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, 2018

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, 2018

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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, 2018 and 2017, and the related consolidated statement of activities for the year ended June 30, 2018, and statements of cash flows for the years ended June 30, 2018 and 2017, 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 financial position of the Massachusetts Institute of Technology and its subsidiaries as of June 30, 2018 and 2017 and the changes in their net assets for the year ended June 30, 2018 and their cash

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flows for the years ended June 30, 2018 and 2017 in accordance with accounting principles generally accepted in the United States of America.

Other Matters

We previously audited the consolidated statement of financial position as of June 30, 2017, and the related consolidated statements of activities and of cash flows for the year then ended (not presented herein), and in our report dated September 8, 2017, 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, 2017 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, 2018 is presented for purposes of additional analysis as required by Title 2 U.S. *Code of Federal Regulations* Part 200, *Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards* (Uniform Guidance) and is not a required part of the consolidated financial statements. 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 is fairly stated, in all material respects, in relation to the consolidated financial statements taken as a whole.

Other Reporting Required by *Government Auditing Standards*

In accordance with *Government Auditing Standards*, we have also issued our report dated September 14, 2018 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, 2018. 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.

Boston, Massachusetts
September 14, 2018

Massachusetts Institute of Technology

Consolidated Statements of Financial Position

at June 30, 2018 and 2017

(in thousands of dollars)	2018	2017
Assets		
Cash	$ 428,030	$ 399,825
Accounts receivable, net	233,068	225,648
Pledges receivable, net, at fair value	560,142	533,227
Contracts in progress, principally US government	98,921	82,334
Deferred charges, inventories, and other assets	169,566	155,754
Student notes receivable, net	30,481	37,021
Investments, at fair value	20,743,773	19,045,347
Net asset position - retiree welfare plan	124,686	52,986
Land, buildings, and equipment (at cost of $5,409,653 for June 2018; $4,990,128 for June 2017), net of accumulated depreciation	3,684,377	3,397,070
Total assets	**$ 26,073,044**	**$ 23,929,212**
Liabilities and Net Assets		
Liabilities:		
Accounts payable, accruals, and other liabilities	$ 486,962	$ 457,514
Liabilities due under life income fund agreements, at fair value	187,449	154,470
Deferred revenue and other credits	121,464	126,531
Advance payments	449,230	426,562
Borrowings, net of unamortized issuance costs	3,259,389	3,287,545
Government advances for student loans	23,711	30,015
Net liability position - defined benefit pension plan	28,058	321,517
Total liabilities	**4,556,263**	**4,804,154**
Net Assets:		
Unrestricted	8,799,838	7,667,379
Temporarily restricted	9,158,017	8,037,426
Permanently restricted	3,558,926	3,420,253
Total net assets	**21,516,781**	**19,125,058**
Total liabilities and net assets	**$ 26,073,044**	**$ 23,929,212**

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, 2018

(with summarized financial information for the year ended June 30, 2017)

(in thousands of dollars)	2018 Unrestricted	2018 Temporarily Restricted	2018 Permanently Restricted	Total 2018	Total 2017
Operating Activities					
Operating Revenues					
Tuition and similar revenues, net of discount of $347,039 in 2018 and $318,610 in 2017	$ 353,721	$ -	$ -	$ 353,721	$ 361,476
Research revenues:					
Campus	681,809	-	-	681,809	706,939
Lincoln	981,293	-	-	981,293	969,257
SMART	42,183	-	-	42,183	33,284
Total research revenues	1,705,285	-	-	1,705,285	1,709,480
Gifts and bequests for current use	220,220	-	-	220,220	187,524
Fees and services	210,298	-	-	210,298	168,266
Other programs	76,926	-	-	76,926	82,141
Support from investments:					
Endowment	663,203	-	-	663,203	628,669
Other investments	168,447	-	-	168,447	158,358
Total support from investments	831,650	-	-	831,650	787,027
Auxiliary enterprises	131,841	-	-	131,841	127,720
Net asset reclassifications and transfers	96,701	-	-	96,701	128,154
Total operating revenues	$ 3,626,642	$ -	$ -	$ 3,626,642	$ 3,551,788
Operating Expenses					
Salaries and wages	$ 1,471,513	$ -	$ -	$ 1,471,513	$ 1,415,024
Employee benefits	335,735	-	-	335,735	337,030
Supplies and services	1,097,347	-	-	1,097,347	1,058,683
Subrecipient agreements	148,006	-	-	148,006	139,159
Utilities, rent, and repairs	225,897	-	-	225,897	213,978
Depreciation	178,630	-	-	178,630	168,809
Interest expense	120,749	-	-	120,749	131,341
Total operating expenses	3,577,877	-	-	3,577,877	3,464,024
Results of operations	$ 48,765	$ -	$ -	$ 48,765	$ 87,764
Non-Operating Activities					
Pledge revenue	$ -	$ 146,720	$ 40,408	$ 187,128	$ 287,245
Gifts and bequests	-	-	64,320	64,320	98,746
Investment income	1,852	1,786	197	3,835	3,743
Net gain on investments	970,980	1,397,266	17,356	2,385,602	2,185,920
Distribution of accumulated investment gains	(240,472)	(426,574)	-	(667,046)	(640,877)
Other changes	62,242	12,073	7,760	82,075	45,406
Postretirement plan changes other than net periodic benefit cost	383,745	-	-	383,745	256,184
Net asset reclassifications and transfers	(94,653)	(10,680)	8,632	(96,701)	(128,154)
Total non-operating activities	1,083,694	1,120,591	138,673	2,342,958	2,108,213
Increase in net assets	1,132,459	1,120,591	138,673	2,391,723	2,195,977
Net assets at the beginning of the year	7,667,379	8,037,426	3,420,253	19,125,058	16,929,081
Net assets at the end of the year	**$ 8,799,838**	**$ 9,158,017**	**$ 3,558,926**	**$ 21,516,781**	**$ 19,125,058**

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, 2018 and 2017

(in thousands of dollars)	2018	2017
Cash Flow from Operating Activities		
Increase in net assets	$ 2,391,723	$ 2,195,977
Adjustments to reconcile change in net assets to net cash used in operating activities:		
Net gain on investments	(2,385,602)	(2,185,920)
Change in retirement plan asset, net of accrued benefit liability	(365,159)	(227,498)
Depreciation	178,630	168,809
Net gain on life income funds	(23,386)	(29,824)
Amortization of bond premiums and discounts and other adjustments	3,176	5,577
Change in operating assets and liabilities:		
Pledges receivable	(26,915)	75,838
Accounts receivable	(7,420)	(24,636)
Contracts in progress	(16,587)	(1,531)
Deferred charges, inventories, and other assets	(13,812)	(19,689)
Accounts payable, accruals, and other liabilities, excluding building and equipment accruals	45,377	(83,509)
Liabilities due under life income fund agreements	49,138	23,676
Deferred revenue and other credits	(5,067)	(9,895)
Advance payments	22,668	(8,658)
Reclassify donated securities	(10,147)	(5,979)
Reclassify investment income	(3,835)	(3,743)
Reclassify contributions restricted for long-term investment	(195,538)	(347,570)
Net cash used in operating activities	(362,756)	(478,575)
Cash Flow from Investing Activities		
Purchase of land, buildings, and equipment	(486,413)	(473,134)
Purchases of investments	(32,952,998)	(32,028,007)
Proceeds from sale of investments	33,663,560	32,186,808
Student notes issued	(5,439)	(6,736)
Collections from student notes	11,694	11,838
Net cash provided by (used in) investing activities	230,404	(309,231)
Cash Flow from Financing Activities		
Contributions restricted for long-term investment	195,538	347,570
Payments to beneficiaries of life income funds	(16,159)	(14,422)
Proceeds from sale of donated securities restricted for endowment	10,147	5,980
Increase in investment income for restricted purposes	3,835	3,743
Proceeds from borrowings	-	500,000
Repayment of borrowings	(26,500)	(98,090)
Decrease in government advances for student loans	(6,304)	(6,158)
Net cash provided by financing activities	160,557	738,623
Net increase (decrease) in cash	28,205	(49,183)
Cash at the beginning of the year	399,825	449,008
Cash at the end of the year	**$ 428,030**	**$ 399,825**

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 three categories based on the existence or absence of donor-imposed restrictions. The categories are permanently restricted, temporarily restricted, and unrestricted net assets. Unconditional promises to give (pledges) are recorded as receivables and revenues within the appropriate net asset category.

Permanently restricted net assets include gifts, pledges, trusts and remainder interests, and income and gains that are required by donors to be permanently retained. Pledges, trusts, and remainder interests are reported at their estimated fair values.

Temporarily restricted net assets include gifts, pledges, trusts and remainder interests, and income and gains that can be expended but 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 permanently restricted gifts that have not been appropriated for spending). Gifts specified for the acquisition or construction of long-lived assets are reported as temporarily restricted net assets until the monies are expended and the long-lived assets (i.e., buildings) are put into use, at which point they are reclassified to unrestricted net assets. Net unrealized losses on permanently restricted endowment funds for which the book value exceeds market value are recorded as a reduction to unrestricted net assets.

Unrestricted net assets are all the remaining net assets of MIT. Donor-restricted gifts and distributed restricted endowment income for which the restriction is met within the same year of gift or distribution are reported as unrestricted revenue. Gifts of long-lived assets are reported as unrestricted revenue.

Net asset reclassifications and transfers consist primarily of payments on unrestricted pledges and use of building funds in accordance with donor restrictions for buildings put into use during the year. Expirations of temporary restrictions on net assets, release of permanent restrictions by a donor, and change of restrictions imposed by donors are also reported as reclassifications of net assets among unrestricted, temporarily restricted, and permanently restricted net assets.

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 operations include tuition, research revenues, unrestricted gifts and bequests for current use, fees and services, other programs, support from investments, auxiliary enterprises, net asset reclassifications and transfers, and operating expenditures. Results of operations are displayed in the Consolidated Statement of Activities.

A. Accounting Policies (continued)

Tax Status

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

On December 22, 2017, the Tax Cuts and Jobs Act (the "Act") was enacted. The Act impacts the Institute in several ways, including the addition of excise taxes on executive compensation and net investment income, as well as new rules for calculating unrelated business taxable income. The overall impact of the Act remains uncertain until further regulatory guidance is issued to assist the Institute in calculating tax liabilities.

US GAAP requires MIT to evaluate tax positions taken by the Institute and recognize a tax liability (or asset) if the Institute has taken an uncertain 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, 2018, there are no significant uncertain positions taken or expected to be taken, apart from those impacted by the Act. The Institute continues to evaluate the impact of the Act on current and future tax positions.

Cash

Certain cash balances, totaling $97.8 million and $68.9 million at June 30, 2018 and 2017, respectively, are restricted for use under certain sponsored research agreements or are held on behalf of a related party.

The Institute had approximately $418.5 million and $390.2 million at June 30, 2018 and 2017, respectively, of its cash accounts with a single institution. The Institute has not experienced any losses associated with deposits at this institution.

Advance Payments

Amounts received by MIT from the US government, corporations, industrial sources, foundations, and other non-MIT sponsors under the terms of agreements that generally require the exchange of assets, rights, or privileges between MIT and the sponsor are recorded as advance payments. Revenue is recognized as MIT fulfills the terms of the agreements.

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 $46.2 million and $50.9 million during 2018 and 2017, respectively. Land, buildings, and equipment at June 30, 2018 and 2017, are shown in Table 1 below.

