryland		**43,794**	**-**
University of Florida						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6933008	PRIME 00124227, SUB UFDSP00010950	Complex Modifications of tRNA: Regulatory Roles and Crosstalk with DNA Metabolism	93.859	31,882	-
			Total for University of Florida		**31,882**	**-**
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	11,344	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6942257	SUBAWARD NO. R1333	Causes and Consequences of Healthcare Efficiency	93.866	21,793	-
			Total for Dartmouth College		**33,138**	**-**
Michigan State University						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6939973	RC109146MIT	Dynamic Imaging of EMT in the Breast Cancer Microenvironment	93.396	508	-
			Total for Michigan State University		**508**	**-**
University of California-Riverside						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6939893	S-001090	RAPs-mediated post-transcriptional control in Apicomplexan parasites	93.855	210,904	-
			Total for University of California-Riverside		**210,904**	**-**

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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	106,156	-
			Total for DeNovX, LLC		**106,156**	**-**
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	102	-
			Total for Somagenics, Inc.		**102**	**-**
Integrated Laboratory Systems, Inc.						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6939579	SUB UNDER U44ES024698	SBIR Phase II: CometChip: Novel Advances in Throughput and Capacity for the in vivo Comet Assay	93.113	227,432	-
			Total for Integrated Laboratory Systems, Inc.		**227,432**	**-**
CREARE, Incorporated						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6940410	SUB# S633 / PO# 99163	Lab Drone Phase II	93.RD	49,933	-
			Total for CREARE, Incorporated		**49,933**	**-**
Brown University						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6937534	SUBAWARD 00000624	Multiscale Modeling of Sickle Cell Anemia: Methods and Validation	93.839	-40,814	-
			Total for Brown University		**-40,814**	**-**
University of Michigan						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6934493	SUBAWARD NO. 3004053346	An Accessible Toolbox for Comprehensive Analysis of Neural Tissue Architecture	93.242	-2,212	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6938961	SUBK00009075 / PO#3005013133	Analysis and Characterization of Trauma-Induced Coagulopathy	93.839	-1,883	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6939952	SUBK00010385	Duffy Antigen Receptor for Cytokines and Early IL-8 Mediated Neurophil Responses to Coagulation in Major Trauma-Project 1	93.839	0	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6939963	SUBK00010396	Human Neutrophil Elastase as a Mediator of Fibrinolysis Shutdown (Pilot 2)	93.839	-336	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6941388	SUBK00011520	Analysis and Characterization of Trauma-Induced Coagulopathy	93.839	39,405	-
			Total for University of Michigan		**34,974**	**-**

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Massachusetts Eye and Ear Infirmary						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6940820	SUBAWARD NO. 530673	Implantable Microphones for Fully Implantable Hearing Prosthetics	93.865	114,193	-
			Total for Massachusetts Eye and Ear Infirmary		**114,193**	**-**
University of Connecticut Health Center						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6942557	UCHC7-115886049	A Comprehensive Functional Map of Human Protein-RNA Interactions	93.172	201,481	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6940351	UCHC7-115886049 - CORE# 500785	A Comprehensive Functional Map of Human Protein-RNA Interactions	93.172	312,609	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6940350	UCHC7-115886049 - CORE# 500786	A Comprehensive Functional Map of Human Protein-RNA Interactions	93.172	26,470	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6940352	UCHC7-115886049- CORE# 500784	A Comprehensive Functional Map of Human Protein-RNA Interactions	93.172	30,584	-
			Total for University of Connecticut Health Center		**571,144**	**-**
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	55,333	-
			Total for University of Texas - Austin		**55,333**	**-**
Vanderbilt University Medical Center						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6938922	VUMC 36112	Etiologic Studies of Gastric Carcinoma	93.393	98,255	-
			Total for Vanderbilt University Medical Center		**98,255**	**-**
Vanderbilt University						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6941961	VUMC77355	The role of distinct cancer stem cell populations in colorectal cancer	93.397	107,335	-
			Total for Vanderbilt University		**107,335**	**-**
			TOTAL for Department of Health & Human Services		**21,540,187**	**-**

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DEPARTMENT OF HOMELAND SECURITY						
CNA						
DEPARTMENT OF HOMELAND SECURITY	6942078	19-MIT-9-1478-MSTR	FEMA LCSC - Project Management Support	97.RD	8,428	-
DEPARTMENT OF HOMELAND SECURITY	6942075	PO-0023764/PROJECT NO. 1487.0001.D849.00	FEMA LCSC - Project Management Support	97.RD	14,073	-
DEPARTMENT OF HOMELAND SECURITY	6942076	PO-0023790/PROJECT NO. 1487.0002.D865.00	FEMA LCSC - Project Management Support	97.RD	27,984	-
DEPARTMENT OF HOMELAND SECURITY	6942077	PO-0023838/PROJECT NO. 1487.0003.D875.00	FEMA LCSC - Project Management Support	97.RD	8,337	-
DEPARTMENT OF HOMELAND SECURITY	6942847	PO-0024040/1487.0005.D012.00	FEMA LCSC - Project Management Support	97.RD	7,122	-
DEPARTMENT OF HOMELAND SECURITY	6942846	PO-0024040/1487.0006.D015.00	FEMA LCSC - Project Management Support	97.RD	15,030	-
DEPARTMENT OF HOMELAND SECURITY	6943012	PO-0024108/1487.0007.E068.00	FEMA LCSC - Project Management Support	97.RD	6,971	-
DEPARTMENT OF HOMELAND SECURITY	6943159	PO-0024126/1487.0008.E083.00	FEMA LCSC - Project Management Support	97.RD	7,747	-
DEPARTMENT OF HOMELAND SECURITY	6943136	PO-0024147/1487.0009.E088.00	FEMA LCSC - Project Management Support	97.RD	7,888	-
DEPARTMENT OF HOMELAND SECURITY	6943284	PO-0024167/1487.0010.E100.00	FEMA LCSC - Project Management Support	97.RD	7,132	-
			Total for CNA		**110,712**	**-**
National Academy of Sciences						
DEPARTMENT OF HOMELAND SECURITY	6939596	2000009447	Post-Hurricane Supply Chain Adaptability Study	97.RD	271,384	-
			Total for National Academy of Sciences		**271,384**	**-**
Lincoln Laboratory						
DEPARTMENT OF HOMELAND SECURITY	6937248	PO# 7000397469	Alternatives for FEMA Disaster-Related Housing Assistance	97.RD	1,547	-
DEPARTMENT OF HOMELAND SECURITY	6942362	PO# 7000398589 / LETTER NO. 16-C-17-0691	Alternatives for FEMA Disaster-Related Housing Assistance	12.RD	384,832	-
			Total for Lincoln Laboratory		**386,380**	**-**
			TOTAL for Department of Homeland Security		**768,476**	**-**

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Prime Sponsor Name	Project WBS id	Passthrough Number	WBS Project Name	CFDA #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
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	36,017	-
			Total for Boston University		**36,017**	**-**
University of Maryland						
DEPARTMENT OF TRANSPORTATION	6941839	80895-Z9411201	Analysis of Trajectory-Based Operations	20.RD	56,832	-
			Total for University of Maryland		**56,832**	**-**
University of Maryland - College Park						
DEPARTMENT OF TRANSPORTATION	6942235	80927-Z9421201	Future Climate Scenarios for Runway Length	20.RD	61,751	-
			Total for University of Maryland - College Park		**61,751**	**-**
General Electric Company						
DEPARTMENT OF TRANSPORTATION	6940636	PO 401138496	Design and Evaluation of a Robust Manual Locomotive Operating Mode	20.RD	115,366	-
			Total for General Electric Company		**115,366**	**-**
			TOTAL for Department of Transportation		**269,967**	**-**

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Prime Sponsor Name	Project WBS id	Passthrough Number	WBS Project Name	CFDA #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
MISCELLANEOUS FEDERAL GOVT						
University of California-San Diego						
MISCELLANEOUS FEDERAL GOVT	6940175	111438341	Nonequilibrium Order Parameter Optoelectronics for Quantum Information Processing (NOPO-QuIP)	12.910	236,249	-
			Total for University of California-San Diego		**236,249**	**-**
Southern California Earthquake Center						
MISCELLANEOUS FEDERAL GOVT	6941354	118062439	SCEC5 Year 3 Research Collaboration at Massachusetts Institute of Technology	15.807	57,985	-
MISCELLANEOUS FEDERAL GOVT	6943330	131436291	Update of operational GNSS products and development of integrated products for the GCM	15.807	12,757	-
			Total for Southern California Earthquake Center		**70,742**	**-**
Purdue University						
MISCELLANEOUS FEDERAL GOVT	6940314	15200066-022	MCOQA: Mechanically-driven, COherence-enhanced Quantum Angle	12.910	192,882	-
			Total for Purdue University		**192,882**	**-**
Dynamic Object Language Labs, Inc.						
MISCELLANEOUS FEDERAL GOVT	6939149	AGREEMENT EFF. 07/01/2016	STTR Phase II: Context-driven Active-Sensing for Repair Tasks (CART)	12.RD	9,999	-
			Total for Dynamic Object Language Labs, Inc.		**9,999**	**-**
Harvard University						
MISCELLANEOUS FEDERAL GOVT	6942314	100866-5112734	Raskin Welfare Reform: Transition to Electronic Distributions	98.001	89,171	-
			Total for Harvard University		**89,171**	**-**
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	312,702	-
			Total for Harvard School of Public Health		**312,702**	**-**
Boston College						
MISCELLANEOUS FEDERAL GOVT	6940752	5107171-S3	Are New Technologies Associated with Creative Destruction of Human Capital? Evidence from Patents Linked with Administrative Earnings Data	96.007	37,589	-

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			Total for Boston College		**37,589**	**-**
Middlesex County						
MISCELLANEOUS FEDERAL GOVT	6938232	AGMT. DTD. 04/02/18	Justice and Mental Health Collaboration	16.745	11	-
			Total for Middlesex County		**11**	**-**
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	33,524	-
			Total for Yale University		**33,524**	**-**
Institut Teknologi Bandung (ITB)						
MISCELLANEOUS FEDERAL GOVT	6940627	IIE00000078-ITB-1	Mechanical Integrity of Electric Vehicle Battery Packs	98.001	149,835	-
			Total for Institut Teknologi Bandung (ITB)		**149,835**	**-**
FORS MARSH GROUP LLC						
MISCELLANEOUS FEDERAL GOVT	6939292	MIT1801	Improving the Collection and Reporting of Election Administration Data	90.RD	3,842	-
			Total for FORS MARSH GROUP LLC		**3,842**	**-**
RTI International						
MISCELLANEOUS FEDERAL GOVT	6941367	SUB NUM 6-312-0216377-65512	Modeling the Economy and the Electricity Sector to Support EPA's Air Regulation	66.RD	255,552	-
			Total for RTI International		**255,552**	**-**
National Academy of Sciences						
MISCELLANEOUS FEDERAL GOVT	6938265	SUBAWARD 2000009130	Water Desalination Using Solar-Powered Capacitive Deionization Technology and Abundant Natural Resources	98.001	72,132	-
			Total for National Academy of Sciences		**72,132**	**-**
			TOTAL for Miscellaneous Federal Govt		**1,464,231**	**-**