Table 1. Land, Buildings, and Equipment

(in thousands of dollars)	2018	2017
Land	$ 107,557	$ 93,407
Land improvements	73,815	72,773
Educational buildings	4,127,736	3,986,375
Equipment	306,364	292,087
Software	68,328	61,730
Total	4,683,800	4,506,372
Less: accumulated depreciation	(1,725,276)	(1,593,058)
Construction in progress	723,249	479,865
Software projects in progress	2,604	3,891
Net land, buildings, and equipment	**$ 3,684,377**	**$ 3,397,070**

Depreciation expense was $178.6 million in 2018 and $168.8 million in 2017. Net interest expense of $22.1 million and $10.6 million was capitalized during 2018 and 2017, respectively, in connection with MIT's construction projects.

A. Accounting Policies (continued)

Tuition and Student Support

Tuition and similar revenues, shown in Table 2 below, include tuition and fees for degree programs as well as tuition and fees for executive and continuing education programs at MIT.

Table 2. Tuition and Similar Revenues

(in thousands of dollars)	2018	2017
Undergraduate and graduate programs	$ 638,083	$ 617,368
Executive and continuing education programs	62,677	62,718
Total	700,760	680,086
Less: tuition discount	(347,039)	(318,610)
Net tuition and similar revenues	**$ 353,721**	**$ 361,476**

Tuition support 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. Tuition support from MIT sources is displayed as tuition discount. Total student support granted to students was $594.6 million and $555.3 million in 2018 and 2017, respectively. Of that amount, $175.0 million in 2018 and $169.0 million in 2017 was aid from sponsors. Components of student support are detailed in Table 3 below.

Table 3. Student Support

	2018			2017		
(in thousands of dollars)	Institute Sources	External Sponsors	Total Student Support	Institute Sources	External Sponsors	Total Student Support
Undergraduate tuition support	$ 120,352	$ 17,584	$ 137,936	$ 108,930	$ 18,002	$ 126,932
Graduate tuition support	226,687	61,747	288,434	209,680	60,609	270,289
Fellowship stipends	26,199	16,110	42,309	23,344	16,174	39,518
Student employment	46,329	79,555	125,884	44,301	74,227	118,528
Total	**$ 419,567**	**$ 174,996**	**$ 594,563**	**$ 386,255**	**$ 169,012**	**$ 555,267**

A. Accounting Policies (continued)

Sponsored Research

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

Table 4. Research Revenues

(in thousands of dollars)	2018	2017
Direct:		
Campus	$ 519,977	$ 508,677
Lincoln	940,798	926,871
SMART	41,988	32,981
Total direct	1,502,763	1,468,529
Indirect:		
Campus	$ 161,832	$ 198,262
Lincoln	40,495	42,386
SMART	195	303
Total indirect	202,522	240,951
Total research revenues	**$ 1,705,285**	**$ 1,709,480**

Revenue associated with contracts and grants is recognized as related costs are incurred. The capital costs of buildings and equipment are depreciated over their estimated life cycle, and the sponsored research recovery allowance for depreciation is treated as indirect research revenue. 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 unrestricted net assets.

Gifts and Pledges

Gifts and pledges are recognized when received. Gifts of securities are recorded at their fair value at the date of contribution. Donated securities received totaled $66.8 million and $39.3 million in 2018 and 2017, respectively, and are shown separately in the Consolidated Statements of Cash Flows. Gifts of equipment received from manufacturers and other donors are put into use and recorded by MIT at fair value. Gifts of equipment totaled $2.2 million in 2018 and less than $0.1 million in 2017. Pledges in the amount of $560.1 million and $533.2 million were recorded as receivables at June 30, 2018 and 2017, respectively, with the revenue assigned to the appropriate classification of restriction. Pledges consist of unconditional written promises to contribute to MIT in the future and are recorded after discounting the future cash flows to the present value.

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.

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 on 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)	2018	2017
Balance at the beginning of the year	$ 154,470	$ 145,216
Addition for new gifts	28,768	8,122
Termination and payments to beneficiaries	(17,782)	(19,671)
Net investment and actuarial gain	21,993	20,803
Balance at end of the year	**$ 187,449**	**$ 154,470**

A. Accounting Policies (continued)

Accounts Payable, Accruals, and Other Liabilities

MIT's accounts payable, accruals, and other liabilities totaled $487.0 million and $457.5 million at June 30, 2018 and 2017, respectively. These totals included accrued vacation of $88.4 million at June 30, 2018, and $88.2 million at June 30, 2017.

Recently Adopted Accounting Standards

On July 1, 2016, the Institute early adopted new guidance related to how *Not-for-Profit Entities that are a General or Limited Partner Should Consolidate a For-Profit Limited Partnership or Similar Entity,* which impacts consolidation for not-for-profit entities. As a result of adopting this guidance, certain previously consolidated limited liability investment entities are no longer consolidated.

On July 1, 2016, the Institute early adopted new guidance related to *Recognition and Measurement of Financial Assets and Financial Liabilities*. The guidance eliminates the requirement to disclose the fair value of our outstanding debt. The Institute has evaluated the impact of the guidance on the financial statements and accompanying notes and has removed the fair value reference previously included in Note F.

Non-Cash Items

Non-cash transactions excluded from the Consolidated Statements of Cash Flows include ($13.9) million and $12.3 million of accrued liabilities related to plant and equipment purchases for 2018 and 2017, respectively. The ($13.9) million excluded in fiscal 2018 was driven by over-accruing for plant and equipment purchases in fiscal 2017.

Use of Estimates

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

Subsequent Events

MIT has evaluated subsequent events through September 14, 2018, 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 and the certain Notes to the Consolidated Financial Statements include 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, 2017, from which the summarized information was derived.

A. Accounting Policies (continued)

Cash Flow Revisions

MIT has revised the Consolidated Statement of Cash Flows for the year ended June 30, 2017, to correct the classification of $254.8 million of cash receipts which are restricted for long-term investment. This amount was primarily attributable to an endowed pledge payment of $175.9 million from one donor. The Institute has concluded that these receipts should have been classified as a cash inflow from financing activities, rather than from operating activities, in accordance with Accounting Standards Codification (ASC) 230, Statement of Cash Flows. The Consolidated Statement of Cash Flows for the year ended June 30, 2017 has been corrected to reflect this and other immaterial revisions between cash flow categories.

These revisions have no impact on the amounts disclosed in MIT's Statement of Activities or Statement of Financial Position, or on the net change in cash and cash balances shown in the Consolidated Statement of Cash Flows, all of which were accurately stated. Additionally, the Institute has evaluated the impact of these misclassifications and concluded that they are not material, individually or in the aggregate, to the previously reported June 30, 2017 financial statements.

The following exhibit shows the impact of the revisions to correct these classification errors in the 2017 Consolidated Statement of Cash Flows.

Consolidated Statement of Cash Flows — Revisions
to the year ended June 30, 2017

(in thousands of dollars)	As Previously Reported	Adjustment	As Revised
Cash Flow from Operating Activities			
Amortization of bond premiums and discounts and other adjustments	$ 13,294	$ (7,717)	$ 5,577
Liabilities due under life income fund agreements	9,254	14,422	23,676
Reclassify contributions restricted for long-term investment	(92,767)	(254,803)	(347,570)
All other operating activities	(160,258)	-	(160,258)
Net cash used in operating activities	(230,477)	(248,098)	(478,575)
Cash Flow from Investing Activities			
Student notes issued	(14,453)	7,717	(6,736)
All other investing activities	(302,495)	-	(302,495)
Net cash used in investing activities	(316,948)	7,717	(309,231)
Cash Flow from Financing Activities			
Contributions restricted for long-term investment	92,767	254,803	347,570
Payments to beneficiaries of life income funds	-	(14,422)	(14,422)
All other financing activities	405,475	-	405,475
Net cash provided by financing activities	498,242	240,381	738,623
Net decrease in cash	(49,183)	-	(49,183)
Cash at the beginning of the year	449,008	-	449,008
Cash at the end of the year	**$ 399,825**	**$ -**	**$ 399,825**

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 is 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.

MIT values its investments at fair value on the Consolidated Statements of Financial Positions in accordance with the principles of accounting standards that establish 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 cash equivalents 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.

B. Investments (continued)

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. Exchange traded derivatives, such as futures and options, are generally classified within Level 1.

MIT, through some of its direct and indirect subsidiaries, 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 $768.6 million and $777.3 million in fiscal years 2018 and 2017, 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 $1,812.1 million and $1,716.2 million as of June 30, 2018 and 2017, respectively. The net change in unrealized gains (losses) related to Level 3 investments held by MIT at June 30, 2018, and June 30, 2017, are disclosed in Table 7.

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 and real estate 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. MIT does have various sources of liquidity at its disposal, including cash, cash equivalents, marketable debt and equity securities, and lines of credit.

B. Investments (continued)

Table 6 presents MIT's investments at fair value as of June 30, 2018 and 2017, 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 2018					
Cash and cash equivalents	$ 1,354,618	$ -	$ -	$ -	$ 1,354,618
US Treasury	1,159,000	-	-	-	1,159,000
US government agency	554	68,332	-	-	68,886
Domestic bonds	19,612	795,566	120,096	-	935,274
Foreign bonds	2,106	95,154	-	-	97,260
Common equity:					
Long domestic	53,262	-	202,840	-	256,102
Long foreign	170,023	215	-	-	170,238
Equity:**					
Absolute return	-	-	-	1,948,154	1,948,154
Domestic	-	-	-	2,335,421	2,335,421
Foreign	-	-	-	4,426,017	4,426,017
Private	-	-	-	4,020,787	4,020,787
Real estate*	49,308	-	2,385,683	729,463	3,164,454
Real assets**	-	-	184	687,581	687,765
Split-interest agreements	-	-	156,494	-	156,494
Other	-	200	4,216	-	4,416
Derivatives	(193)	(40,920)	-	-	(41,113)
Investments, at fair value	**$ 2,808,290**	**$ 918,547**	**$ 2,869,513**	**$ 14,147,423**	**$ 20,743,773**
Fiscal Year 2017					
Cash and cash equivalents	$ 1,289,440	$ -	$ -	$ -	$ 1,289,440
US Treasury	983,110	-	-	-	983,110
US government agency	-	68,972	-	-	68,972
Domestic bonds	11,085	827,798	112,325	-	951,208
Foreign bonds	21	218,676	-	-	218,697
Common equity:					
Long domestic	122,824	-	199,643	-	322,467
Long foreign	522,712	934	-	-	523,646
Equity:**					
Absolute return	-	-	-	1,948,414	1,948,414
Domestic	-	-	-	1,860,682	1,860,682
Foreign	-	-	-	3,939,887	3,939,887
Private	-	-	-	3,352,743	3,352,743
Real estate*	8,885	-	2,094,523	711,635	2,815,043
Real assets**	-	-	205	667,986	668,191
Split-interest agreements	-	-	142,499	-	142,499
Other	2,796	200	3,881	-	6,877
Derivatives	32	(46,561)	-	-	(46,529)
Investments, at fair value	**$ 2,940,905**	**$ 1,070,019**	**$ 2,553,076**	**$ 12,481,347**	**$ 19,045,347**

** Real estate includes direct investments and investments held through commingled vehicles.*

*** Real assets and equity categories include commingled vehicles that invest in these types of investments.*

B. Investments (continued)

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 at June 30, 2018 and 2017.