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NATIONAL AERONAUTICS AND SPACE ADMINISTRATION						
Brown University						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6930189	00000677	SSERVI: Environment and Evolution of Exploration Destinations: Science and Engineering Synergism	43.001	33,448	-
			Total for Brown University		**33,448**	**-**
University of California - Berkeley						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6935635	00009378	High-Order Methods for Fluid Structure Interaction	43.002	54,517	-
			Total for University of California - Berkeley		**54,517**	**-**
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	105,955	-
			Total for University of Illinois-Urbana Champaign		**105,955**	**-**
Purdue University						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6935856	12000179-009	Constraining lunar crater saturation by modeling GRAIL porosity	43.001	124,475	-
			Total for Purdue University		**124,475**	**-**
Applied Physics Lab of Johns Hopkins						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6931748	126755	Research Opportunities in Space and Earth Sciences 2014	43.001	16,012	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6939800	130359	Europa Imaging System (EIS)	43.RD	40,371	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6941599	158669	Dragonfly	43.RD	16,247	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6936841	SUBAWARD 141711	Anatomy of tori: comparing the extremes demonstrated by Jupiter's and Saturn's Magnetospheres	43.001	33,206	-
			Total for Applied Physics Lab of Johns Hopkins		**105,836**	**-**
CalTech - Jet Propulsion Lab						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6899758	1283622	Voyager Interstellar Mission (VIM) Plasma Science	43.RD	362,825	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6932364	1532689	EUROPA - MISE Co-I Subcontract	43.RD	24,058	-

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NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6941778	1633043	UNVEILING THE ACCRETION PHYSICS AND GEOMETRY IN OAO 1657-415 WITH NuSTAR (4181)	43.001	5,933	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6936100	CREI 1572041	ECCO: Understanding Sea Level, Ice, and Earth's Climate	43.RD	267,086	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6936482	CREI 1576768	Psyche - JPL	43.RD	451,277	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6940477	CREI 1623249	Theory of thermal transport in nanocomposite materials	43.RD	30,580	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6942894	CREI 1648973	Theory of thermal transport in nanocomposite materials	43.001	16,929	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6940961	CREI1628175	MIT-JPL EDU	43.001	70,382	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6935834	RSA 1569352	Red worlds: Spitzer exploration of a compact system of temperate terrestrial planets transiting a nearby Jupiter-sized star	43.RD	105	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6937443	RSA 1584272	Critical Support Data for Triton Atmosphere Study	43.RD	-14	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6940268	RSA 1610091	Initial RV Follow-up Of NASA's TESS-Discovered Exoplanets (Keck 2018 RSA 1610091)	43.001	11,664	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6939413	RSA 1611947	Radial Velocity Confirmation of K2 Warm Jupiter Candidates (PID 24/2018B_N160)	43.RD	12,023	-
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	31,304	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6939828	RSA 1615555	Integration of superconducting detectors and CMOS optical modulators for scalable cryogenic readout	43.001	16,963	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6940456	RSA 1626219	Photometric Performance Validation for the ASTERIA Space Telescope	43.RD	26,527	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6939724	RSA NO. 1613943	INVESTIGATION ON FAIRALL 51 WITH NUSTAR AND CHANDRA/HETG (NuStar 4107)	43.RD	5,809	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6941403	RSA NO. 1630194	Consortium on Ultracold Atoms in Space - Year 7	43.001	75,327	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6941992	RSA NO. 1640511	Scientific and mentoring opportunities with ASTERIA exoplanet observations	43.001	40,586	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6942464	RSA NO. 1640749	Alternative Methods for Acceleration of Wavefront Control Computation for Large Space Telescopes	43.001	5,087	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6942200	RSA NO. 1640773	A Molecular Clock Architecture for Deep Space Inter-SmallSat Radio Occultation	43.001	9,381	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6942135	RSA NO. 1642646	Quantifying the Effect of Dust on Solar Energy Generation in Burkina Faso	43.001	5,087	-

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NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6942321	RSA NO. 1643595	Accelerating MCMC to Operational Speeds	43.001	41,643	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6940242	SUBCONTRACT 1619845	Specification-guided and Capability-aware Autonomy for Long-endurance Situational Awareness in Subterranean Environments	43.RD	68,221	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6942364	SUBCONTRACT 1642734	Specification-guided and Capability-aware Autonomy for Long-endurance Situational Awareness in Subterranean Environments	43.RD	75,182	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6930713	SUBCONTRACT NO. 1510842	Soil Moisture Science and Product Development	43.RD	376,421	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6939956	SUBCONTRACT NO. 1610367	Arcsecond Space Telescope Enabling Research in Astrophysics (ASTERIA) Extended Mission	43.RD	7,849	-
			Total for CalTech - Jet Propulsion Lab		**2,038,233**	**-**
University of Southern California						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6942679	128759572	SPCTOR: Sensing-Policy ConTroller and OptimezeR	43.001	50,174	-
			Total for University of Southern California		**50,174**	**-**
University of Colorado Boulder						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6932162	1552615/ PO #1000510992	Rock Powered Life	43.001	39,346	-
			Total for University of Colorado Boulder		**39,346**	**-**
Johns Hopkins University						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6941428	157497	Establishing the Presence of Ethane in Titan's Lakes	43.001	34,684	-
			Total for Johns Hopkins University		**34,684**	**-**
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	80,929	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6942920	SUBCONTRACT NO. L0068	Aeronomy at Earth: Tools for Heliophysics Exploration and Research (AETHER)	43.RD	2,248	-
			Total for University of New Hampshire		**83,178**	**-**
Arizona State University						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6937931	18-391	High Temperature GaN Microprocessor for Space Applications	43.001	139,882	-

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NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6937562	SUBCONTRACT NO. 17-257	Psyche: Journey to a Metal World (ASU)	43.RD	210,261	-
			Total for Arizona State University		**350,144**	**-**
Lowell Observatory						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6932482	2015-81520	Occultation Studies of Small Bodies in the Outer Solar System	43.RD	27,120	-
			Total for Lowell Observatory		**27,120**	**-**
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	6,167	-
			Total for University of Alabama in Huntsville		**6,167**	**-**
Syracuse University						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6935422	28469-04461-S01	Distributed Multi-processor Geometry Environment to Support Design and Analysis on Extreme-scale Grids	43.002	147,518	-
			Total for Syracuse University		**147,518**	**-**
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	84,753	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6938097	K99059JRG	Lucy Phase B	43.RD	15,238	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6939450	L99059JRG	Investigating clouds and fogs on Titan	43.001	102,634	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6943416	N99069EH	Wave-mean interaction in Pluto's atmosphere	43.001	6,992	-
			Total for Southwest Research Institute		**209,617**	**-**
Space Telescope Science Institute						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6939755	50998	JWST Telescope Scientist Investigations - 2	43.001	17,721	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6933896	HST-GO-14352.009-A	Deep X-ray Observations of 3 exceptional high-z clusters of galaxies (HST GO-14352)	43.RD	0	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6935437	HST-GO-14677.006-A	Probing the most distant high-mass galaxy clusters from SPT with HST weak lensing observations	43.RD	-570	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6937960	HST-GO-14690.001	Identifing the last unkown emission component in the Herbig system HD 163296 (HST GO-14690)	43.RD	5,110	-

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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	18,330	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6937987	HST-GO-14797.015-A	Atmospheric Albedos, Alkalis, and Aerosols of Hot Jupiters (HST 14797)	43.RD	69,251	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6936157	HST-GO-14896.002-A	Precise Photometric Redshifts For Two Bright z>8 Galaxies (HST-GO-14896)	43.RD	-41	-
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	115,759	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6938918	HST-GO-15163.011-A	COS Ultraviolet Baryon Survey (CUBS) (HST 15163)	43.RD	31,877	-
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	47,332	-
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	41,718	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6939475	HST-GO-15315.001-A	Revealing Thermal Instabilities in the Core of the Phoenix Cluster (HST 15315)	43.RD	34,341	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6938046	HST-GO-15333.016-A	The Atmospheric Diversity of Mini-Neptunes in Multi-planet Systems (HST 15333)	43.RD	81,362	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6939680	HST-GO-15377.006-A	Does the Brightest Strongly Lensed Galaxy Contain An AGN? (HST 15377)	43.RD	17,464	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6938951	HST-GO-15418.002-A	Probing spatially variable Lyman-continuum escape from the brightest lensed galaxy in the universe (HST 15418)	43.RD	12,523	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6940574	HST-GO-15641.014-A	Focus on Betelgeuse	43.RD	21,800	-
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	55,656	-
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	4,540	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6943297	HST-GO-16038.001-A	Imaging a Rare Starburst Central Galaxy in a Merging Cluster (HST GO-16038)	43.RD	5,620	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6942874	STSCI-51644	WFIRST-CGI post processing	43.RD	16,836	-
			Total for Space Telescope Science Institute		**596,629**	**-**
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	369,286	-

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			Total for Pennsylvania State University		**369,286**	**-**
Stanford University						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6934882	61238711-122362	WFIRST - Exoplanet Coronagraphy Science Team	43.001	45,243	-
			Total for Stanford University		**45,243**	**-**
Baylor College of Medicine						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6936096	7000000324 / TRISH PROJ# DS002	Transitional Research Institute	43.003	621,296	220,150
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6939745	NNX16A069A/PO#70000048 3	Gastrointestinal Devices for Long-Term In Situ Delivery of Therapeutic Microbes	43.003	26,175	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6940836	PO# 7000000843	Silk Composite Biomaterials for Shielding Medications in Space	43.003	49,998	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6942902	PO#7000001107/NNX16A06 9A	Dummy Parent: Just in Time Medications from Gastrointestinal Resident Microbial Systems	43.003	137,881	-
			Total for Baylor College of Medicine		**835,351**	**220,150**
Cornell University						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6939699	83292-11129	Sun Glints on Hydrocarbon Seas: Using Wind-Waves to Constrain Surface Winds on Titan	43.001	53,722	-
			Total for Cornell University		**53,722**	**-**
University of Maryland - College Park						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6942704	85734-Z6249201	A Framework for Self-Consistent Modeling of Rocky Exoplanet Atmospheres	43.001	45,813	-
			Total for University of Maryland - College Park		**45,813**	**-**
Woods Hole Oceanographic Institution						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6935447	A101331	Cooperative Exploration with Under-actuated Autonomous Vehicles in Hazardous Environments	43.001	216,409	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6942473	A101469	Exploring Ocean Worlds: Ocean System Science to Support the Search for Life	43.001	8,638	-
			Total for Woods Hole Oceanographic Institution		**225,046**	**-**
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	128,657	-
			Total for Cross Trac Engineering, Inc.		**128,657**	**-**