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 2018							
Domestic bonds	$ 112,325	$ -	$ -	$ 15,123	$ (7,352)	$ -	$ 120,096
Common equity:							
Long domestic	199,643	7,525	3,008	6,084	(13,420)	-	202,840
Short domestic	-	-	-	43	(43)	-	-
Real estate	2,094,523	179,169	122,784	182,674	(193,467)	-	2,385,683
Real assets	205	-	(21)	-	-	-	184
Split-interest agreements	142,499	169	14,391	163	(728)	-	156,494
Other	3,881	-	(76)	772	(361)	-	4,216
Investments, at fair value	**$ 2,553,076**	**$ 186,863**	**$ 140,086**	**$ 204,859**	**$ (215,371)**	**$ -**	**$ 2,869,513**
Fiscal Year 2017							
Domestic bonds	$ 104,048	$ -	$ -	$ 16,306	$ (8,029)	$ -	$ 112,325
Common equity:							
Long domestic	95,120	601	104,736	5,927	(6,741)	-	199,643
Short domestic	-	-	-	-	-	-	-
Real estate	2,005,145	14,320	244,061	170,833	(52,611)	(287,225)	2,094,523
Real assets	275	-	(70)	-	-	-	205
Split-interest agreements	126,832	1,120	7,135	11,308	(3,896)	-	142,499
Other	2,809	-	60	1,012	-	-	3,881
Investments, at fair value	**$ 2,334,229**	**$ 16,041**	**$ 355,922**	**$ 205,386**	**$ (71,277)**	**$ (287,225)**	**$ 2,553,076**

**Other Changes and Transfers include cash received and paid related to the real estate financings described earlier in this footnote. There were no transfers in or out of Level 3 for fiscal years 2018 and 2017.*

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, 2018 and 2017.

Table 8. Level 3 Valuation Techniques

(in thousands of dollars)	Fair Value at June 30, 2018	Fair Value at June 30, 2017	Valuation Technique	Unobservable Input	2018 Rates	2017 Rates
Real estate	$ 2,385,683	$ 2,094,523	Discounted cash flow	Discount rate	5.0-8.0%	4.5-8.5%
			Capitalization rate	Capitalization rate	4.5-7.3%	4.5-7.0%
Equity securities	183,169	180,654	Discounted cash flow	Discount rate	12.5%	13.2%
Split-interest agreements	119,260	105,581	Net present value	Discount rate	3.7%	2.65-4.5%
Real assets	184	205	Discounted cash flow	Discount	25.0%	25.0%
Other illiquid assets	650	882	Varies	Varies	Varies	Varies
Total assets	**$ 2,688,946**	**$ 2,381,845**				

Certain Level 3 assets totaling $180,567 and $171,231 as of June 30, 2018 and June 30, 2017, respectively, have been valued using unadjusted third-party quotations and thus have been excluded from this table.

B. Investments (continued)

Details on the current redemption terms and restrictions by asset class and type of investment are provided in Table 9 below.

Table 9. Unfunded Commitments

Asset Class *(in thousands of dollars)*	2018 Unfunded Commitments	2018 Fair Value	2017 Unfunded Commitments	2017 Fair Value	Redemption Terms	Redemption Restrictions
Equity:						
Absolute return	$ 209,572	$ 1,948,154	$ 153,487	$ 1,948,414	Redemption terms range from 45 days with 1 month's notice to closed-end funds not available for redemption	Lock-up provisions range from none to not available for redemption
Domestic	6,173	2,335,421	1,790	1,860,682	Redemption terms range from 2 months with 1 month's notice to 25 months with 30 days' notice and closed-end funds not available for redemption	Lock-up provisions range from none to 60 months; certain funds are not available for redemption
Foreign	20,000	4,426,017	36,200	3,939,887	Redemption terms range from daily with 10 days' notice to 38 months with 6 months' notice and closed-end funds not available for redemption	Lock-up provisions range from none to 58 months
Private	1,658,030	4,020,787	1,517,659	3,352,743	Closed-end funds not available for redemption	Closed-end funds not available for redemption
Real estate	605,483	729,463	563,739	711,635	Closed-end funds not available for redemption	Closed-end funds not available for redemption
Real assets	133,174	687,581	102,689	667,986	Redemption terms range from 1 month with 7 days' notice to closed-end funds not available for redemption	Lock-up provisions range from none to not available for redemption
Total	**$ 2,632,432**	**$ 14,147,423**	**$ 2,375,564**	**$ 12,481,347**		

C. Derivative Financial Instruments and Collateral

MIT maintains an interest rate swap agreement to manage the interest cost and risk associated with a portion of its variable rate debt, described in Note F. 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. At June 30, 2018, the swap agreement had a fair value of ($38.0) million and at June 30, 2017, had a fair value of ($47.1) million. This swap had a total net gain for 2018 of $9.1 million and a total net gain of $16.3 million for 2017. The notional amount of this derivative is not recorded on MIT's Consolidated Statements of Financial Position.

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 futures, total return and credit default swaps, and interest rate cap and swaption agreements. The futures are exchange-traded, and the swap, swaptions, and cap agreements are executed over the counter.

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, 2018, 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.

C. Derivative Financial Instruments and Collateral (continued)

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, 2018 and 2017 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 2018				
Fixed income instruments:				
Fixed income futures	$ 4,000	$ (29,200)	$ (193)	$ -
Options on interest rate exchange agreements	949,000	-	1,086	(730)
Equity options	134	-	-	(11)
Total fixed income instruments	953,134	(29,200)	893	(741)
Commodity and index instruments:				
Equity index swaps	-	(194,583)	(7,293)	14,642
Index options	95,000	-	3,353	(210)
Total commodity and index instruments	95,000	(194,583)	(3,940)	14,432
Credit instruments	-	(12,750)	(92)	(332)
2018 Total	**$ 1,048,134**	**$ (236,533)**	**$ (3,139)**	**$ 13,359**
Fiscal Year 2017				
Fixed income instruments:				
Fixed income futures	$ 1,900	$ (9,200)	$ 32	$ -
Options on interest rate exchange agreements	1,039,000	-	1,818	(139)
Equity options	134	-	11	-
Total fixed income instruments	1,041,034	(9,200)	1,861	(139)
Commodity and index instruments:				
Equity index swaps	-	(79,332)	744	(32,183)
Total commodity and index instruments	-	(79,332)	744	(32,183)
Credit instruments	-	(76,119)	(2,032)	(973)
2017 Total	**$ 1,041,034**	**$ (164,651)**	**$ 573**	**$ (33,295)**

** 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 the non-operating section as net gain on investments in the Consolidated Statement of Activities.*

C. Derivative Financial Instruments and Collateral (continued)

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 at June 30, 2018 and 2017.

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.

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.

Table 11. Credit Derivative Instruments

	Purchased Protection		
(in thousands of dollars)	Purchased Notional Amounts*	Purchased Fair Value**	< 5 Years Years to Maturity
Fiscal Year 2018			
Credit rating on underlying or index:			
A- to AAA	$ 2,250	$ (49)	$ 2,250
BBB- to BBB+	5,500	(2)	5,500
Non-rated	5,000	(41)	5,000
2018 Total	**$ 12,750**	**$ (92)**	**$ 12,750**
Fiscal Year 2017			
Credit rating on underlying or index:			
A- to AAA	$ 25,000	$ 474	$ 25,000
BBB- to BBB+	51,119	1,558	51,119
Non-rated	-	-	-
2017 Total	**$ 76,119**	**$ 2,032**	**$ 76,119**

** All instruments included in these amounts have maturity less than 5 years.*

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

C. Derivative Financial Instruments and Collateral (continued)

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

	2018			2017		
(in thousands of dollars)	Gross Amount	Cash/Treasury Collateral Posted/ (Received)	Net Amount	Gross Amount	Cash/Treasury Collateral Posted/ (Received)	Net Amount
Assets						
Counterparty A	$ 391	$ (405)	$ (14)	$ 720	$ (880)	$ (160)
Counterparty B	25,402	(25,916)	(514)	27,000	(27,663)	(663)
Counterparty C	15,000	(15,273)	(273)	-	-	-
Counterparty D	-	-	-	-	-	-
Counterparty E	-	-	-	-	-	-
Counterparty F	58,584	(59,772)	(1,188)	-	-	-
Counterparty G	36,383	(37,185)	(802)	18,528	(18,916)	(388)
Counterparty H	-	-	-	-	-	-
Counterparty I	-	-	-	-	-	-
Counterparty J	3,353	(3,330)	23	-	-	-
Counterparty K	-	-	-	1,843	7,183	9,026
Total assets	139,113	(141,881)	(2,768)	48,091	(40,276)	7,815
Liabilities						
Counterparty A	(32)	50	18	(59)	60	1
Counterparty B	-	-	-	-	-	-
Counterparty C	-	60	60	(527)	550	23
Counterparty D	-	-	-	(1,052)	1,091	39
Counterparty E	-	-	-	-	-	-
Counterparty F	-	-	-	-	-	-
Counterparty G	-	-	-	(33)	60	27
Counterparty H	(37,974)	-	(37,974)	(47,103)	-	(47,103)
Counterparty I	(49)	-	(49)	(6)	-	(6)
Counterparty J	(11)	40	29	(355)	340	(15)
Counterparty K	(6,598)	806	(5,792)	-	-	-
Total liabilities	(44,664)	956	(43,708)	(49,135)	2,101	(47,034)
Total assets and liabilities, net	**$ 94,449**	**$ (140,925)**	**$ (46,476)**	**$ (1,044)**	**$ (38,175)**	**$ (39,219)**

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)	2018	2017
Derivatives from Table 6	$ (41,113)	$ (46,529)
Repurchase agreements	135,369	45,528
Fixed income futures	193	(32)
Equity options	-	(11)
Total	**$ 94,449**	**$ (1,044)**

D. Pledges Receivable

Table 14 below shows the time periods in which pledges receivable at June 30, 2018 and 2017 are expected to be realized.

Table 14. Pledges Receivable

(in thousands of dollars)	2018	2017
In one year or less	$ 276,883	$ 239,548
Between one year and five years	264,333	266,586
More than five years	80,931	86,103
Less: allowance for unfulfilled pledges	(62,005)	(59,010)
Pledges receivable, net	**$ 560,142**	**$ 533,227**

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 $80.7 million and $64.6 million in 2018 and 2017, respectively. The pledge discount rate ranges from fiscal year 2019 at 2.48 percent to fiscal year 2044 at 3.81 percent. MIT has gross conditional pledges, not recorded, for the promotion of education and research of $100.6 million and $80.6 million in 2018 and 2017, respectively.

Pledges receivable are classified as Level 3 under the valuation hierarchy described in Note B.

Table 15 below is a rollforward of the pledges receivable at June 30, 2018 and 2017.

Table 15. Rollforward of Pledges Receivable

(in thousands of dollars)	2018	2017
Balance at beginning of the year	$ 533,227	$ 609,065
New pledges	206,146	320,750
Pledge payments received	(160,213)	(363,083)
Change in pledge discount	(16,023)	(41,915)
Change in reserve for unfulfilled pledges	(2,995)	8,410
Balance at the end of the year	**$ 560,142**	**$ 533,227**

E. Student Notes Receivable

Table 16 below details the components of student notes receivable at June 30, 2018 and 2017.

Table 16. Student Notes Receivable

(in thousands of dollars)	2018	2017
Institute-funded student notes receivable	$ 12,258	$ 12,540
Perkins student notes receivable	21,223	27,481
Total student notes receivable	33,481	40,021
Less: allowance for doubtful accounts	(3,000)	(3,000)
Student notes receivable, net	**$ 30,481**	**$ 37,021**

Under federal law, the authority for schools to make new Perkins Loans ended on September 30, 2017, and final disbursements were permitted through June 30, 2018. Perkins student notes receivable were funded by the US government and by MIT. Those funds advanced by the US government for this program are ultimately refundable to the US government and are classified as liabilities in US government advances for student loans in the Consolidated Statements of Financial Position. Due to the nature and terms of the student loans, which are subject to significant restrictions, it is not feasible to determine the fair value of such loans.