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STONE AEROSPACE, INC.						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6942011	AGMT. DTD. 06/01/2019	SESAME Full Proposal with Stone Aerospace	43.001	79,118	-
			Total for STONE AEROSPACE, INC.		**79,118**	**-**
Rochester Precision Optics						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6942064	AGREEMENT DTD 8/19/19	Hierarchical metasurface optics for multiplexed Visible to Terahertz Cross-Band Systems	43.RD	35,132	-
			Total for Rochester Precision Optics		**35,132**	**-**
Applied NanoFemto Technologies, LLC						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6942260	AGREEMENT DTD 9/1/19	Photonics integrated circuit enabled miniature on-chip urine test system with high sensitivity and reliability	43.RD	3,836	-
			Total for Applied NanoFemto Technologies, LLC		**3,836**	**-**
Smithsonian Inst. - Astrophysical Observatory						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6936158	AR7-18001X	TRACING THE ACCRETION SHOCK IN YOUNG STARS (Chandra 18200023)	43.RD	66,617	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6937952	AR8-19001B	Spectral Classification of Massive Stars Based on Their X-ray Spectra (Chandra 19200002)	43.RD	12,522	-
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	34,981	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6929736	GO4-15091B	Monitoring the Tidal Disruption of the Gas Cloud G2 As It Encounters Sgr A* (Chandra 15620853)	43.RD	0	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6935501	GO6-17011X	How hot can flares from young stars be? (Chandra 17200180)	43.RD	34,164	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6935186	GO6-17019X	X-rays reveal a new, hot jet component: The case of Sz 102 (Chandra 17200524)	43.RD	5,235	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6935588	GO6-17021X	What are the dust properties around young stars? (Chandra 17200708)	43.RD	30,867	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6934204	GO6-17022X	Heating the Primordial Soup: X-raying the Circumstellar Disk of RY Lupi (Chandra 17200709)	43.RD	38,530	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6933767	GO6-17109X	A Fossil Group in Formation (Chandra 17800155)	43.RD	1,168	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6935018	GO6-17128A	SPT-CL J0329-2330: CHARACTERIZING THE X-RAY PROPERTIES OF AN EXCEPTIONAL HIGH-REDSHIFT GALAXY CLUSTER (Chandra 17800659)	43.RD	-5,359	-

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NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6934989	GO6-17134X	Optical Depth of Si K in Bright Low-Mass X-Ray Binaries (Chandra 17910267)	43.RD	4,099	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6936483	GO7-18002C	X-rays from Young Low-Mass Stars: Inhospitable Habitable Zones? (Chandra 18200025)	43.RD	15,574	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6935779	GO7-18015X	What is the hottest cool star? (Chandra 18200423)	43.RD	42,471	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6936844	GO7-18035X	The Puzzling Nature OF THE YOUNG MICROQUASAR CIR X-1 (Chandra 18400420)	43.RD	28,085	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6936846	GO7-18134X	THE ATOMIC TO DUST ABUNDANCE RATIO OF SILICON TOWARDS THE GALACTIC BULGE (Chandra 18910684)	43.RD	117,209	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6936843	GO7-18135A	Diagnosing the Black Hole Accretion Physics of Sgr A* (Chandra 18620763)	43.RD	8,917	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6939871	GO8-19011C	Legacy HETG Spectrum of a Massive Star: zeta Pup (Chandra 19200511)	43.RD	20,250	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6940085	GO8-19013X	An (X-ray Gratings) Tale of Two Young Stellar Objects (Chandra 19200676)	12.RD	2,708	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6940210	GO8-19036X	Precise Localization of Transient Low-Mass X-ray Binaries (Chandra 19400475)	43.001	22,406	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6938406	GO8-19038X	A Test of Black-Hole Disk Truncation: Thermal Disk Emission in the Bright Hard State (Chandra 19400584)	43.RD	-1	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6938404	GO8-19103X	Chandra observations of an exceptional cluster of galaxies at z=1.7 (Chandra 19800141)	43.RD	21,721	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6938403	GO8-19111X	The Chandra Strong Lens Sample: Revealing Baryonic Physics In Strong Lensing Selected Clusters (Chandra 19800436)	43.RD	5,367	-
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	6,314	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6939903	GO9-20116X	A Unique Sample of Extreme-BCG Clusters at 0.2 < z < 0.6 (Chandra 20800437)	43.RD	64,314	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6940590	GO9-20117A	Studying the Progenitors of Our Favorite Clusters at z > 1 (Chandra 20800438)	43.001	26,774	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6926645	SV2-82023	ACIS Science Support for the Chandra Program	43.RD	364,989	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6895255	SV3-73016	Support of the Chandra X-Ray Center (CXC)	43.RD	2,908,941	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6937024	SV8-88004	Support of the ARCUS Mission: Exploring the Formation and Evolution of Clusters, Galaxies, and Stars	43.RD	-2,910	-
			Total for Smithsonian Inst. - Astrophysical Observatory		**3,875,951**	**-**

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Georgetown University						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6942845	AWD7774162-GR206674	Biosignature Preservation in Sulfate-Dominated Hypersaline Environments	43.001	32,960	-
			Total for Georgetown University		**32,960**	**-**
ESPACE						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6941851	ESP-8-27-19	Bimodal Ion-chemical Thruster System (BITS) – STTR Phase I	43.RD	73,049	-
			Total for ESPACE		**73,049**	**-**
Michigan Technological University						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6937520	NNX17AJ32G	Institute for Ultra-Strong Composites By Computational Design (US-COMP)	43.012	113,677	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6937089	SUB 1607060Z6 / PO P0100197	Institute for Ultra-Strong Composites By Computational Design (US-COMP)	43.012	342,767	-
			Total for Michigan Technological University		**456,444**	**-**
Blue Origin, LLC						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6942327	PO 15-000002	Descent Element Mars Extensibility Study	43.RD	120,289	-
			Total for Blue Origin, LLC		**120,289**	**-**
University of Arizona						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6935314	PO 363458	REXIS - REgolith X-ray Imaging Spectrometer Phase E Operations	43.RD	738,506	524,916
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6938420	PO NO. 440148	GUSTO: Gal/Xgal U/LDB Spectroscopic/Stratospheric THz Observatory	43.RD	243,223	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6924918	PURCHASE ORDER 6473	OSIRIS-REx Near-Earth Asteroid Sample Return	43.RD	62,701	-
			Total for University of Arizona		**1,044,430**	**524,916**
Old Dominion University Research Foundation						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6933006	RF PROJECT NO.: 16-134-100558-010	Extreme-Scale Parallel Mesh Generation: CFD 2030 Vision	43.002	-2	-
			Total for Old Dominion University Research Foundation		**-2**	**-**
Georgia Institute of Technology						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6940429	RK617-G5	Oceans Across Space and Time (OAST)	43.001	78,844	-

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			Total for Georgia Institute of Technology		**78,844**	**-**
LongWave Photonics LLC						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6939454	SBIR UNDER 80NSSC18C0090	SBIR Phase II: Tunable, High-Power Terahertz Quantum Cascade Laser Local Oscillator	43.RD	189,247	-
			Total for LongWave Photonics LLC		**189,247**	**-**
Combustion Research & Flow Technology, Inc.						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6942081	SBIR UNDER 80NSSC19C0317	Simulation of Chilldown Process with a Sub-grid Boiling Model	43.RD	30,000	-
			Total for Combustion Research & Flow Technology, Inc.		**30,000**	**-**
Universities Space Research Association						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6941371	SOF 07-0201	Tracing Cosmic Star-Forming Gas: Connecting Cii, HCN, and other Species in the LEGO Survey	43.RD	6,342	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6938190	SOF-06-0160	Monitoring Titan's Atmosphere in the Post-Cassini Era with Stellar Occulations	43.RD	2,575	-
			Total for Universities Space Research Association		**8,917**	**-**
FGC Plasma Solutions						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6939059	STTR DTD. 08/09/2018	SBIR Phase I: Plasma-Assisted Active Combustion Control as an Enabling Technology for N+3 Combustors	43.RD	758	-
			Total for FGC Plasma Solutions		**758**	**-**
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	6,719	-
			Total for Univ. Corporation For Atmos. Research		**6,719**	**-**
University of Michigan						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6941524	SUBK00011438/3005617618	Europa Clipper Facility Magnetometer Phases C&D	43.001	96,624	-
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	33,086	-
			Total for University of Michigan		**129,709**	**-**
University Space Research Assoc.						

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NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6942336	SUBK-20-0006	ODM and UTM Synergies	43.RD	1,901	-
			Total for University Space Research Assoc.		**1,901**	**-**
National Institute of Aerospace						
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	56,027	-
			Total for National Institute of Aerospace		**56,027**	**-**
University of Texas - Austin						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6934349	UTA16-000512	Evolving global ocean state estimation to the SWOT era	43.001	50,638	-
			Total for University of Texas - Austin		**50,638**	**-**
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	373	-
			Total for Washington University in St. Louis		**373**	**-**
			TOTAL for National Aeronautics and Space Administration		**11,984,501**	**745,066**

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NATIONAL SCIENCE FOUNDATION						
University of California - Berkeley						
NATIONAL SCIENCE FOUNDATION	6923306	00007444	Center for Energy Efficient Electronics Science (E3S)	47.041	1,020,674	-
NATIONAL SCIENCE FOUNDATION	6935339	00009391	HERA: Illuminating Our Early Universe	47.049	231,834	-
NATIONAL SCIENCE FOUNDATION	6929285	SUBAWARD 00008317/MCB-1330914	Synthetic biology of yeast	47.074	89,696	-
			Total for University of California - Berkeley		**1,342,205**	**-**
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	155,711	-
NATIONAL SCIENCE FOUNDATION	6939941	0285 G WA158	Network Sovereignty: A Comparative Study of Local Network Initiatives in Rural, Low-income Communities	47.075	72,697	-
			Total for University of California, Los Angeles		**228,408**	**-**
University of Illinois-Urbana Champaign						
NATIONAL SCIENCE FOUNDATION	6942057	092992-17667	Atomic Beam Source (ABS) Development	47.049	97,418	-
NATIONAL SCIENCE FOUNDATION	6931375	2014-05135-01	Atomic Beam Source (ABS) Development	47.049	-6,070	-
			Total for University of Illinois-Urbana Champaign		**91,348**	**-**
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	112,825	-
NATIONAL SCIENCE FOUNDATION	6935295	46(GG009393)	Participation of David T. Wang on Expedition 370	47.050	7,934	-
			Total for Columbia University		**120,759**	**-**
Internet2						
NATIONAL SCIENCE FOUNDATION	6940634	1042-B	Investigating Large Scale Heterogeneous computing with the Large Hadron Collider	47.070	80,943	-
			Total for Internet2		**80,943**	**-**
Carnegie-Mellon University						
NATIONAL SCIENCE FOUNDATION	6930825	1122183-333057	CIF21: DIBBS: Building a Scalable Infrastructure for Data-Driven Discovery and Innovation in Education	47.070	369,943	-
			Total for Carnegie-Mellon University		**369,943**	**-**

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University of Rhode Island						
NATIONAL SCIENCE FOUNDATION	6941838	12202018/0007337	Minions: A low-cost float for distributed, Lagrangian observations of the biological carbon pump	47.050	204,812	-
			Total for University of Rhode Island		**204,812**	**-**
Harvard University						
NATIONAL SCIENCE FOUNDATION	6939590	123826-5056263	Center for Integrated Quantum Materials	47.049	1,529,001	-
NATIONAL SCIENCE FOUNDATION	6932660	123937-5096527	Biologically Inspired Optimized Materials And Technologies Transformed by Evolutionary Rules (BIOMATTER)	47.049	31,374	-
NATIONAL SCIENCE FOUNDATION	6940826	124127-5110072	RAISE: TAQS - Towards a Quantum Cloud	47.041	263,236	-
NATIONAL SCIENCE FOUNDATION	6942548	124189-5112398	DMREF: Hydrogel-actuated cellular soft robotic materials with programmable mechanical properties	47.049	42,826	-
NATIONAL SCIENCE FOUNDATION	6942678	AGMT DATED 2/25/2020	Understanding Interstellar Aromatic Chemistry: An Integrated Experimental, Theoretical, and Astronomical Approach	47.049	3,891	-
NATIONAL SCIENCE FOUNDATION	6940742	BA DTD. 06/03/2019	Development of Nanoscale Magnetometer using Quantum assisted Sensing Readout	47.049	0	-
NATIONAL SCIENCE FOUNDATION	6939677	BA DTD. 10/18/2018	Billing Agreement – George Varnavides Fall19 Incoming	47.083	62,441	-
NATIONAL SCIENCE FOUNDATION	6941558	LU MI-POLS	Collaborative Research: Formation of a High Flux Student Research Network (HF-SRN) as a Laboratory for Enhancing Interaction in the PoLS SRN	47.049	32,947	-
			Total for Harvard University		**1,965,715**	**-**
Washington State University						
NATIONAL SCIENCE FOUNDATION	6937644	132249-G003779	Engineering Synthetic Symbiosis Between Pland and Bacteria to Deliver Nitrogen to Crops	47.074	95,235	-
			Total for Washington State University		**95,235**	**-**
Arizona State University						
NATIONAL SCIENCE FOUNDATION	6929035	14-374	FESD Type 1: The Dynamics of Earth System Oxygenation	47.050	4,570	-
NATIONAL SCIENCE FOUNDATION	6938642	17-096	QESST: ERC for Quantum Energy and Sustainable Solar Technologies	47.041	-329	-
NATIONAL SCIENCE FOUNDATION	6942459	ASUB00000433	Mid-Scale RI-1 (M1:DP): Compact X-ray Free-Electron Laser Project (CXFEL)	47.074	6,809	-
NATIONAL SCIENCE FOUNDATION	6942199	ASUB00000443	Center to Center (C2C) International Collaboration on Advanced Photovoltaics: Electrode Manufacturing and Indoor Power Applications	47.041	42,417	-

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NATIONAL SCIENCE FOUNDATION	2748781	SUBAWARD NO: 17-096	QESST: ERC for Quantum Energy and Sustainable Solar Technologies	47.041	94,476	-
			Total for Arizona State University		**147,942**	**-**
George Washington University						
NATIONAL SCIENCE FOUNDATION	6935442	16-S08	PIRE: Promoting Urban Sustainability in the Arctic	47.083	56,593	-
NATIONAL SCIENCE FOUNDATION	6940635	18-S45	INSPIRE: Expanding Open Innovation Methods to Complex Engineered Systems	47.041	68,563	-
			Total for George Washington University		**125,156**	**-**
University of Massachusetts - Amherst						
NATIONAL SCIENCE FOUNDATION	6937426	18-010023 A	CCI: Center for Autonomous Chemistry	47.049	36,794	-
			Total for University of Massachusetts - Amherst		**36,794**	**-**
University of Illinois at Chicago						
NATIONAL SCIENCE FOUNDATION	6933103	2015-04326-01-00	EFRI 2-DARE: Thermal Transport in 2D Materials for Next Generation Nanoelectronics- From Fundamentals to Devices	47.041	2,983	-
			Total for University of Illinois at Chicago		**2,983**	**-**
University of California/Davis						
NATIONAL SCIENCE FOUNDATION	6936421	201601893-02	High-Performance, High-Level Tools for Statistical Inference and Unsupervised Learning	47.049	27,972	-
NATIONAL SCIENCE FOUNDATION	6941718	A19-3499-S001	Leveraging in-context online discussion of course materials to enhance student engagement and learning	47.076	44,680	-
			Total for University of California/Davis		**72,651**	**-**
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	109,176	-
			Total for University of California - Irvine		**109,176**	**-**
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	58,130	-
			Total for University of Oklahoma (Norman, OK)		**58,130**	**-**

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Concord Consortium						
NATIONAL SCIENCE FOUNDATION	6935511	303-01	DIP: Linking Complex Systems: Promoting reasoning within and across interconnected complex systems	47.070	4,299	-
			Total for Concord Consortium		**4,299**	**-**
Duke University						
NATIONAL SCIENCE FOUNDATION	6939634	333-2439	Center for the Chemistry of Molecularly Optimized Networks	47.049	285,771	-
NATIONAL SCIENCE FOUNDATION	6939582	333-2457	STAQ: Software-Tailored Architecture for Quantum co-design	47.049	59,329	-
			Total for Duke University		**345,100**	**-**
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	117,361	-
NATIONAL SCIENCE FOUNDATION	6935164	416929G/GR510498	EFRI AQUIRE: A Scalable Integrated Quantum Photonic Interconnect	47.041	133,513	-
			Total for University of Rochester		**250,874**	**-**
Boston University						
NATIONAL SCIENCE FOUNDATION	6938043	4500002547	CIF21 DIBBs: EI: North Eastern Storage Exchange	47.070	44,544	-
NATIONAL SCIENCE FOUNDATION	6940191	4500002879	RAISE Integrating machine learning and biological neural networks	47.041	70,223	-
NATIONAL SCIENCE FOUNDATION	6940180	50206610-9500308659	Billing Agreement - Shoshana Das - Nanosystems Engineering Research Center for Directed Multiscale Assembly of Cellular Matamaterials with Nanoscale Precision: CELL-MET (Thrust 3)	47.041	-124	-
			Total for Boston University		**114,643**	**-**
Virginia Polytechnic Institute & State University						
NATIONAL SCIENCE FOUNDATION	2389429	479590	S212: Impl: The Molecular Sciences Software Institute (Postdoctoral Fellowship for Fang Liu)	47.070	50,000	-
NATIONAL SCIENCE FOUNDATION	2389565	479590	Theoretical Chemical Kinetics Database (TCKDB)	47.070	24,940	-
			Total for Virginia Polytechnic Institute & State University		**74,940**	**-**
Boston College						
NATIONAL SCIENCE FOUNDATION	6940458	5105841-1	EAGER: Selective biodamage with shaped THz light fields	47.049	312	-

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			Total for Boston College		**312**	**-**
Stanford University						
NATIONAL SCIENCE FOUNDATION	6937285	61602537-126273	CCI Phase I: Center for First Principles Design of Quantum Processes	47.049	131,496	-
			Total for Stanford University		**131,496**	**-**
University of California-San Diego						
NATIONAL SCIENCE FOUNDATION	6935212	80302854	Energy-Efficient Computing: from Devices to Architectures (E2CDA) A Joint Initiative between NSF and SRC	47.041	62,592	-
NATIONAL SCIENCE FOUNDATION	6937009	SUB # 89409643 PO#S9001704	PFI:BIC: Smart Factories: An Intelligent Material Delivery System to Improve Human-Robot Workflow	47.041	104,350	-
NATIONAL SCIENCE FOUNDATION	6941882	SUB 123526011 PO S9002484	RAISE: C-Accel Pilot - Track A1 (Open Knowledge Network): Knowledge of Internet Structure: Measurement, Epistemology, and Technology (KISMET)	47.083	68,486	-
NATIONAL SCIENCE FOUNDATION	6939284	SUBAWARD AGREEMENT #106786383 ; PO S9002094	Platform for Applied Network Data Analysis (PANDA)	47.070	33,502	-
			Total for University of California-San Diego		**268,930**	**-**
Cornell University						
NATIONAL SCIENCE FOUNDATION	6937589	80497-10951	2D Atomic Membranes for 3D Systems	47.049	40,470	-
			Total for Cornell University		**40,470**	**-**
University of Maryland						
NATIONAL SCIENCE FOUNDATION	6942164	81350-Z3438201	QII-TAQS:Quantum machine learning with photonics	47.049	7,385	-
			Total for University of Maryland		**7,385**	**-**
University of Southern California						
NATIONAL SCIENCE FOUNDATION	6940865	91255352 / PO10614338	SCEC5 Research Collaboration with the Massachusetts Institute of Technology: Development of merged GPS time series for the Community Geodetic Model	47.050	29,995	-
			Total for University of Southern California		**29,995**	**-**
Kansas State University						
NATIONAL SCIENCE FOUNDATION	6937873	A00-0361-S002	PIRE: High Temperature Ceramic Fibers: Polymer-Based Manufacturing, Nanostructure, and Performance	47.079	8,907	-
			Total for Kansas State University		**8,907**	**-**

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Emory University						
NATIONAL SCIENCE FOUNDATION	6939438	A022601	CCI Center in Selective C-H Functionalization	47.049	80,775	-
NATIONAL SCIENCE FOUNDATION	6941878	A221080	CCI Center in Selective C-H Functionalization	47.049	84,815	-
			Total for Emory University		**165,591**	**-**
Virtual Collaboration Research						
NATIONAL SCIENCE FOUNDATION	6940411	AGMT DTD 2/1/2019	Spatial Artificial Intelligence System for the Visually Impaired (NavigAid)	47.041	15,564	-
			Total for Virtual Collaboration Research		**15,564**	**-**
NEROC						
NATIONAL SCIENCE FOUNDATION	6926730	AGS-1229036	MRI: Development of RAPID - Radio Array of Portable | Interferometric Detectors	47.050	-8,012	-
NATIONAL SCIENCE FOUNDATION	6940071	AGS-1726377	MRI Collaborative: Development of Monitors for Alaskan and Canadian Auroral Weather in Space (MACAWS)	47.050	183,173	5,208
			Total for NEROC		**175,162**	**5,208**
Yale University						
NATIONAL SCIENCE FOUNDATION	6932587	C16D12238 (D02172)	EFRI 2-DARE: Few-layer and Thin-film Black Phosphorus for Photonic Applications	47.041	2,421	-
			Total for Yale University		**2,421**	**-**
Florida A&M University						
NATIONAL SCIENCE FOUNDATION	6937333	C-4979	CREST Center for Complex Materials Design for Multidimensional Additive Processing (CoMan)	47.076	72,967	-
			Total for Florida A&M University		**72,967**	**-**
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	99,129	-
			Total for New York University		**99,129**	**-**
New York University Medical Center						
NATIONAL SCIENCE FOUNDATION	6940520	PO #M160000461 - #14-A0-00-003420-01	Interactions of Radiofrequency Electromagnetic Fields with Biological Tissue: New Tools to Address Challenges and Exploit Opportunities	47.041	32,364	-
			Total for New York University Medical Center		**32,364**	**-**

Appendix A3
Massachusetts Institute of Technology
Federal Research Support - Passthrough - On Campus
FY 2020 Expenditures by Prime Sponsor and Sponsor