Allowance for Credit Losses

Management regularly assesses the adequacy of the allowance for credit losses by performing ongoing evaluations of the student loan portfolio, including such factors as the differing economic risks associated with each loan category, the financial condition of specific borrowers, the economic environment in which the borrowers operate, the level of delinquent loans, the value of any collateral, and, where applicable, the existence of any guarantees or indemnifications. MIT's Perkins Loans receivable represents the amounts due from current and former students under the Federal Perkins Loan Program. Loans disbursed under the Federal Perkins Loan Program are able to be assigned to the US government in certain non-repayment situations. In these situations, the federal portion of the loan balance is guaranteed.

F. Net Borrowings

MIT's outstanding borrowings at June 30, 2018 and 2017, are shown in Table 17 below.

Table 17. Net Borrowings

(in thousands of dollars / due dates are calendar based / par values as of 2018)	2018	2017
Educational plant		
Massachusetts Development Finance Agency (MassDevelopment)		
Series I, 5.20%, due 2028, par value $30,000	$ 30,548	$ 30,606
Series J-1, variable rate, due 2032, par value $125,000	125,000	125,000
Series J-2, variable rate, due 2032, par value $125,000	125,000	125,000
Series K, 5.5%, due 2022-2032, par value $177,000	184,512	211,590
Series L, 5.0%-5.25%, due 2018-2033, par value $141,670	148,200	148,950
Series M, 5.25%, due 2019-2030, par value $102,325	108,041	108,866
Total MassDevelopment	721,301	750,012
Medium Term Notes Series A, 7.125% due 2026, par value $17,415	17,382	17,379
Medium Term Notes Series A, 7.25%, due 2096, par value $45,604	45,463	45,459
Taxable Bonds, Series B, 5.60%, due 2111, par value $750,000*	747,113	747,082
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 2019-2038, par value $522,410	522,410	522,410
Taxable Bonds, Series E, 3.885%, due 2116, par value $500,000*	500,000	500,000
Notes payable to bank, variable rate, due 2020	113,034	113,033
Total Taxable	2,495,402	2,495,363
Total educational plant	3,216,703	3,245,375
Other		
Notes payable to bank, variable rate, due 2020	63,476	63,476
Total borrowings	3,280,179	3,308,851
Unamortized bond issuance costs	(20,790)	(21,306)
Total borrowings net of unamortized debt issuance cost	**$ 3,259,389**	**$ 3,287,545**

** The proceeds of recent taxable bonds were in the process of being invested in physical assets in 2017 and 2018, with unused balances held as investments.*

F. Net Borrowings (continued)

The aggregate amounts of debt payments and sinking fund requirements for each of the next five fiscal years are shown in Table 18 below.

Table 18. Debt Principal Obligations

(in thousands of dollars)

2019	$	26,000
2020		77,030
2021		11,180
2022		11,765
2023		55,500

MIT maintains a line of credit with a major financial institution for an aggregate commitment of $500.0 million. As of June 30, 2018, $323.5 million was available under this line of credit (see "Notes payable" on Table 17). The line of credit expires on March 31, 2020.

Cash paid for interest on long-term debt in 2018 and 2017 was $146.8 million and $137.7 million, respectively.

Variable interest rates at June 30, 2018, are shown in Table 19 below.

Table 19. Variable Interest Rates

(in thousands of dollars)	Amount	Rate
MassDevelopment Series J-1	$ 125,000	1.45%
MassDevelopment Series J-2	125,000	1.40%
Notes payable to bank	176,509	2.51%

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 percent of par on the tender date.

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. At June 30, 2018 and 2017, MIT recorded a net over-recovery of $41.2 million and $15.4 million, respectively.

The DCAA is responsible for auditing indirect charges to grants and contracts in support of ONR's negotiating responsibility. MIT has final audited rates through 2009. MIT's 2018 research revenues of $1,705.3 million include reimbursement of indirect costs of $202.5 million, which includes the adjustment for the variance between the indirect cost income determined by the fixed rates and actual costs for 2018. It also includes reductions resulting from prior-year audits, contributing to the drop in indirect cost revenue experienced in fiscal 2018. In 2017, research revenues were $1,709.5 million, which included reimbursement of indirect costs of $241.0 million.

Leases

At June 30, 2018, there were no capital lease obligations. MIT has commitments under certain operating (rental) leases. Rent expense incurred under operating lease obligations was $47.5 million and $44.0 million in 2018 and 2017, respectively.

Future minimum payments under operating leases are shown in Table 20 below.

Table 20. Lease Obligations

(in thousands of dollars)

2019	$	48,462
2020		46,632
2021		44,838
2022		39,302
2023		37,246

Investments

As of June 30, 2018, $13.5 million of investments were pledged as collateral to various suppliers and government agencies.

Future Construction

At June 30, 2018, MIT had contractual obligations of approximately $490.7 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 unrestricted funds.

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, 2018,

G. Commitments and Contingencies (continued)

these commitments included approximately $371.7 million of contractual obligations related to the Kendall Square Initiative. 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.

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 are shown in Table 21 below.

Table 21. Expenditures by Functional Classification

(in thousands of dollars)	2018	2017
General and administrative	$ 848,230	$ 865,337
Instruction and unsponsored research	1,029,050	928,448
Sponsored research	1,523,543	1,498,790
Auxiliary enterprises	159,736	154,289
Operation of Alumni Association	17,318	17,160
Total operating expenses	**$ 3,577,877**	**$ 3,464,024**

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 2018 and 2017. MIT also designated contributions of $6.5 million and $17.1 million to the retiree welfare benefit plan in 2018 and 2017, respectively. The current healthcare cost trend rate decreased from 5.5 percent in 2017 to 5.0 percent in 2018.

For the defined contribution plan, the amount contributed and expenses recognized during 2018 and 2017 were $60.7 million and $58.6 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 operating activity and other amounts recognized in non-operating activity in unrestricted net assets for the years ended June 30, 2018 and 2017.

Table 22. Components of Net Periodic Benefit Cost

	Defined Benefit Pension Plan		Retiree Welfare Benefit Plan	
(in thousands of dollars)	2018	2017	2018	2017
Components of net periodic benefit cost recognized in operating activity:				
Service cost	$ 109,366	$ 106,097	$ 27,153	$ 27,963
Interest cost	162,917	155,368	24,205	24,060
Expected return on plan assets	(277,597)	(262,479)	(41,010)	(37,558)
Amortization of net actuarial loss (gain)	23,610	33,183	(1,000)	1,000
Amortization of prior service cost (credit)	285	953	(2,801)	(2,801)
Net periodic benefit cost recognized in operating activity	18,581	33,122	6,547	12,664
Other amounts recognized in non-operating activity in unrestricted net assets:				
Current year actuarial gain	(288,146)	(140,569)	(75,505)	(83,280)
Amortization of actuarial (loss) gain	(23,610)	(33,183)	1,000	(1,000)
Amortization of prior service (cost) credit	(285)	(953)	2,801	2,801
Total other amounts recognized in non-operating activity	(312,041)	(174,705)	(71,704)	(81,479)
Total recognized	**$ (293,460)**	**$ (141,583)**	**$ (65,157)**	**$ (68,815)**

The estimated net actuarial loss and prior service cost for the defined benefit pension plan that will be amortized from unrestricted net assets into net periodic benefit cost during the next fiscal year are $4.2 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 unrestricted net assets into net periodic benefit cost during the next fiscal year are $1.0 million and $2.8 million, respectively.

I. Retirement Benefits (continued)

Cumulative amounts recognized as non-operating changes in unrestricted net assets are summarized in Table 23 below for the years ended June 30, 2018 and 2017.

Table 23. Cumulative Amounts Recognized in Unrestricted Net Assets

	Defined Benefit Pension Plan		Retiree Welfare Benefit Plan	
(in thousands of dollars)	2018	2017	2018	2017
Amounts recognized in unrestricted net assets consist of:				
Net actuarial loss (gain)	$ 299,253	$ 611,010	$ (119,271)	$ (44,766)
Prior service cost (credit)	2,848	3,132	(5,012)	(7,813)
Total cumulative amounts recognized in unrestricted net assets	**$ 302,101**	**$ 614,142**	**$ (124,283)**	**$ (52,579)**

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.

Table 24. Projected Benefit Obligations and Fair Value of Assets

	Defined Benefit Pension Plan		Retiree Welfare Benefit Plan	
(in thousands of dollars)	2018	2017	2018	2017
Change in projected benefit obligations:				
Projected benefit obligations at beginning of year	$ 3,921,738	$ 3,795,334	$ 570,512	$ 582,084
Service cost	109,366	106,097	27,153	27,963
Interest cost	162,917	155,368	24,205	24,060
Retiree contributions	-	-	6,858	6,192
Net benefit payments, transfers, and other expenses	(150,456)	(140,253)	(31,223)	(31,710)
Employer Group Waiver Plan (EGWP) reimbursement	-	-	6,094	5,701
Assumption changes and actuarial net loss (gain)	(112,353)	5,192	(36,957)	(43,778)
Projected benefit obligations at end of the year	3,931,212	3,921,738	566,642	570,512
Change in plan assets:				
Fair value of plan assets at beginning of the year	3,600,221	3,332,233	623,498	549,156
Actual return on plan assets	453,389	408,241	79,558	77,059
Employer contributions	-	-	6,543	17,100
Employer Group Waiver Plan (EGWP) reimbursement	-	-	6,094	5,701
Retiree contributions	-	-	6,858	6,192
Net benefit payments, transfers, and other expenses	(150,456)	(140,253)	(31,223)	(31,710)
Fair value of plan assets at end of the year	3,903,154	3,600,221	691,328	623,498
(Unfunded) funded status at end of the year	**(28,058)**	**(321,517)**	**124,686**	**52,986**
Amounts recognized in the Consolidated Statements of Financial Position consist of:				
Net (liabilities) assets	**$ (28,058)**	**$ (321,517)**	**$ 124,686**	**$ 52,986**

I. Retirement Benefits (continued)

The projected benefit obligation for the defined benefit pension plan, as shown in Table 24, was $3,931.2 million as of fiscal year-end 2018, up $9.5 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 $3,766.6 million and $3,740.2 million as of June 30, 2018 and 2017, 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.

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)	2018	2017	2018	2017
Assumptions used to determine benefit obligation as of June 30:				
Discount rate	4.38%	4.12%	4.44%	4.14%
Rate of compensation increase*	4.00%	4.00%		
Assumptions used to determine net periodic benefit cost for the year ended June 30:				
Discount rate	4.12%	4.06%	4.14%	4.03%
Expected long-term return on plan assets	8.00%	8.00%	7.00%	7.00%
Rate of compensation increase*	4.00%	4.00%		
Assumed healthcare cost trend rates:				
Healthcare cost trend rate assumed for next year			5.00%	5.50%
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			2021	2021

** The average rate of salary increase is assumed to be 4.00% for 2019, and thereafter.*

As an indicator of sensitivity, a one percentage point change in the assumed healthcare cost trend rate would affect 2018'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 2018 postretirement service and interest cost	$ 9,725	$ (7,701)
Effect on postretirement benefit obligation as of June 30, 2018	80,787	(66,696)

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.

I. Retirement Benefits (continued)

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 plan net assets/(liabilities) as of June 30, 2018 and 2017, 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. There were no transfers in and out of Level 1 and Level 2 fair value measurements in 2018 and 2017.