Prime Sponsor Name	Project WBS id	Passthrough Number	WBS Project Name	CFDA #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
National Radio Astronomy Observatory						
NATIONAL SCIENCE FOUNDATION	6937959	PO 359999	Enabling New Science with the ALMA Phasing System "Phase 2"	47.049	318,473	-
NATIONAL SCIENCE FOUNDATION	6941395	PO# 366694	NRAO Imaging Study: Exploring Sparse Model Image Reconstruction for ngVLA Imaging Applications	47.049	11,301	-
			Total for National Radio Astronomy Observatory		**329,775**	**-**
University of Pennsylvania						
NATIONAL SCIENCE FOUNDATION	6937096	PO4366917	BioGraph 2.0 - Online Professional Development for High School Biology Teachers for Teaching and Learning About Complex Systems	47.076	96,602	-
NATIONAL SCIENCE FOUNDATION	2748221	SUBAWARD 572180	BioGraph 2.0 - Online Professional Development for High School Biology Teachers for Teaching and Learning About Complex Systems	47.076	10,720	-
			Total for University of Pennsylvania		**107,321**	**-**
Georgia Institute of Technology						
NATIONAL SCIENCE FOUNDATION	2746922	RF481-G1	Research Experience for Undergraduates	47.041	-30	-
			Total for Georgia Institute of Technology		**-30**	**-**
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	140,976	-
			Total for UNAVCO		**140,976**	**-**
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	14,568	-
			Total for Oregon State University		**14,568**	**-**
Appia LLC						
NATIONAL SCIENCE FOUNDATION	6940117	SBIR RESEARCH AGREEMENT EFFECTIVE 9-1-2018	SBIR Phase I: Development of a Novel Rubber Recycling Process Not Involving Devulcanization	47.041	-93	-
			Total for Appia LLC		**-93**	**-**
Tufts University						

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Massachusetts Institute of Technology
Federal Research Support - Passthrough - On Campus
FY 2020 Expenditures by Prime Sponsor and Sponsor

Prime Sponsor Name	Project WBS id	Passthrough Number	WBS Project Name	CFDA #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NATIONAL SCIENCE FOUNDATION	6941932	SF0069/PO EP0190879	Convergence Accelerator Phase I (RAISE): Network Science of Census Data	47.083	111,535	-
			Total for Tufts University		**111,535**	**-**
Santa Fe Institute						
NATIONAL SCIENCE FOUNDATION	6935014	SFI20161003	INSPIRE: Thermodynamic tradeoffs in computation: the constraints confronting biochemical networks and post-Moore computers	47.049	17,964	-
			Total for Santa Fe Institute		**17,964**	**-**
Kalion, Inc.						
NATIONAL SCIENCE FOUNDATION	6939575	STTR DTD. MAY 1, 2018	STTR Phase I: Low-Cost, High-Purity Biobased Glucaric Acid	47.041	55,361	-
			Total for Kalion, Inc.		**55,361**	**-**
Princeton University						
NATIONAL SCIENCE FOUNDATION	6933021	SUB0000092	Hazards SEES: Risk Assessment and Risk Management: An Integrated Approach for Responding to Multiple Hazards from Tropical Cyclones	47.050	356	-
NATIONAL SCIENCE FOUNDATION	6935980	SUB0000178	US CMS Software & Computing Subsystem (Year 2017)	47.049	507,595	-
NATIONAL SCIENCE FOUNDATION	6939873	SUB0000276	Institute for Research and Innovation in Software for High Energy Physics (IRIS-HEP)	47.070	201,615	-
			Total for Princeton University		**709,566**	**-**
Purdue University						
NATIONAL SCIENCE FOUNDATION	6922873	SUBAWARD #10000686-015	Emerging Frontiers of Science of Information	47.070	506,046	-
			Total for Purdue University		**506,046**	**-**
Research Foundation of CUNY						
NATIONAL SCIENCE FOUNDATION	6933810	SUBAWARD 40F23-A	EFRI 2-DARE - EXCITONICS AND POLARITONICS BASED ON 2D MATERIALS (EXPO-2D)	47.041	8,437	-
			Total for Research Foundation of CUNY		**8,437**	**-**
Southwest Research Institute						
NATIONAL SCIENCE FOUNDATION	6937788	SUBAWARD J99093LW	Titan from Many Angles: 3D Methane & Haze Distributions and Surface Spectra	47.049	2,246	-
			Total for Southwest Research Institute		**2,246**	**-**
California Institute of Technology						

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FY 2020 Expenditures by Prime Sponsor and Sponsor

Prime Sponsor Name	Project WBS id	Passthrough Number	WBS Project Name	CFDA #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NATIONAL SCIENCE FOUNDATION	6939618	SUBAWARD NO. S458042	LIGO Operations FY19 through FY23	47.049	5,078,204	-
			Total for California Institute of Technology		**5,078,204**	**-**
The Smithsonian Astrophysical Observatory						
NATIONAL SCIENCE FOUNDATION	6942136	SV0-09003	Mid-scale RI-1 (M1:DP): Next Generation Event Horizon Telescope Design	47.049	235,972	-
			Total for The Smithsonian Astrophysical Observatory		**235,972**	**-**
Smithsonian Inst. - Astrophysical Observatory						
NATIONAL SCIENCE FOUNDATION	6933768	SV6-86002	The Event Horizon Telescope Experiment	47.049	568,010	-
			Total for Smithsonian Inst. - Astrophysical Observatory		**568,010**	**-**
University of Texas - Austin						
NATIONAL SCIENCE FOUNDATION	6939541	UTA18-001151	Dimensions: Ordering the microbial world into natural genetic, ecological, and functional units	47.074	206,734	-
			Total for University of Texas - Austin		**206,734**	**-**
University of Washington						
NATIONAL SCIENCE FOUNDATION	6934495	UWSC6200 (BPO39607)	NSF Engineering Research Center for Sensorimotor Neural Laboratory of Electronics	47.041	10,075	-
NATIONAL SCIENCE FOUNDATION	6939078	UWSC6200 (BPO4405)	NSF Engineering Research Center for Sensorimotor Neural Laboratory of Electronics	47.041	325,071	-
			Total for University of Washington		**335,146**	**-**
			TOTAL for National Science Foundation		**15,320,484**	**5,208**
			TOTAL Federal Research Support - Passthrough - On Campus		**$107,447,112**	**$931,125**

Appendix B
Massachusetts Institute of Technology
Federal Non-Research Support - On Campus
FY 2020 Expenditures

Federal Agency	Government Contract Number	Master Project Name	CFDA #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
DEPARTMENT OF DEFENSE					
Air Force					
12.800					
Air Force	FA9550-18-1-0516	Convergence QL: AFOSR Quantum Science Summer School	12.800	47,238	11,253
Air Force	FA9550-19-1-0197	AFOSR - Learning for Dynamics and Control Conference	12.800	20,000	-
Air Force	FA9550-20-1-0008	LIDS Workshop on Information and Decision Sciences: From the Past to the Future	12.800	24,089	-
		Total for CFDA # 12.800		*91,327*	*11,253*
		Total for Air Force		**91,327**	**11,253**
Army					
12.431					
Army	W911NF1910219	A workshop on Clays: New Perspectives, Challenges & Opportunities	12.431	3,907	-
Army	W911NF-19-1-0273	ARO - Learning for Dynamics and Control Conference	12.431	7,171	-
Army	W911NF-19-1-0425	LIDS Workshop on Information and Decision Sciences: From the Past to the Future	12.431	25,000	-
		Total for CFDA # 12.431		*36,078*	-
		Total for Army		**36,078**	**-**
Navy					
12.300					
Navy	N00014-18-1-2890	Competency, Community, Career: A technician apprenticeship certificate for advanced manufacturing	12.300	586,135	470,900
Navy	N00014-19-1-2370	ONR - Learning for Dynamics and Control Conference	12.300	5,477	-
Navy	N00014-19-1-2753	Virtual Manufacturing Lab (VM-Lab):A Multimedia Design House for Digital Learning in Manufacturing-USA Workforce Education	12.300	459,579	91,287
		Total for CFDA # 12.300		*1,051,191*	*562,187*
		Total for Navy		**1,051,191**	**562,187**
Other DOD					
12.U37					
NSA	H98230-19-C-0292	MIT Center for Quantum Engineering (MIT-CQE)	12.U37	48,592	-
		Total for CFDA # 12.U37		*48,592*	-

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FY 2020 Expenditures

Federal Agency	Government Contract Number	Master Project Name	CFDA #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
		Total for Other DOD		**48,592**	**-**
		TOTAL for Department of Defense		**1,227,188**	**573,440**

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Federal Agency	Government Contract Number	Master Project Name	CFDA #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
DEPARTMENT OF COMMERCE					
11.417					
DOC	NA17OAR4170243	2017 NMFS Grad Fellowship - Megan Winton	11.417	41,806	41,806
DOC	NA18OAR4170320	2018 NMFS Grad Fellowship- Robert P. Wildermuth	11.417	33,156	30,142
DOC	NA19OAR4170010	FY2019 Knauss Fellowship - Gualtiero Jaeger	11.417	50,707	-
DOC	NA20OAR4170061	FY2020 Knauss Fellow-Brianna Shaughnessy	11.417	49,684	-
		Total for CFDA # 11.417		*175,353*	*71,948*
		Total for Department of Commerce		**175,353**	**71,948**
		TOTAL for Department of Commerce		**175,353**	**71,948**

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Federal Agency	Government Contract Number	Master Project Name	CFDA #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
DEPARTMENT OF ENERGY					
81.049					
DOE	DE-SC0014478	MIT Outreach for Plasma Science and Fusion	81.049	90,388	-
DOE	DE-SC0018354	Convergence QL: NSF/DOE Quantum Science Summer School	81.049	23,387	18,189
DOE	DE-SC0019779	2019 Computational Physics School for Fusion Research	81.049	20,505	-
		Total for CFDA # 81.049		*134,279*	*18,189*
81.121					
DOE	DE-NE0000102	MIT Nuclear Energy University Fellowship Program	81.121	35,536	-
		Total for CFDA # 81.121		*35,536*	-
81.U02					
DOE	652574	2019 LPC Distinguished Researcher Program of Mariarosaria D'Alfonso	81.U02	16,125	-
		Total for CFDA # 81.U02		*16,125*	-
		Total for Department of Energy		**185,940**	**18,189**
		TOTAL for Department of Energy		**185,940**	**18,189**

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Massachusetts Institute of Technology
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FY 2020 Expenditures

Federal Agency	Government Contract Number	Master Project Name	CFDA #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
DEPARTMENT OF HOMELAND SECURITY					
97.U01					
DHS	EMAIL DATED 4/13/2020	Snow Removal January 2018 -June 2019	97.U01	195,115	-
		Total for CFDA # 97.U01		*195,115*	-
		Total for Department of Homeland Security		**195,115**	**-**
		TOTAL for Department of Homeland Security		**195,115**	**-**

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Federal Non-Research Support - On Campus
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Federal Agency	Government Contract Number	Master Project Name	CFDA #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
DEPARTMENT OF TRANSPORTATION					
20.215					
DOT	693JJ32045015	DWIGHT DAVID EISENHOWER TRANSPORTATION FELLOWSHIP PROGRAM (DDETFP)	20.215	26,849	-
		Total for CFDA # 20.215		*26,849*	-
		Total for Department of Transportation		**26,849**	**-**
		TOTAL for Department of Transportation		**26,849**	**-**

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Massachusetts Institute of Technology
Federal Non-Research Support - On Campus
FY 2020 Expenditures