Table 27A. Defined Benefit Pension Plan Investments

(in thousands of dollars)	Level 1	Level 2	Level 3	NAV	Total Fair Value
Fiscal Year 2018					
Cash and cash equivalents	$ 164,469	$ -	$ -	$ -	$ 164,469
US Treasury	356,637	-	-	-	356,637
US government agency	-	4,777	-	-	4,777
Domestic bonds	-	45,059	-	-	45,059
Foreign bonds	-	-	-	-	-
Common equity:					
Long domestic	842	-	74	-	916
Long foreign	18,374	-	-	-	18,374
Equity:*					
Absolute return	-	-	-	417,100	417,100
Domestic	-	-	-	562,843	562,843
Foreign	-	-	-	1,113,636	1,113,636
Private	-	-	-	885,679	885,679
Real estate*	16,016	-	-	213,012	229,028
Real assets*	-	-	-	95,182	95,182
Other	-	-	433	-	433
Derivatives	(90)	817	-	-	727
Total plan investments	**$ 556,248**	**$ 50,653**	**$ 507**	**$ 3,287,452**	**$ 3,894,860**
Fiscal Year 2017					
Cash and cash equivalents	$ 256,999	$ -	$ -	$ -	$ 256,999
US Treasury	352,736	-	-	-	352,736
US government agency	-	6,351	-	-	6,351
Domestic bonds	-	45,598	-	-	45,598
Foreign bonds	-	6,120	-	-	6,120
Common equity:					
Long domestic	1,769	-	74	-	1,843
Long foreign	88,625	-	-	-	88,625
Equity:*					
Absolute return	-	-	-	375,354	375,354
Domestic	-	-	-	494,196	494,196
Foreign	-	-	-	909,020	909,020
Private	-	-	-	719,867	719,867
Real estate*	2,037	-	-	220,914	222,951
Real assets*	-	-	-	106,646	106,646
Other	5,220	-	433	-	5,653
Derivatives	19	202	-	-	221
Total plan investments	**$ 707,405**	**$ 58,271**	**$ 507**	**$ 2,825,997**	**$ 3,592,180**

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

I. Retirement Benefits (continued)

Table 27B. Retiree Welfare Benefit Plan Investments

(in thousands of dollars)	Level 1	Level 2	Level 3	NAV	Total Fair Value
Fiscal Year 2018					
Cash and cash equivalents	$ 47,225	$ -	$ -	$ -	$ 47,225
Domestic bonds	-	76,615	-	-	76,615
Foreign bonds	-	-	-	-	-
Common equity:					
Long domestic	142	-	-	-	142
Long foreign	3,017	-	-	-	3,017
Equity:*					
Absolute return	-	-	-	61,430	61,430
Domestic	-	-	-	103,724	103,724
Foreign	-	-	-	255,605	255,605
Private	-	-	-	104,799	104,799
Real estate*	1,615	-	-	23,377	24,992
Real assets*	-	-	-	9,635	9,635
Other	-	-	-	-	-
Derivatives	-	206	-	-	206
Total plan investments	**$ 51,999**	**$ 76,821**	**$ -**	**$ 558,570**	**$ 687,390**
Fiscal Year 2017					
Cash and cash equivalents	$ 73,779	$ -	$ -	$ -	$ 73,779
Domestic bonds	-	76,842	-	-	76,842
Foreign bonds	-	437	-	-	437
Common equity:					
Long domestic	275	-	-	-	275
Long foreign	10,783	-	-	-	10,783
Equity:*					
Absolute return	-	-	-	52,616	52,616
Domestic	-	-	-	93,018	93,018
Foreign	-	-	-	212,104	212,104
Private	-	-	-	73,644	73,644
Real estate*	278	-	-	21,381	21,659
Real assets*	-	-	-	7,211	7,211
Other	373	-	-	-	373
Derivatives	-	15	-	-	15
Total plan investments	**$ 85,488**	**$ 77,294**	**$ -**	**$ 459,974**	**$ 622,756**

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

I. Retirement Benefits (continued)

Table 28 below is a rollforward of the investments classified by MIT's defined benefit pension plan within Level 3 of the fair value hierarchy defined in Note B as of June 30, 2018 and 2017.

Table 28. Rollforward of Level 3 Investments

(in thousands of dollars)	Fair Value Beginning	Realized Losses	Unrealized Gains (Losses)	Purchases	Sales	Transfers	Fair Value Ending
Defined Benefit Pension Plan							
Fiscal Year 2018							
Common equity:							
Long domestic	$ 74	$ -	$ -	$ -	$ -	$ -	$ 74
Other	433	(430)	430	-	-	-	433
Total	**$ 507**	**$ (430)**	**$ 430**	**$ -**	**$ -**	**$ -**	**$ 507**
Fiscal Year 2017							
Common equity:							
Long domestic	$ 53	$ -	$ 21	$ -	$ -	$ -	$ 74
Other	589	-	(156)	-	-	-	433
Total	**$ 642**	**$ -**	**$ (135)**	**$ -**	**$ -**	**$ -**	**$ 507**

I. Retirement Benefits (continued)

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 29 below as of June 30, 2018 and 2017.

Table 29. Unfunded Commitments

	2018		2017			
(in thousands of dollars)	Unfunded Commitments	Fair Value	Unfunded Commitments	Fair Value	Redemption Terms	Redemption Restrictions
Defined Benefit Pension Plan						
Equity:						
Absolute return . . .	$ 47,844	$ 417,100	$ 41,983	$ 375,354	Redemption terms range from 97 days with 1 month's notice to closed-end funds not available for redemption	Lock-up provisions range from none to not available for redemption
Domestic	403	562,843	403	494,196	Redemption terms range from 4 months with 30 days' notice to closed-end funds not available for redemption	Lock-up provisions range from none to not available for redemption
Foreign.	41,705	1,113,636	54,781	909,020	Redemption terms range from 45 days with 1 month's notice to 25 months with 3 months' notice not available for redemption	Lock-up provisions range from none to 32 months
Private	323,032	885,679	289,447	719,867	Closed-end funds not available for redemption	Closed-end funds not available for redemption
Real estate	158,085	213,012	140,114	220,914	Closed-end funds not available for redemption	Closed-end funds not available for redemption
Real assets	31,118	95,182	25,265	106,646	Redemption terms range from 8 months with 45 days' notice for 1 fund to closed-end funds not available for redemption	Closed-end funds not available for redemption except for 1 fund with no lock-up provisions
Total	**$ 602,187**	**$ 3,287,452**	**$ 551,993**	**$ 2,825,997**		
Retiree Welfare Benefit Plan						
Equity:						
Absolute return . . .	$ 6,052	$ 61,430	$ 4,589	$ 52,616	Redemption terms range from 97 days with 1 month's notice to closed-end funds not available for redemption	Lock-up provisions range from none to not available for redemption
Domestic	45	103,724	44	93,018	Redemption terms range from 4 months with 30 days' notice to closed-end funds not available for redemption	Lock-up provisions range from none to not available for redemption
Foreign.	6,295	255,605	8,269	212,104	Redemption terms range from 4 months with 30 days' notice to 25 months with 3 months' notice	Lock-up provisions range from none to 32 months
Private	50,681	104,799	43,592	73,644	Closed-end funds not available for redemption	Closed-end funds not available for redemption
Real estate	22,747	23,377	18,182	21,381	Closed-end funds not available for redemption	Closed-end funds not available for redemption
Real assets	5,131	9,635	3,721	7,211	Closed-end funds not available for redemption	Closed-end funds not available for redemption
Total	**$ 90,951**	**$ 558,570**	**$ 78,397**	**$ 459,974**		

I. Retirement Benefits (continued)

Target allocations and weighted-average asset allocations of the investment porfolios for MIT's defined benefit pension plan and retiree welfare benefit plan at June 30, 2018 and 2017 are shown in Table 30 below.

Table 30. Plan Investment Allocation

	Defined Benefit Pension Plan			Retiree Welfare Benefit Plan		
	2018 Target Allocation	2018	2017	2018 Target Allocation	2018	2017
Cash and cash equivalents	0-10%	4%	7%	0-10%	7%	12%
Fixed income	3-13%	11%	11%	10-20%	11%	12%
Equities	33.5-83.5%	66%	62%	40.5-86.5%	68%	63%
Marketable alternatives	7.5-17.5%	11%	11%	10-20%	9%	9%
Real assets	1-11%	2%	3%	0-10%	1%	1%
Real estate	2.5-12.5%	6%	6%	0-10%	4%	3%
Total		**100%**	**100%**		**100%**	**100%**

Expected Future Benefit Payments

In fiscal 2019, MIT does not expect to contribute to its defined benefit pension plan, but expects to contribute $0.7 million to the retiree welfare benefit plan. With the exception of the expected return on assets assumption, these contributions have been estimated based on the same assumptions used to measure MIT's benefit obligations at June 30, 2018. 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.

Table 31 below reflects total expected benefit payments for the defined benefit pension plan and retiree welfare benefit plan over the next ten years. These payments have been estimated based on the same assumptions used to measure MIT's benefit obligations at June 30, 2018.

Table 31. Expected Future Benefit Payments

(in thousands of dollars)	Pension Benefits	Other Benefits*
2019	$ 152,947	$ 25,324
2020	166,952	28,238
2021	175,246	29,950
2022	183,342	31,578
2023	191,867	33,100
2024-2028	1,082,776	189,076

** "Other Benefits" reflects 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

Table 32 below presents the composition of net assets as of June 30, 2018. The amounts listed in the unrestricted category under endowment funds 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 temporarily restricted net assets in other invested funds is pledges, the majority of which will be reclassified to unrestricted net assets when cash is received.

Table 32. Total Net Asset Composition

	2018				
(in thousands of dollars)	Unrestricted	Temporarily Restricted	Permanently Restricted	Total	2017 Total *(Summarized)*
Endowment Funds					
General purpose	$ 1,060,947	$ 1,316,955	$ 270,557	$ 2,648,459	$ 2,386,938
Departments and research	733,963	1,361,866	884,127	2,979,956	2,708,197
Library	13,767	33,975	22,784	70,526	63,743
Salaries and wages	638,694	3,173,587	794,890	4,607,171	4,204,787
Graduate general	102,010	183,137	90,437	375,584	374,802
Graduate departments	181,410	471,550	337,382	990,342	882,098
Undergraduate	262,909	1,363,074	402,993	2,028,976	1,849,985
Prizes	9,963	40,066	20,977	71,006	65,196
Miscellaneous	1,372,794	358,077	467,244	2,198,115	1,901,178
Investment income held for distribution	429,892	-	-	429,892	395,559
Endowment funds before pledges	4,806,349	8,302,287	3,291,391	16,400,027	14,832,483
Pledges	-	-	129,405	129,405	135,500
Total endowment funds	4,806,349	8,302,287	3,420,796	16,529,432	14,967,983
Other Invested Funds					
Student loan funds	19,403	-	18,940	38,343	38,614
Building funds	80,564	58,934	-	139,498	96,869
Designated purposes:					
Departments and research	401,794	-	-	401,794	382,603
Other purposes	353,171	13,953	-	367,124	368,814
Life income funds and donor advised funds	9,919	53,703	119,190	182,812	150,560
Pledges	-	430,737	-	430,737	397,727
Other funds available for current expenses	2,374,456	298,403	-	2,672,859	1,954,077
Funds expended for educational plant	754,182	-	-	754,182	767,811
Total other invested funds	3,993,489	855,730	138,130	4,987,349	4,157,075
Total net assets	**$ 8,799,838**	**$ 9,158,017**	**$ 3,558,926**	**$ 21,516,781**	**$ 19,125,058**

J. Components of Net Assets and Endowment (continued)

MIT's endowment consists of approximately 4,000 individual funds established for a variety of purposes and includes both donor-restricted endowment funds and funds that function as endowment, as shown in Table 33 below. 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. As a result of this interpretation, MIT has not changed the way permanently restricted net assets are classified. (See Note A for further information on net asset classification.) The remaining portion of the donor-restricted endowment fund that is not classified in permanently restricted net assets is classified as temporarily restricted net assets until those amounts are appropriated for expenditure in a manner consistent with the standard of prudence prescribed by UPMIFA. 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

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 unrestricted net assets. There were no underwater endowment funds reported in unrestricted net assets as of June 30, 2018, and June 30, 2017.