Federal Agency	Government Contract Number	Master Project Name	CFDA #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
MISCELLANEOUS FEDERAL GOVT					
Department of Education					
84.047A					
ED	P047A170618	MIT/Wellesley Upward Bound Program	84.047A	270,324	-
		Total for CFDA # 84.047A		*270,324*	-
		Total for Department of Education		**270,324**	**-**
Department of Agriculture					
10.674					
USDA	18-DG-11420004-092	An Engineering Demonstration for a Mass Timber Affordable Housing Prototype for Large-scale Urban Deployment	10.674	116,099	-
		Total for CFDA # 10.674		*116,099*	-
		Total for Department of Agriculture		**116,099**	**-**
Other Agencies					
16.562					
Misc.	2017-IJ-CX-0011	Stop Snitching or Keep Talking? Civilian Information Provision to the Baltimore Police	16.562	6,025	-
		Total for CFDA # 16.562		*6,025*	-
45.024					
Misc.	17-4400-7073	Futurity Island	45.024	27,718	-
Misc.	1808214-44	List Projects - ongoing exhibition series	45.024	30,000	-
Misc.	1854575-44-19	NEA ArtWorks Application for Ericka Beckman	45.024	25,000	-
		Total for CFDA # 45.024		*82,718*	-
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	51,278	-
		Total for CFDA # 45.149		*51,278*	-
45.312					
Misc.	LG-73-17-0162-17	A National Forum to Develop Principles of Accessibility and Inclusion for the Design of Library Systems	45.312	41,408	-
		Total for CFDA # 45.312		*41,408*	-

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Massachusetts Institute of Technology
Federal Non-Research Support - On Campus
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Federal Agency	Government Contract Number	Master Project Name	CFDA #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
77.008					
Misc.	31310018M0021	NRC Fellowship Program	77.008	51,833	-
Misc.	31310018M0038	MIT Nuclear Education Faculty Development Program	77.008	173,724	-
Misc.	NRC-HQ-84-15-G-0045	MIT Nuclear Education Faculty Development Program	77.008	15,695	-
		Total for CFDA # 77.008		*241,251*	-
98.001					
Misc.	72026319CA00003	Center of Excellence in Energy Research, Education and Entrepreneurship	98.001	2,446,135	-
Misc.	AID-OAA-A-12-00095	CITE and IDIN	98.001	24,000	-
		Total for CFDA # 98.001		*2,470,135*	-
		Total for Other Agencies		**2,892,815**	**-**
		TOTAL for Miscellaneous Federal Govt		**3,279,238**	**-**

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FY 2020 Expenditures

Federal Agency	Government Contract Number	Master Project Name	CFDA #	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	51,376	-
NASA	NNA13AA90A	Foundations of Complex Life: Evolution, Preservation & Detection on Earth & Beyond	43.001	50,311	15,854
NASA	NNX16AN92H	Investigating VOC Speciation Measured from Space	43.001	4,282	-
		Total for CFDA # 43.001		*105,968*	*15,854*
43.002					
NASA	NNX17AB22H	Advanced Modeling and Control for Turbo-Electric and Hybrid Electric Propulsion - Fellowship for Aidan Dowdle	43.002	1,500	-
		Total for CFDA # 43.002		*1,500*	-
43.003					
NASA	NNX17AB13G	NASA Participation in MIT Innovation Lab	43.003	44,974	-
		Total for CFDA # 43.003		*44,974*	-
43.007					
NASA	80NSSC17K0688	Genomic and functional analysis of biofilm morphytypes of International Space Station isolated Stapylococcus epidermidis and their pathogenicity in Caenorhabditis elegans	43.007	32,766	-
		Total for CFDA # 43.007		*32,766*	-
43.008					
NASA	80NSSC20M0048	Massachusetts Space Grant Proposed Opportunities in NASA STEM 2020-2024, Year 1 Augmentation	43.008	127,217	-
		Total for CFDA # 43.008		*127,217*	-
43.012					
NASA	80NSSC17K0077	Enhancing Docking and Manipulation Capability for Microgravity Robotic Free Flyers	43.012	59,397	-
NASA	80NSSC17K0081	2D Materials for Energy Harvesting and Sensing	43.012	73,822	-
NASA	80NSSC17K0082	Additive Manufacturing of Low Work Function Oxides for Spaceborne Thermionic Emission Applications	43.012	95,520	-
NASA	80NSSC17K0083	A Ground-Based Analog for CNS Exposure to Space Radiation: A System for Integrating Microbeam Technology and Neuronal Culture	43.012	73,466	-

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Federal Agency	Government Contract Number	Master Project Name	CFDA #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NASA	80NSSC17K0090	Modeling Oxygen Production on Mars and Extension to a Human-Scale Mission	43.012	79,300	-
NASA	80NSSC18K1141	Optimal Trajectory Design for Innovative Low-Thrust Spacecraft Missions	43.012	71,531	-
NASA	80NSSC18K1182	Adaptive Optics for Exoplanet Characterization with Space Telescopes	43.012	68,951	-
NASA	80NSSC18K1185	Commercial Feasibility of In-Space Manufacturing Applications with Technology Development Targets	43.012	77,486	-
NASA	80NSSC18K1186	Guidance and Control of Electrospray Thruster Actuated CubeSat	43.012	79,181	-
NASA	80NSSC19K1154	Calcium-based Battery Development for Space Technology Applications	43.012	60,582	-
NASA	80NSSC19K1169	Novel thermal management and life support technologies for planetary spacesuits	43.012	61,005	-
NASA	80NSSC19K1173	Controlling and imaging electronic fluids for radiation-resistant high-speed logic in graphene (Student: Sarah Muschinske)	43.012	56,000	-
NASA	NNX16AM70H	Developing Quantum Dot Absorptive Filter Array based Miniaturized Spectrometer for Space Applications	43.012	89,029	-
NASA	NNX16AM71H	Human Performance Metrics for Spacesuit Evaluation	43.012	187	-
NASA	NNX16AM72H	Development and Testing of Autonomous On-Orbit Assembly and Servicing Systems Using the SPHERES Testbed	43.012	57,562	-
NASA	NNX16AM73H	Intersatellite Calibration for Constellations of Remote Sensing CubeSats with Microwave Radiometers and Visible Imagers	43.012	2,185	-
NASA	NNX16AM75H	Quantum Networking and Sensing using a Diamond Nanophotonic Circuit (Student: Eric Bersin)	43.012	56,703	-
		Total for CFDA # 43.012		*1,061,908*	-
43.U08					
NASA	NNX16AH49H	National Space Grant College and Fellowship Program (Space Grant)	43.U08	676,906	-
		Total for CFDA # 43.U08		*676,906*	-
		Total for National Aeronautics and Space Administration		**2,051,239**	**15,854**
		TOTAL for National Aeronautics and Space Administration		**2,051,239**	**15,854**
		TOTAL Federal Non-Research Support - On Campus		**7,140,923**	**679,431**

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Federal Non-Research Support - On Campus
FY 2020 Expenditures

Federal Agency	Government Contract Number	Master Project Name	CFDA #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
TOTAL Federal Non-Research Support - On Campus				**7,140,923**	**679,431**

Appendix C
Massachusetts Institute of Technology
Federal Non-Research Support - Passthrough - On Campus
FY 2020 Expenditures by Prime Sponsor and Sponsor

Prime Sponsor Name	Project WBS id	Passthrough Number	WBS Project Name	CFDA #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
DEPARTMENT OF DEFENSE						
SUNY: AIM Photonics						
DEPARTMENT OF DEFENSE	2748749	AGMT. DTD. 3/22/2016	IP-IMI	12.800	372,761	-
			Total for SUNY: AIM Photonics		**372,761**	**-**
Lincoln Laboratory						
DEPARTMENT OF DEFENSE	2748510	PO# 7000423020	Support of the MIT Security Studies Program	12.U80	0	-
DEPARTMENT OF DEFENSE	2748761	PO# 7000456125	Support of the MIT Security Studies Program	12.U84	41,437	-
			Total for Lincoln Laboratory		**41,437**	**-**
The Advanced Robotics for Manufacturing (ARM) Institute						
DEPARTMENT OF DEFENSE	2748498	ARM-EWD-17-02-F-04	Teach Bot Apprentice Education and Training System	12.U79	4,596	4,029
			Total for The Advanced Robotics for Manufacturing (ARM) Institute		**4,596**	**4,029**
American Society/Engineering Education						
DEPARTMENT OF DEFENSE	2291100	LETTER DATED 8/11/99	NDSEG Fellowship Program	12.300	2,162,908	-
			Total for American Society/Engineering Education		**2,162,908**	**-**
Florida State University						
DEPARTMENT OF DEFENSE	2748751	R02117	A SUMMER PROGRAM TO INTRODUCE ENGINEER RESEARCH TO UNDERGRADUATES	12.300	12,614	-
			Total for Florida State University		**12,614**	**-**
Draper Laboratory Incorporated						
DEPARTMENT OF DEFENSE	2748410	DRAPER P.O. PARENT	Draper Fellow Reporting Parent FY 18/19	12.U64	-1,010	-
DEPARTMENT OF DEFENSE	2747661	PO 001 0001039813	Draper Fellow Reporting Parent FY 16/17	12.U45	6,518	-
DEPARTMENT OF DEFENSE	2747666	PO 001 0001040136	Draper Fellow Reporting Parent FY 16/17	12.U46	0	-
DEPARTMENT OF DEFENSE	2747689	PO 0010001045504	Draper Fellow Reporting Parent FY 17/18	12.U48	0	-
DEPARTMENT OF DEFENSE	2747688	PO 0010001045514	Draper Fellow Reporting Parent FY 17/18	12.U47	0	-
DEPARTMENT OF DEFENSE	2747690	PO 0010001045516	Draper Fellow Reporting Parent FY 17/18	12.U49	0	-
DEPARTMENT OF DEFENSE	2748058	PO 0010001045550	Draper Fellow Reporting Parent FY 17/18	12.U51	0	-
DEPARTMENT OF DEFENSE	2747691	PO 0010001045551	Draper Fellow Reporting Parent FY 17/18	12.U50	0	-
DEPARTMENT OF DEFENSE	2748063	PO 0010001045574	Draper Fellow Reporting Parent FY 17/18	12.U53	0	-
DEPARTMENT OF DEFENSE	2748062	PO 0010001045603	Draper Fellow Reporting Parent FY 17/18	12.U52	0	-
DEPARTMENT OF DEFENSE	2748064	PO 0010001045616	Draper Fellow Reporting Parent FY 17/18	12.U54	0	-

Appendix C
Massachusetts Institute of Technology
Federal Non-Research Support - Passthrough - On Campus
FY 2020 Expenditures by Prime Sponsor and Sponsor

Prime Sponsor Name	Project WBS id	Passthrough Number	WBS Project Name	CFDA #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
DEPARTMENT OF DEFENSE	2748065	PO 0010001045623	Draper Fellow Reporting Parent FY 17/18	12.U55	0	-
DEPARTMENT OF DEFENSE	2748069	PO 0010001045698	Draper Fellow Reporting Parent FY 17/18	12.U56	0	-
DEPARTMENT OF DEFENSE	2748073	PO 0010001045714	Draper Fellow Reporting Parent FY 17/18	12.U58	0	-
DEPARTMENT OF DEFENSE	2748070	PO 0010001045728	Draper Fellow Reporting Parent FY 17/18	12.U57	0	-
DEPARTMENT OF DEFENSE	2748075	PO 0010001045788	Draper Fellow Reporting Parent FY 17/18	12.U59	0	-
DEPARTMENT OF DEFENSE	2748182	PO 0010001046262	Draper Fellow Reporting Parent FY 17/18	12.U63	-646	-
DEPARTMENT OF DEFENSE	2748083	PO 0010001046289	Draper Fellow Reporting Parent FY 17/18	12.U60	0	-
DEPARTMENT OF DEFENSE	2748085	PO 0010001046292	Draper Fellow Reporting Parent FY 17/18	12.U62	0	-
DEPARTMENT OF DEFENSE	2748084	PO 0010001046299	Draper Fellow Reporting Parent FY 17/18	12.U61	0	-
DEPARTMENT OF DEFENSE	2748424	PO001-0001050047	Draper Fellow Reporting Parent FY 18/19	12.U66	-6,884	-
DEPARTMENT OF DEFENSE	2748426	PO001-0001050049	Draper Fellow Reporting Parent FY 18/19	12.U67	557	-
DEPARTMENT OF DEFENSE	2748427	PO001-0001050050	Draper Fellow Reporting Parent FY 18/19	12.U68	-7,076	-
DEPARTMENT OF DEFENSE	2748655	PO001-0001050067	Draper Fellow Reporting Parent FY 18/19	12.U82	-51	-
DEPARTMENT OF DEFENSE	2748429	PO001-0001050068	Draper Fellow Reporting Parent FY 18/19	12.U69	660	-
DEPARTMENT OF DEFENSE	2748437	PO001-0001050104	Draper Fellow Reporting Parent FY 18/19	12.U70	-2	-
DEPARTMENT OF DEFENSE	2748488	PO001-0001050202	Draper Fellow Reporting Parent FY 18/19	12.U78	1,010	-
DEPARTMENT OF DEFENSE	2748472	PO001-0001050335	Draper Fellow Reporting Parent FY 18/19	12.U75	0	-
DEPARTMENT OF DEFENSE	2748449	PO001-0001050336	Draper Fellow Reporting Parent FY 18/19	12.U73	-220	-
DEPARTMENT OF DEFENSE	2748452	PO001-0001050395	Draper Fellow Reporting Parent FY 18/19	12.U74	-10,728	-
DEPARTMENT OF DEFENSE	2748479	PO001-0001050669	Draper Fellow Reporting Parent FY 18/19	12.U76	-9,274	-
DEPARTMENT OF DEFENSE	2748482	PO001-0001050671	Draper Fellow Reporting Parent FY 18/19	12.U77	-12,211	-
DEPARTMENT OF DEFENSE	2748511	PO001-0001050935	Draper Fellow Reporting Parent FY 18/19	12.U81	-970	-
DEPARTMENT OF DEFENSE	2748445	PO001-000105274	Draper Fellow Reporting Parent FY 18/19	12.U72	-12,880	-
DEPARTMENT OF DEFENSE	2389476	PO001-0001054378	Draper Fellow Reporting Parent FY19/20	12.U03	73,449	-
DEPARTMENT OF DEFENSE	2389478	PO001-0001054382	Draper Fellow Reporting Parent FY19/20	12.U05	69,558	-
DEPARTMENT OF DEFENSE	2389477	PO001-0001054392	Draper Fellow Reporting Parent FY19/20	12.U04	66,856	-
DEPARTMENT OF DEFENSE	2389475	PO001-0001054506	Draper Fellow Reporting Parent FY19/20	12.U02	78,014	-
DEPARTMENT OF DEFENSE	2389483	PO001-0001054514	Draper Fellow Reporting Parent FY19/20	12.U10	81,682	-
DEPARTMENT OF DEFENSE	2389485	PO001-0001054515	Draper Fellow Reporting Parent FY19/20	12.U12	72,655	-
DEPARTMENT OF DEFENSE	2389479	PO001-0001054603	Draper Fellow Reporting Parent FY19/20	12.U06	72,716	-
DEPARTMENT OF DEFENSE	2389480	PO001-0001054604	Draper Fellow Reporting Parent FY19/20	12.U07	37,771	-
DEPARTMENT OF DEFENSE	2389481	PO001-0001054605	Draper Fellow Reporting Parent FY19/20	12.U08	11,501	-
DEPARTMENT OF DEFENSE	2389482	PO001-0001054606	Draper Fellow Reporting Parent FY19/20	12.U09	72,716	-
DEPARTMENT OF DEFENSE	2389487	PO001-0001054614	Draper Fellow Reporting Parent FY19/20	12.U14	29,694	-

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Massachusetts Institute of Technology
Federal Non-Research Support - Passthrough - On Campus
FY 2020 Expenditures by Prime Sponsor and Sponsor

Prime Sponsor Name	Project WBS id	Passthrough Number	WBS Project Name	CFDA #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
DEPARTMENT OF DEFENSE	2389490	PO001-0001054616	Draper Fellow Reporting Parent FY19/20	12.U17	53,450	-
DEPARTMENT OF DEFENSE	2389499	PO001-0001054618	Draper Fellow Reporting Parent FY19/20	12.U26	63,200	-
DEPARTMENT OF DEFENSE	2389502	PO001-0001054619	Draper Fellow Reporting Parent FY19/20	12.U27	65,077	-
DEPARTMENT OF DEFENSE	2389498	PO001-0001054621	Draper Fellow Reporting Parent FY19/20	12.U25	66,960	-
DEPARTMENT OF DEFENSE	2389493	PO001-0001054622	Draper Fellow Reporting Parent FY19/20	12.U20	63,343	-
DEPARTMENT OF DEFENSE	2389494	PO001-0001054623	Draper Fellow Reporting Parent FY19/20	12.U21	63,805	-
DEPARTMENT OF DEFENSE	2389496	PO001-0001054624	Draper Fellow Reporting Parent FY19/20	12.U23	53,450	-
DEPARTMENT OF DEFENSE	2389503	PO001-0001054626	Draper Fellow Reporting Parent FY19/20	12.U28	6,973	-
DEPARTMENT OF DEFENSE	2389497	PO001-0001054627	Draper Fellow Reporting Parent FY19/20	12.U24	53,450	-
DEPARTMENT OF DEFENSE	2389504	PO001-0001054628	Draper Fellow Reporting Parent FY19/20	12.U29	64,944	-
DEPARTMENT OF DEFENSE	2389491	PO001-0001054688	Draper Fellow Reporting Parent FY19/20	12.U18	53,450	-
DEPARTMENT OF DEFENSE	2389495	PO001-0001054689	Draper Fellow Reporting Parent FY19/20	12.U22	53,450	-
DEPARTMENT OF DEFENSE	2389486	PO001-0001054690	Draper Fellow Reporting Parent FY19/20	12.U13	53,450	-
DEPARTMENT OF DEFENSE	2389484	PO001-0001054691	Draper Fellow Reporting Parent FY19/20	12.U11	53,995	-
DEPARTMENT OF DEFENSE	2389505	PO001-0001054820	Draper Fellow Reporting Parent FY19/20	12.U30	53,533	-
DEPARTMENT OF DEFENSE	2389507	PO001-0001054877	Draper Fellow Reporting Parent FY19/20	12.U32	54,543	-
DEPARTMENT OF DEFENSE	2389506	PO001-0001054878	Draper Fellow Reporting Parent FY19/20	12.U31	53,450	-
DEPARTMENT OF DEFENSE	2389511	PO001-0001055040	Draper Fellow Reporting Parent FY19/20	12.U33	53,450	-
DEPARTMENT OF DEFENSE	2389514	PO001-0001055211	Draper Fellow Reporting Parent FY19/20	12.U34	53,450	-
DEPARTMENT OF DEFENSE	2389563	PO001-0001055613	Draper Fellow Reporting Parent FY19/20	12.U36	30,795	-
DEPARTMENT OF DEFENSE	2389535	PO001-0001055623	Draper Fellow Reporting Parent FY19/20	12.U35	17,988	-
DEPARTMENT OF DEFENSE	2389488	PO001-000105617	Draper Fellow Reporting Parent FY19/20	12.U15	120,467	-
DEPARTMENT OF DEFENSE	2389492	PO001-000105620	Draper Fellow Reporting Parent FY19/20	12.U19	27,695	-
DEPARTMENT OF DEFENSE	2389603	PO001-0001058212	Draper Fellow Reporting Parent FY20/21	12.U40	3,804	-
DEPARTMENT OF DEFENSE	2389611	PO001-0001058257	Draper Fellow Reporting Parent FY20/21	12.U42	4,087	-
DEPARTMENT OF DEFENSE	2389612	PO001-0001058272	Draper Fellow Reporting Parent FY20/21	12.U43	4,087	-
DEPARTMENT OF DEFENSE	2389601	PO001-0001058287	Draper Fellow Reporting Parent FY20/21	12.U39	3,716	-
DEPARTMENT OF DEFENSE	2389608	PO001-0001058290	Draper Fellow Reporting Parent FY20/21	12.U41	3,716	-
DEPARTMENT OF DEFENSE	2389613	PO001-0001058319	Draper Fellow Reporting Parent FY20/21	12.U44	3,716	-
			Total for Draper Laboratory Incorporated		**1,870,902**	**-**
Advanced Functional Fabrics of America (AFFOA)						
DEPARTMENT OF DEFENSE	2748720	PO NO. 589	Shape-Shifting Climate-Adaptive Garments	12.U83	21,841	-
			Total for Advanced Functional Fabrics of America (AFFOA)		**21,841**	**-**
			TOTAL for Department of Defense		**4,487,060**	**4,029**

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DEPARTMENT OF COMMERCE						
U Delaware: National Institute for Innovation in Manufacturing Biopharmaceuticals (NIIMBL)						
DEPARTMENT OF COMMERCE	2748768	AGREEMENT EFFECTIVE 5/4/17	The National Institute for Innovation in Manufacturing Biopharmaceuticals (NIIMBL) - Memberships	11.619	47,218	-
DEPARTMENT OF COMMERCE	2748701	PC1.0-7	NIIMBL Projects	11.619	189,401	-
			Total for U Delaware: National Institute for Innovation in Manufacturing Biopharmaceuticals (NIIMBL)		**236,619**	**-**
			TOTAL for Department of Commerce		**236,619**	**-**

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DEPARTMENT OF ENERGY						
Jefferson Laboratories						
DEPARTMENT OF ENERGY	2389422	19-D0254	Bowie: a Bayesian Optimization frameWork for Intensity frontier Experiments	81.U01	12,443	-
			Total for Jefferson Laboratories		**12,443**	**-**
Jefferson Science Associates, LLC						
DEPARTMENT OF ENERGY	2389559	20-D0103	Development of streaming readout at the Electron-Ion Collider Center at Jefferson Lab - Ivica Friscic	81.U04	10,000	-
DEPARTMENT OF ENERGY	2389534	Agrmt dated 06/11/20	Installation, Commissioning and Calibration of the full GlueX DIRC detector (for the GlueX experiment at Hall D of Jefferson Laboratory)	81.U03	3,458	-
			Total for Jefferson Science Associates, LLC		**13,458**	**-**
SURA / Jefferson Lab						
DEPARTMENT OF ENERGY	2389347	AGMT DATED 6/18/18	Jefferson Science Lab Graduate Fellowship Award - Yunjie Yang	81.049	11,000	-
			Total for SURA / Jefferson Lab		**11,000**	**-**
Krell Institute						
DEPARTMENT OF ENERGY	2389146	AGREEMENT EFF. 09/01/2016	DOE NNSA SSGF fellowships	81.112	18,906	-
DEPARTMENT OF ENERGY	2225900	FELLOWSHIP COMMITMENT	DOE-CSGF Krell Institute	81.049	39,002	-
			Total for Krell Institute		**57,908**	**-**
Battelle Energy Alliance, LLC						
DEPARTMENT OF ENERGY	2748780	RELEASE 00003/CONTRACT 00112583	INL-NUC Collaboration Activities at Massachusetts Institute of Technology	81.U05	192,606	-
			Total for Battelle Energy Alliance, LLC		**192,606**	**-**
			TOTAL for Department of Energy		**287,415**	**-**