Table 33. Endowment Net Asset Composition by Type of Fund

(in thousands of dollars)	Unrestricted	Temporarily Restricted	Permanently Restricted	Total
Fiscal Year 2018				
Donor-restricted endowment funds	$ -	$ 8,302,287	$ 3,420,796	$ 11,723,083
Board-designated endowment funds	4,806,349	-	-	4,806,349
Total endowment funds	**$ 4,806,349**	**8,302,287**	**3,420,796**	**16,529,432**
Fiscal Year 2017				
Donor-restricted endowment funds	$ 395	$ 7,318,465	$ 3,294,069	$ 10,612,929
Board-designated endowment funds	4,355,054	-	-	4,355,054
Total endowment funds	**$ 4,355,449**	**7,318,465**	**3,294,069**	**14,967,983**

J. Components of Net Assets and Endowment (continued)

Table 34 below reflects changes in unrestricted, temporarily restricted, and permanently restricted endowment net assets for fiscal year 2018 and 2017, respectively.

Table 34. Changes in Endowment Net Assets

(in thousands of dollars)	Unrestricted	Temporarily Restricted	Permanently Restricted	Total
Fiscal Year 2018				
Endowment net assets, July 1, 2017	$ 4,355,449	$ 7,318,465	$ 3,294,069	$ 14,967,983
Investment return:				
Investment income	18,829	40,951	12,864	72,644
Net appreciation (realized and unrealized)	599,861	1,397,233	17,356	2,014,450
Total investment return	618,690	1,438,184	30,220	2,087,094
Contributions	-	843	119,567	120,410
Appropriation of endowment assets for expenditure	(196,908)	(456,323)	(9,972)	(663,203)
Other changes:				
Underwater gain adjustment	-	-	-	-
Net asset reclassifications and transfers to create board-designated endowment funds	29,118	1,118	(13,088)	17,148
Endowment net assets, June 30, 2018	**$ 4,806,349**	**$ 8,302,287**	**$ 3,420,796**	**$ 16,529,432**
Fiscal Year 2017				
Endowment net assets, July 1, 2016	$ 3,961,216	$ 6,511,079	$ 2,960,741	$ 13,433,036
Investment return:				
Investment income	15,522	32,678	17,275	65,475
Net appreciation (realized and unrealized)	525,183	1,199,048	109,389	1,833,620
Total investment return	540,705	1,231,726	126,664	1,899,095
Contributions	-	-	319,718	319,718
Appropriation of endowment assets for expenditure	(187,982)	(425,999)	(14,688)	(628,669)
Other changes:				
Underwater gain adjustment	395	(395)	-	-
Net asset reclassifications and transfers to create board-designated endowment funds	41,115	2,054	(98,366)	(55,197)
Endowment net assets, June 30, 2017	**$ 4,355,449**	**$ 7,318,465**	**$ 3,294,069**	**$ 14,967,983**

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 4.5 percent, or 4.9 percent on a three-year-average basis, in fiscal 2018. 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 $74.88 and $72.20 per Pool A unit as of June 30, 2018 and 2017, respectively. For separately invested endowment funds, only the annual investment income generated is distributed for spending.

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, 2018

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		$ 302,801,518	$ 31,239,344
Army		70,624,283	5,951,342
Classified		181,335,931	24,043,887
Defense Advance Research Project Agency		40,137,072	6,594,823
Missile Defense Agency		73,627,842	4,021,858
National Security Agency		7,792,522	215,319
Navy		82,876,528	7,692,904
Other DOD		203,753,933	11,260,746
Passthrough		36,827,392	222,642
Total Department of Defense		$ 999,777,021	$ 91,242,865
U.S. Department of Commerce	11	$ 10,089,547	$ 526,984
U.S. Department of Commerce - Passthrough	11	272,446	-
U.S. Department of Energy	81	61,241,308	3,879,472
U.S. Department of Energy - Passthrough	81	13,451,021	10,349
U.S. Department of Health and Human Services	93	113,505,615	13,410,343
U.S. Department of Health and Human Services - Passthrough	93	19,685,219	(565)
U.S. Department of Homeland Security	97	28,287,007	586,578
U.S. Department of Homeland Security - Passthrough	97	483,671	-
U.S. Department of Transportation	20	29,693,738	1,833,930
U.S. Department of Transportation - Passthrough	20	357,471	-
Miscellaneous Federal Government	Various	7,006,982	450,586
Miscellaneous Federal Government - Passthrough	Various	1,120,769	-
National Aeronautics & Space Administration	43	50,086,508	6,674,218
National Aeronautics & Space Administration - Passthrough	43	11,780,726	659,373
National Science Foundation	47	81,406,863	9,198,801
National Science Foundation - Passthrough	47	15,350,701	-
Total Research and Development Cluster	Appendix A	$ 1,443,596,613	$ 128,472,934

The accompanying notes are an integral part of this schedule.

Massachusetts Institute of Technology
Schedule of Expenditures of Federal Awards
For the Year Ended June 30, 2018
Continued

Federal Grantor/ Pass Through Grantor/ Program Title	Federal CFDA Number	Total $ Amount Expended	$ Amount Passed to Subrecipients
Student Financial Assistance Cluster Expenditures			
U.S. Department of Education:			
Grants:			
Pell	84.063	$ 3,710,248	
Federal Supplemental Educational Opportunity	84.007	1,875,059	
Federal Work Study	84.033	1,790,154	
Federal Perkins Loan:	84.038		
New Loans		486,592	
Balance Outstanding at June 30, 2017		27,480,344	
Loan Administrative Cost Allowance		239,042	
William D. Ford Federal Direct Loan Program:	84.268		
Direct Subsidized and Unsubsidized Loans		9,334,106	
Direct Plus Loan for Parents and for Graduate or Professional Students		9,557,182	
Total Student Financial Assistance Cluster Expenditures		$ 54,472,727	
Highway Planning and Construction Cluster			
U.S. Department of Transportation - Passthrough	20.205	$ 99,010	$ -
Total Highway Planning and Construction Cluster	Appendix A-4	$ 99,010	$ -
Other Federal Expenditures:			
U.S. Department of Commerce	Appendix B	$ 46,702	$ 9,446
U.S. Department of Commerce - Passthrough	Appendix C	34,499	-
U.S. Department of Defense	Appendix B	26,200	-
U.S. Department of Defense - Passthrough	Appendix C	4,161,615	-
U.S. Department of Energy	Appendix B	353,439	-
U.S. Department of Energy - Passthrough	Appendix C	69,047	-
U.S. Department of Health and Human Services - Passthrough	Appendix C	15,584	-
U.S. Department of Homeland Security	Appendix B	324,458	-
U.S. Department of Transportation	Appendix B	33,338	-
Miscellaneous Federal Government	Appendix B	1,312,654	130,604
Miscellaneous Federal Government - Passthrough	Appendix C	268,719	-
National Aeronautics & Space Administration	Appendix B	2,211,994	7,660
National Aeronautics & Space Administration - Passthrough	Appendix C	697,220	-
Total Other Federal Expenditures		$ 9,555,469	$ 147,710
Total Federal Expenditures		$ 1,507,723,819	$ 128,620,644

The accompanying notes are an integral part of this schedule.

Massachusetts Institute of Technology
Notes to Schedule of Expenditures of Federal Awards
For the Year Ended June 30, 2018

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, 2018. 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 2012 and negotiated fixed rates for indirect costs through the 2020 fiscal year.

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

3. Federal Student Loan Programs - Continued

financial statements. The balance of loans outstanding for this program at June 30, 2018 is $21,222,793.

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 research laboratory 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 18 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	$ 23,427,759	$ 279,373,759	$ 185,905	$ 15,206,178	$ 318,193,601
Army	24,896,811	45,727,472	1,282,715	5,669,246	77,576,244
Classified	-	181,335,931	268	-	181,336,199
Defense Advanced Research Project Agency	15,444,976	24,692,096	-	6,559,955	46,697,027
Missile Defense Agency	-	73,627,842	19,010	-	73,646,852
National Security Agency	-	7,792,522	-	-	7,792,522
Navy	23,242,851	59,633,677	75,506	5,515,918	88,467,952
Other Department of Defense	3,115,330	200,638,603	43,104	2,269,587	206,066,624
Total Department of Defense	90,127,727	872,821,902	1,606,508	35,220,884	999,777,021
Department of Commerce	3,137,972	6,951,575	270,405	2,041	10,361,993
Department of Energy	59,633,399	1,607,909	56,763	13,394,258	74,692,329
Department of Health & Human Services	113,505,615	-	633,693	19,051,526	133,190,834
Department of Homeland Security	342,033	27,944,974	165,761	317,910	28,770,678
Department of Transportation	3,834,370	25,859,368	-	357,471	30,051,209
Miscellaneous Federal Government:					
Department of Agriculture	194,613	-	-	-	194,613
Department of Education	281,119	-	-	-	281,119
Department of Interior	57,581	-	-	250,037	307,618
Other	2,206,650	4,267,019	-	870,732	7,344,401
Total Miscellaneous Federal Government	2,739,963	4,267,019	-	1,120,769	8,127,751
Nat'l Aeronautics & Space Administration	23,630,520	26,455,988	2,305,555	9,475,171	61,867,234
National Science Foundation	81,406,863	-	256,239	15,094,462	96,757,564
Total Federal Sponsors	**$ 378,358,462**	**$ 965,908,735**	**$ 5,294,924**	**$ 94,034,492**	**$ 1,443,596,613**

Note for Appendices A-1, A-3, B and C details:
- Contracts without CFDA numbers were shown as ".RD" in the CFDA# column for Research & 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 2018 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	339,588	-
Air Force	FA8650-14-C-2472	Computational Aircraft Prototype Syntheses (CAPS)	12.RD	748,242	321,007
Air Force	FA8650-15-C-7564	ClearScope: Transparent multi-level inter-process and intra-process information scoping	12.RD	1,638,603	765,391
Air Force	FA8650-16-1-7641	Integrated Magnetooptical Devices for On-Chip Photonic Systems	12.910	-2,683	-
Air Force	FA8650-17-1-7713	Visible Integrated Photonics Enhanced Reality (VIPER)	12.910	156,663	-
Air Force	FA8650-17-C-9113	Nanoscale X-ray Tomosynthesis for Rapid Assessment of IC Dice (NXT-RAID)	12.RD	1,739,951	523,042
Air Force	FA8650-18-2-7838	Foundations of Scalable Non--Convex Optimization	12.910	16,856	-
Air Force	FA8750-14-2-0004	A General-Purpose Probabilistic Programming Platform with Effective Stochastic Interference	12.300	760,654	76,068
Air Force	FA8750-14-2-0242	CLIO: A Digital Code Assistant for Big Code Era	12.300	656,396	-
Air Force	FA8750-15-2-0272	Julia: A Fresh Approach to Technical Computing and Data Processing	12.910	747,040	-
Air Force	FA8750-16-2-0141	Development of a Wide-Bandgap Programmable Nanophotonic Processor	12.300	76,211	-
Air Force	FA8750-17-2-0019	Bayesian Nonparametric Models for Quantifying Uncertainty and Adapting Model Complexity	12.300	598	-
Air Force	FA8750-17-2-0126	Human Data Interaction Project	12.300	713,704	426,301
Air Force	FA8750-17-C-0229	Genetic circuit design for extreme environments enabled by models extracted from petabyte-scale perturbation analyses	12.RD	789,072	185,763
Air Force	FA8750-17-C-0239	BayesDB for Data-Centric Scientific Discovery	12.RD	715,436	-
Air Force	FA9453-16-C-0018	Quantifying Uncertainty in Velocity Models and Travel-Time Predictions for Local and Regional Monitoring Networks	12.RD	161,389	71,397
Air Force	FA9453-18-2-0017	Remote-epitaxy of multijunction solar cells on graphene coated III-V substrates	12.114	34,794	-
Air Force	FA9550-12-1-0259	Thin Film Self-Assembly of Globular Protein-Polymer Diblock Copolymers for Nanostructured Biofunctional Materials	12.800	46,906	-
Air Force	FA9550-12-1-0313	Fluid SLAM and the Robotic Reconstruction of Localized Atmospheric Phenomena	12.800	-5,082	-
Air Force	FA9550-12-1-0499	Advanced Photonics: Science, Technologies and Applications	12.800	385,901	-
Air Force	FA9550-13-1-0193	Quantum Optics in Diamond Nanophotonic Chips	12.800	-8,565	-
Air Force	FA9550-14-1-0031	Categorical approach to agent interaction	12.800	166,274	-

Appendix A1
Massachusetts Institute of Technology
Federal Research Support - On Campus
FY 2018 Expenditures

Federal Agency	Government Contract Number	Master Project Name	CFDA #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
Air Force	FA9550-14-1-0035	Advanced Quantum Material - A New Frontier for Ultracold Atoms	12.800	2,489,895	1,632,421
Air Force	FA9550-14-1-0052	Optimal Measurements for Scalable Quantum Technologies	12.800	1,809,302	717,217
Air Force	FA9550-14-1-0060	(BRI FY14) Theory-based Engineering of Biomolecular Circuits in Living Cells	12.800	885,800	245,339
Air Force	FA9550-14-1-0192	Constraining ICME Magnetic Field Orientations using Low Frequency Radio Polarimetric Observations	12.800	151,317	30,027
Air Force	FA9550-14-1-0226	Design and Synthesis of Polymers for Electrooptical Applications	12.800	20,909	-
Air Force	FA9550-14-1-0255	Isolated Soft-X-ray Attosecond Pulse Generation Using Synthesized Strong-Field Infrared Pulses	12.800	76,227	34,543
Air Force	FA9550-14-1-0292	Synthesis and Self-Assembly of Tri- and Tetra-block Bottlebrush Copolymers	12.800	-1,930	-
Air Force	FA9550-14-1-0399	Dynamic Data-Driven Motion Planning and Control for Pervasive Situational Awareness Application Systems	12.800	255,381	176,281
Air Force	FA9550-14-1-0403	Network Coding for Strong Consistency Semantics in Distributed Shared Memory Networks	12.800	207,465	-
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	1,398,211	835,692
Air Force	FA9550-15-1-0046	Toward a Phenomenological Theory of Transport Phenomena in Molten Sulfide Systems	12.800	34,723	-
Air Force	FA9550-15-1-0058	VOLUME MODE TRAVELING WAVE TUBE AMPLIFIER	12.800	142,739	-
Air Force	FA9550-15-1-0072	Gradient based optimization and control of chaotic multidisciplinary systems via Least Squares Shadowing adjoint method	12.800	27,929	-
Air Force	FA9550-15-1-0135	Molecular Tuning of Interfacial Electrocatalysis	12.800	78,318	-
Air Force	FA9550-15-1-0276	Topology Optimization, Fabrication Adaptivity, and Model-Data Assimilation of Novel Photonic Materials	12.800	302,104	-
Air Force	FA9550-15-1-0310	Phase-change on Nanoporous Graphene for Advanced Thermal Management	12.800	117,491	-
Air Force	FA9550-15-1-0473	Novel optical techniques for investigating cellular and vascular biophysics	12.800	95,994	61,661
Air Force	FA9550-15-1-0514	FATE: Foldable and Adaptive Two-Dimensional Electronics	12.800	1,529,457	460,537
Air Force	FA9550-16-1-0012	Bayesian Program Learning and Concept Induction	12.800	172,306	-
Air Force	FA9550-16-1-0108	Dynamic Data Driven Methods for Self-aware Aerospace Vechicles	12.800	354,258	183,674
Air Force	FA9550-16-1-0208	Automated Discovery of Important Chemical Reactions	12.800	51,299	-
Air Force	FA9550-16-1-0214	(YIP) The Hybrid Discontinuous Galerkin Method for Implicit Large Eddy Simulations of Manetohydrodynamic Flows	12.800	61,624	-
Air Force	FA9550-16-1-0228	Energy-Efficient High-Performance Computer Vision Systems	12.800	149,715	-

Appendix A1
Massachusetts Institute of Technology
Federal Research Support - On Campus
FY 2018 Expenditures

Federal Agency	Government Contract Number	Master Project Name	CFDA #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
Air Force	FA9550-16-1-0231	Complementing dynamical equations with data in adaptive reduced-order subspaces	12.800	111,627	-
Air Force	FA9550-16-1-0244	Instrumentation for Vacuum Nano-Electronic Devices High Current & Long Life Cathodes/Ion Sources	12.800	51,620	-
Air Force	FA9550-16-1-0273	Fluoro-Hydrogenated Ionic Liquids (FHIL) for High-Performance Electrospray Propulsion	12.800	95,935	-
Air Force	FA9550-16-1-0324	Quantum Gas Microscopy of Strongly Correlated Fermions	12.800	167,487	-
Air Force	FA9550-16-1-0382	Quantum Optoelectronics and Plasmonics with Novel Van der Waals Heterostructures	12.800	186,465	-
Air Force	FA9550-16-1-0391	High-Speed Quantum Communications using Silicon Photonics	12.800	178,652	-
Air Force	FA9550-16-1-0427	Uncovering and controlling the mechanisms of surface chemical and electrochemical stability on perovskite oxides	12.800	132,008	-
Air Force	FA9550-17-1-0058	Pixel matrices and other compositional analyses of interconnected systems	12.800	226,612	-
Air Force	FA9550-17-1-0081	The Marvin Minsky Institute for Society of Mind Theory	12.800	320,725	-
Air Force	FA9550-17-1-0114	The DDDAS Design of Programmable Mechanical Metamaterials	12.800	86,522	61,027
Air Force	FA9550-17-1-0136	Life-like Self-assembly through Dissipative Adaptation	12.800	271,766	-
Air Force	FA9550-17-1-0165	Learning to Plan in Hybrid Spaces	12.800	250,805	-
Air Force	FA9550-17-1-0192	Spontaneous Computation in Chemical Systems	12.800	50,509	-
Air Force	FA9550-17-1-0288	DNA-Programmed Epitaxy of Nanoparticle Superlattices	12.800	154,901	-
Air Force	FA9550-17-1-0316	High-resolution methods for passive geolocation and navigation	12.800	45,688	-
Air Force	FA9550-17-1-0362	User Interaction for Teaming with Autonomous Systems	12.800	157,247	-
Air Force	FA9550-17-1-0383	DURIP grant proposal Laser system for entangled-state generation in large atomic ensembles for measurements below the standard quantum limit	12.800	327,575	-
Air Force	FA9550-18-1-0023	Coupling in Uncertain Multi-physics Systems	12.800	191,833	-
Air Force	FA9550-18-1-0080	Remote Sensing of Coronal Mass Ejections using Widefield Low Frequency Imaging Arrays	12.800	79,578	-
Air Force	FA9550-18-1-0341	Low Bandgap, Highly Polarizable, and Intrinsically Conductive Polymers	12.800	51,722	-
		Total for Air Force		**23,427,759**	**6,807,389**
Army					
Army	W15QKN-15-1-0001	Environmentally Adaptive Off-Board Acoustic Sensing Concept for the Rapidly Changing Arctic Ocean	12.RD	-7,701	-
Army	W31P4Q-16-1-0001	Monolithic terahertz (THz) and long-wave infrared (LWIR) quantum cascade laser (QCL) frequency combs for threat detection	12.910	827,899	298,665

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Federal Agency	Government Contract Number	Master Project Name	CFDA #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
Army	W81XWH-13-1-0151	Nano-siRNA Particles and Combination Therapies for Ovarian Tumor Targeting	12.420	737,880	-
Army	W81XWH-14-1-0240	Extracellular Matrix Biomarkers for Diagnosis, Prognosis, Imaging and Targeting	12.420	1,078,342	226,678
Army	W81XWH-14-1-0544	Cartilage-Penetrating Chondrogenic Nanoparticles for Early Post-Traumatic Osteoarthritis Therapy	12.420	225,260	-
Army	W81XWH-14-C-0111	Prosthetic Knee-Angle-Foot System with Biomechatronic Sensing, Control and Power Generation	12.RD	718,221	-
Army	W81XWH-15-1-0095	OC140365 Investigate the role of obesity in ovarian cancer initiation and progression	12.420	2,825	-
Army	W81XWH-15-1-0365	The Therapeutic Effect of the Antitumor Drug 11beta and Related Molecules on Polycystic Kidney Disease	12.420	279,618	-
Army	W81XWH-16-1-0452	Tumor Immunotherapy by Gene-circuit Recruited Immunomodulatory Systems (TIGRIS) for Prostate Cancer	12.RD	167,399	-
Army	W81XWH-16-1-0565	Engineer Synthetic Tumor Recruited Immuno-Cellular Therapy (STRICT)	12.RD	267,767	-
Army	W81XWH-16-1-0671	Targeting MCL-1 with Unique Peptide Inhibitors Delivered Intracellularly Using a Novel Nanoparticle Formulation	12.420	162,400	-
Army	W81XWH-17-1-0159	Synthetic Tumor Recruited Immuno-Cellular Therapy (STRICT) for Lung Cancer	12.420	124,586	-
Army	W81XWH-17-1-0182	Adhesion-dependent regulation of mutant K-Ras protein levels in lung cancer LC160614	12.420	105,669	-
Army	W81XWH-17-1-0185	Analysis of toxicant induced translational control through codon-usage bias in lung cancer	12.420	157,244	-
Army	W81XWH-17-1-0427	Connecting Mechanical to Biomechanical Performance of Prosthetic Feet to Design Customized Passive Devices that Provide Improved Mobility	12.420	79,072	-
Army	W81XWH-17-1-0669	Heritably immunizing white-footed mice against tick-borne disease	12.420	33,513	-
Army	W911NF-10-1-0059	New Treatments for Stress-induced Dysregulation of Circuits Regulating Reward, Fear and Habit Learning	12.431	-35,197	-
Army	W911NF-11-1-0202	Optical-Transition Clocks With Microfabricated Frequency Combs For Performance Beyond the Standard Quantum Limit	12.431	-425	-
Army	W911NF-11-1-0281	Biologically Patterned Amyloid Scaffolds for Multifunctional and Multiscale Materials	12.431	190,847	-
Army	W911NF-11-1-0400	Multi-Qubit Enhanced Sensing and Metrology	12.431	600,461	377,872
Army	W911NF-12-2-0039	Barrier□Immune□Organ: Microphysiology, Microenvironment Engineered Tissue Construct Systems (BIO□MIMETICS)	12.431	1,994,248	123,247
Army	W911NF-13-1-0189	Strongly Correlated Quantum Gases of Atoms and Dipolar Molecules	12.431	71,404	-
Army	W911NF-13-D-0001, T.O. 1	ISN 3 FY'13 funding	12.RD	705,183	-