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MISCELLANEOUS FEDERAL GOVT						
Ashesi University						
MISCELLANEOUS FEDERAL GOVT	2748627	AGMT DTD 9/1/18	Accelerating Local Potential	98.U01	125,620	-
			Total for Ashesi University		**125,620**	**-**
Institute of International Education, Inc.						
MISCELLANEOUS FEDERAL GOVT	2389414	HHH1801_MIT_7.1.18	Hubert H. Humphrey Fellowship Program (SPURS) 2018-2019	19.010	57,289	-
MISCELLANEOUS FEDERAL GOVT	2389548	HHH1901_MIT_7.1.19	Hubert H. Humphrey Fellowship Program (SPURS) 2019-2020	19.010	202,478	-
			Total for Institute of International Education, Inc.		**259,767**	**-**
			TOTAL for Miscellaneous Federal Govt		**385,387**	**-**

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NATIONAL AERONAUTICS AND SPACE ADMINISTRATION						
Baylor College of Medicine						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	2748663	7000000324 / TRISH PROJ# DS002	Transitional Research Institute	43.003	4,620	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	2748341	PO# 7000000554	Dean of Science Education	43.003	45,337	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	2389522	PO# 7000000937	In Situ Expression Analysis of Therapeutic Microbes with Gastrointestinal Devices	43.003	64,742	-
			Total for Baylor College of Medicine		**114,700**	**-**
University of Arizona						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	2747876	AGRMT DATED 11/13/16	REXIS - REgolith X-ray Imaging Spectrometer Phase E Operations	43.U09	89,791	-
			Total for University of Arizona		**89,791**	**-**
Space Telescope Science Institute						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	2389125	HST-HF2-51372.001-A	Characterizing Small Planets Around Bright Stars (Hubble Fellowship - Diana Dragomir)	43.U02	6,641	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	2389368	HST-HF2-51410.001-A	Fundamental Physics in the Era of Gravitational Wave Astronomy (Fellow: Maximiliano Isi)	43.U04	89,692	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	2389367	HST-HF2-51421.001-A	Radiation Signatures of the First Galaxies and Supermassive Black Holes (Fellow: Aaron Smith)	43.U03	97,128	-
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.U06	79,230	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	2389524	HST-HF2-51438.001-A	Bridging the gap between galaxy and star formation with star clusters (HF2-51438; Fellow: Hui Li)	43.U05	62,113	-
			Total for Space Telescope Science Institute		**334,804**	**-**
Commonwealth of Massachusetts - Miscellaneous						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	2732483	MASSACHUSETTS SPACE GRANT CONSORTUIM	Massachusetts Space Grant Consortium	43.U07	1,060	-
			Total for Commonwealth of Massachusetts - Miscellaneous		**1,060**	**-**
Smithsonian Inst. - Astrophysical Observatory						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	2389123	PF6-170156	Quest for the Elusive Intermediate-mass Black Holes (Einstein Fellow - Dheeraj Pasham - yr 3)	43.U01	6,611	-
			Total for Smithsonian Inst. - Astrophysical Observatory		**6,611**	**-**

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Prime Sponsor Name	Project WBS id	Passthrough Number	WBS Project Name	CFDA #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
CalTech - Jet Propulsion Lab						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	2389330	RSA 1603295	Enabling Technologies for Extreme Precision Radial Velocity Measurements (Sagan Fellowship: Halverson)	43.001	17,299	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	2748675	RSA 1616499	Concurrent Engineering & Lifecycle Product Development: Research Opportunities for the next Generation of Space Systems Engineers	43.001	21,420	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	2748989	RSA NO. 1643310	Concurrent Engineering & Lifecycle Product Development: Research Opportunities for the next Generation of Space Systems Engineers	43.001	1,268	-
			Total for CalTech - Jet Propulsion Lab		**39,986**	**-**
Logistics Management Institute						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	2748588	SB17-00052	Convergence Innovation for ARMD	43.U10	-78	-
			Total for Logistics Management Institute		**-78**	**-**
			TOTAL for National Aeronautics and Space Administration		**586,874**	**-**
			TOTAL Federal Non-Research Support - Passthrough - On Campus		**$5,983,354**	**$4,029**

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Massachusetts Institute of Technology
Federal Non-Research Support - Passthrough - On Campus
FY 2020 Expenditures by Prime Sponsor and Sponsor

Prime Sponsor Name	Project WBS id	Passthrough Number	WBS Project Name	CFDA #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
CalTech - Jet Propulsion Lab						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	2389330	RSA 1603295	Enabling Technologies for Extreme Precision Radial Velocity Measurements (Sagan Fellowship: Halverson)	43.001	17,299	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	2748675	RSA 1616499	Concurrent Engineering & Lifecycle Product Development: Research Opportunities for the next Generation of Space Systems Engineers	43.001	21,420	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	2748989	RSA NO. 1643310	Concurrent Engineering & Lifecycle Product Development: Research Opportunities for the next Generation of Space Systems Engineers	43.001	1,268	-
			Total for CalTech - Jet Propulsion Lab		**39,986**	**-**
Logistics Management Institute						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	2748588	SB17-00052	Convergence Innovation for ARMD	43.U10	-78	-
			Total for Logistics Management Institute		**-78**	**-**
			TOTAL for National Aeronautics and Space Administration		**586,874**	**-**
			TOTAL Federal Non-Research Support - Passthrough - On Campus		**$5,983,354**	**$4,029**

SECTION III

REPORTS ON INTERNAL CONTROL AND COMPLIANCE AND SCHEDULE OF FINDINGS AND QUESTIONABLE 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, 2020, and the related consolidated statements of activities and of cash flows for the year then ended, and the related notes to the financial statements, and have issued our report thereon dated September 11, 2020, except with respect to Note K to the consolidated financial statements and the opinion on the supplemental schedule of financial responsibility, as to which the date is March 18, 2021, which included an emphasis of matter paragraph related to the Institute changing the manner in which it presents restricted cash and certain other cash balances within the statements of cash flows in 2020 as discussed in Note A.

Internal Control Over Financial Reporting

In planning and performing our audit of the financial statements, we considered the Institute's internal control over financial reporting ("internal control") as a basis for designing the audit procedures that are appropriate in the circumstances for the purpose of expressing our opinion on the 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 may exist that have not been identified.

Compliance and Other Matters

As part of obtaining reasonable assurance about whether the Institute's financial statements are free from material misstatement, we performed tests of its compliance with certain provisions of laws, regulations, contracts and grant agreements, noncompliance with which could have a direct and material effect on the

financial statements. However, providing an opinion on compliance with those provisions was not an objective of our audit, and accordingly, we do not express such an opinion. The results of our tests disclosed no instances of noncompliance or other matters that are required to be reported under *Government Auditing Standards*.

Purpose of this Report

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

PricewaterhouseCoopers LLP

Boston, Massachusetts
September 11, 2020, except with respect to Note K to the consolidated financial statements and the opinion on the supplemental schedule of financial responsibility, as to which the date is March 18, 2021

Report of Independent Auditors on Compliance with Requirements That Could Have a Direct and Material Effect on Each Major Program and on Internal Control Over Compliance in Accordance with the Uniform Guidance

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

Report on Compliance for Each Major Federal Program

We have audited the Massachusetts Institute of Technology and its subsidiaries' (the "Institute") compliance with the types of compliance requirements described 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, 2020. The Institute's major federal programs are identified in the summary of auditors' results section of the accompanying schedule of findings and questioned costs.

Management's Responsibility

Management is responsible for compliance with federal statutes, regulations and the terms and conditions of its federal awards applicable to its federal programs.

Auditors' Responsibility

Our responsibility is to express an opinion on compliance for each of the Institute's major federal programs based on our audit of the types of compliance requirements referred to above. We conducted our audit of compliance in accordance with auditing standards generally accepted in the United States of America; 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). Those standards and the Uniform Guidance require that we plan and perform the audit to obtain reasonable assurance about whether noncompliance with the types of compliance requirements referred to above that could have a direct and material effect on a major federal program occurred. An audit includes examining, on a test basis, evidence about the Institute's compliance with those requirements and performing such other procedures as we considered necessary in the circumstances.

We believe that our audit provides a reasonable basis for our opinion on compliance for each major federal program. However, our audit does not provide a legal determination of the Institute's compliance.

Opinion on Each Major Federal Program

In our opinion, the Massachusetts Institute of Technology and its subsidiaries complied, in all material respects, with the types of 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, 2020.

Other Matter

As indicated in Part I to the accompanying Schedule of Findings and Questioned Costs, we have audited the Student Financial Assistance cluster as a major program. Also, as indicated in the first paragraph of this report, we performed our audit of compliance using the compliance requirements contained in the

OMB Compliance Supplement, including those contained in Part V 5.3, Compliance Requirement N, Special Tests and Provisions, Section 10 "Gramm-Leach-Bliley Act-Student Information Security." This section includes three suggested audit procedures with respect to verification that the institution (1) designated an individual to coordinate the information security program, (2) performed a risk assessment that addresses the three required areas in 16 CFR 314.4(b), and (3) documented a safeguard for each risk identified. Our procedures in relation to these three items were limited to inquiry of and obtaining written representation from management and obtaining and reading management's documentation related to these three items. Our procedures did not include an analysis of the adequacy or completeness of the risk assessment performed or the safeguards for each risk identified by management.

Report on Internal Control Over Compliance

Management of the Institute is responsible for establishing and maintaining effective internal control over compliance with the types of compliance requirements referred to above. In planning and performing our audit of compliance, we considered the Institute's internal control over compliance with the types of requirements that could have a direct and material effect on each major federal program to determine the auditing procedures that are appropriate in the circumstances for the purpose of expressing an opinion on compliance for each major federal program 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 internal control over compliance. Accordingly, we do not express an opinion on the effectiveness of the Institute's 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 first paragraph of this section and was not designed to identify all deficiencies in internal control over compliance that might be material weaknesses or significant deficiencies. We did not identify any deficiencies in internal control over compliance that we consider to be material weaknesses. However, material weaknesses may exist that have not been identified.

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

PricewaterhouseCoopers LLP

Boston, Massachusetts
March 18, 2021

Massachusetts Institute of Technology
Schedule of Findings and Questioned Costs
Year Ended June 30, 2020

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 opinion
Any audit findings disclosed that are required to be reported in accordance with 2 CFR 200.516(a)?	___ Yes _X_ No

Identification of major programs

CFDA Number	Name of Federal Program or Cluster
Various	Research & Development Cluster
Various	Student Financial Assistance Cluster
98.001	Center of Excellence in Energy Research, Education and Entrepreneurship

Dollar threshold used to distinguish between Type A and Type B programs	$4,933,882
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, 2020

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