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Federal Agency	Government Contract Number	Master Project Name	CFDA #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
Army	W911NF-13-D-0001, T.O. 2	ISN 3 FY'13 funding	12.431	1,118,136	92,038
Army	W911NF-13-D-0001, T.O. 3	ISN 3 FY'13 funding	12.431	929,157	-
Army	W911NF-13-D-0001, T.O. 4	ISN 3 FY'13 funding	12.431	540,833	-
Army	W911NF-13-D-0001, T.O. 5	ISN 3 FY'13 funding	12.431	572,897	-
Army	W911NF-13-D-0001, T.O. 8	ISN 3 FY'13 funding	12.431	745,591	2,960
Army	W911NF-13-D-0001, T.O. 9	ISN 3 FY'13 funding	12.431	745,681	529,073
Army	W911NF-14-1-0037	Probing the Effects of Topography on Bedrock Fracture in the Shallow Subsurface	12.431	-4,328	-
Army	W911NF-14-1-0344	Novel states of light and matter mediated by collective Rydberg excitations	12.431	226,519	95,607
Army	W911NF-14-1-0433	A Belief-Space Approach to Integrated Intelligence- Research Area 10.3: Intelligent Networks	12.431	38,469	-
Army	W911NF-14-1-0539	Design of Stable Nanocrystalline Alloys in Compound-Forming Systems	12.431	-646	-
Army	W911NF-14-2-0071	Terahertz Nitride Sources (TNS)	12.431	129,669	-
Army	W911NF-15-1-0128	Realizing Novel Phases of Materials with Light-Matter Interaction	12.431	68,810	-
Army	W911NF-15-1-0164	11.2/1.3.2 A variational method for the extraction of intermittently unstable time-dependent modes directly from system observables	12.431	29,608	-
Army	W911NF-15-1-0166	Managing Uncertainty: Principles For Robust And Dexterous Continuum Mechanics	12.431	243,048	42,880
Army	W911NF-15-1-0183	MoD Molecules on Demand	12.431	92,903	-
Army	W911NF-15-1-0196	Explaining and Exploiting the Resistive Force Theory - Toward optimal, flexible, locomotor designs: Research Area 1.3.1	12.431	121,127	-
Army	W911NF-15-1-0249	Foundations of Statistical Methods for the Control of Far-from-equilibrium Driven Systems	12.431	70,230	-
Army	W911NF-15-1-0598	Toward Accurate Models of Wet Granular Media in Nature: Research Area 9.2	12.431	-18,712	-11,995
Army	W911NF-16-1-0034	Coupled Synthesis, Transport, and Magnetization Studies to Detect New Topological Phases	12.431	205,245	-
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	214,761	-
Army	W911NF-16-1-0551	Foundations of Scalable Statistical Learning	12.431	533,102	-
Army	W911NF-16-1-0568	Assembling Assemblers with Functional Digital Materials	12.431	372,617	-
Army	W911NF-16-2-0023	Automated System for Knowledge-based Continuous Organic Synthesis (ASKCOS)	12.910	2,466,975	238,716
Army	W911NF-16-2-0176	A Systems Approach for Managing the Health of Force	12.431	344,017	206,267

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Federal Agency	Government Contract Number	Master Project Name	CFDA #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
Army	W911NF-16-2-0192	Superdetectors: Unlocking the Potential of NonEquilibrium Superconductivity at the Nanoscale	12.910	350,711	133,673
Army	W911NF-17-1-0068	Smooth Modeling of Flows on Graphs	12.431	175,244	-
Army	W911NF-17-1-0174	Physical Properties of Materials: Exotic Physical Properties of Electronically Coupled Two-Dimensional Metal-Organic Frameworks	12.431	218,757	-
Army	W911NF-17-1-0223	Improved Ceramic Manufacturability With Electric Field Assisted Sintering: Developing Underlying Principles	12.431	82,778	-
Army	W911NF-17-1-0268	Ultrapure Reactive Ion Etching for Scalable Nanofabrication of Carbon-Based Semiconductor Quantum Devices	12.431	253,905	-
Army	W911NF-17-1-0433	New Frameworks for Quantum Algorithms	12.431	146,358	-
Army	W911NF-17-1-0435	High-Quality Tunable Graphene Plasmonic Metamaterials	12.431	28,604	-
Army	W911NF-17-1-0508	10.1.2:10.1.1: Low Latency Wireless Networks for Mission Critical Communications	12.431	32,487	-
Army	W911NF-17-1-0521	Polymer Chemistry: Uniform chiral polymers by IEG: synthesis and assembly	12.431	91,578	-
Army	W911NF-17-1-0527	Quantum Machine Learning	12.431	158,823	-
Army	W911NF-17-2-0043	An Osseointegrated Transfemoral Prosthesis Offering Long-Term Bi-Directional Efferent-Afferent Neural Transmission	12.910	817,117	462,589
Army	W911NF-17-2-0077	Programming seed cells to grow and differentiate into defined patterns	12.431	1,089,378	-
Army	W911NF-17-2-0098	FACETS: Fabrication of Autonomously Constructed Engineered Three-dimensional Shapes	12.431	948,616	369,278
Army	W911NF-18-1-0063	Research Area 10.3: Reliability and robustness for fast Bayesian inference of complex data	12.431	87,199	-
Army	W911NF-18-1-0116	Improving Qubit Performance with Advanced, Novel, & Emerging Materials and Architectures	12.431	77,167	-
Army	W911NF-18-1-0118	Rheological Interaction Physics of Wheeled Locomotion in Soft Substrates for Improved Mobility: MIT Component	12.431	5,067	-
Army	W911NF-18-2-0048	ISN 4 Collaborative Agreement Core 6.1 Funding	12.431	1,510,825	-
Army	W911NF-18-2-0055	Synthetic Routes to Graphamid and Grapheylene by High Pressure Control of In-Plane Polymerization and Activation Volume	12.431	24,840	-
Army	W912DW-17-P-0088	Standardization of Polymeric Sampling for Measuring Feeely Dissolved Organic Contaminant Concentrations in Sediment Porewater	12.RD	47,180	-
Army	W912HQ-14-C-0028	Integrated Passive Sampler-Food Web Modeling Framework for Monitoring Remedy Effectiveness	12.RD	119,223	-

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Federal Agency	Government Contract Number	Master Project Name	CFDA #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
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	201,712	-
Army	W912HZ-17-2-0027	Carbon Nanotube Sensors to Enable Real-Time Distributed Sensing of Contaminates in Water	12.630	157,013	-
		Total for Army		**24,896,811**	**3,187,549**
DARPA					
DARPA	HR0011-11-C-0100	Memory System with Monolithic CMOS Photonic Networks for High-Performance, Energy-efficient Embedded Manycore Machines	12.RD	103,874	117,837
DARPA	HR0011-12-2-0007	Ebrium Silicon Photonic Integrated Oscillator and RADAR (ESPIOR)	12.910	3,813	-
DARPA	HR0011-15-2-0012	MEMS Deuterium Ionizers for Compact Neutron Sources	12.910	242,137	-
DARPA	HR0011-15-2-0033	Technology to Genetically Engineer Otherwise Intractable Bacteria to Manipulate Microbiomes	12.910	490,281	539,318
DARPA	HR0011-15-2-0047	Computer-Synthesized Protocols for Resilient Networking	12.910	457,368	190,385
DARPA	HR0011-15-C-0056	Chip-Scale Electronic - Photonic Synthesizer (CS-EPS)	12.RD	1,947,518	282,347
DARPA	HR0011-15-C-0084	The MIT-Broad Foundry: TA2	12.RD	6,930,928	3,621,591
DARPA	HR0011-15-C-0091	ROBUST: Robust Operation of Bacterial Universes with Synthetic-biology Technologies	12.910	989,468	485,465
DARPA	HR0011-15-C-0155	MAGnetic Neural EXcitation (MAGNEX)	12.RD	756,021	279,638
DARPA	HR0011-16-2-0041	Supporting DARPA Matrix Program via Ab Initio Simulation of Thermoelectric Transport	12.910	289,068	-
DARPA	HR0011-16-C-0030	Principles, Limits, and Methods for Computational Periscopy	12.RD	1,336,574	192,327
DARPA	HR00111720029	Large-scale, Reconfigurable and Multifunctional 2.5-D Conformal Optics	12.910	837,002	329,228
DARPA	HR00111720061	2D material based layer transfer for maximizing maganetoelectric coupling	12.910	457,709	168,344
DARPA	HR00111820007	Morphing Morphogenesis	12.910	172,955	-
DARPA	HR0011-18-3-0006	Revolutionizing Computing Systems through Dense and Fine-grained Monolithic 3D Integration	12.RD	2,496	-
DARPA	HR001118C0018	The Hardware Security Compiler: A Rapid-Development Workflow with End-to-End Formal Verification	12.RD	436,823	66,898
DARPA	N66001-16-C-4007	Demonstration of On-Demand Continuous Flow Manufacturing of Pharmaceuticals	12.910	-9,058	-
		Total for DARPA		**15,444,976**	**6,273,377**

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Federal Agency	Government Contract Number	Master Project Name	CFDA #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
Navy					
Navy	N00014-04-1-0543	Collaborative Human-Computer Decision Making for Command and Control Resource Allocation	12.300	0	-
Navy	N00014-09-1-1051	SMart Adaptive Reliable Teams for Persustent Surveillance (SMARTS)	12.300	8,190	9,815
Navy	N00014-11-1-0657	A New Enviornmentally Sound Technology for Metals Extraction: a Technical Feasibility Study of Rare-Earth Metal Production by Molten Oxide Electrolysis	12.300	-5,829	-
Navy	N00014-11-1-0688	Nonparametric Bayesian Models to Represent Knowledge and Uncertainty for Decentralized Planning	12.300	646,216	194,730
Navy	N00014-12-1-0071	Prospective Human-Guided Teleautonomy for Agile Mobility and Dexterous Manipulation	12.300	101,516	-31
Navy	N00014-12-1-0521	A New Technology for Metals Extraction: High-temperature electrolysis of Molten Sulfide/Oxide Electrolysis for Molybdenum and Rhenium Extraction	12.300	-716	-
Navy	N00014-12-1-0915	Ultra-High Performance ADCs in GaN	12.300	60,662	-
Navy	N00014-12-1-0959	Low Dimensionality Transistors for High Performance Electronics	12.300	10	-
Navy	N00014-12-1-0999	Decentralized online optimization in multi-agent systems in dynamic and uncertain environments	12.300	-5,671	-
Navy	N00014-12-1-1000	persistent Decentralized Online Tasks (pDOT): An Online Optimization Approach to Multi-Agent Persistent Monitoring in Uncertain Environments	12.300	-35,009	-34,719
Navy	N00014-13-1-0403	THIS GRANT IS BEING CONTINUED UNDER N00014-16-1-2122, Inversion, uncertainties, and multiple scattering in synthetic aperture radar/sonar	12.300	-19	-
Navy	N00014-13-1-0424	Ultra-High-Throughput Design and Optimization of Sense-and-Actuate Circuits in Marine and Soil Bacteria	12.300	-797	-
Navy	N00014-13-1-0647	Biologically Inspired Engineering of Underwater Adhesives with Synthetic Biology	12.300	6,363	-
Navy	N00014-13-1-0878	METANORM- A Multidisciplinary Approach to the Analysis and Evaluation of Norms and Models of Governance for Cyberspace	12.300	52,138	9,248
Navy	N00014-14-1-0006	Defeating Code Resue Attacks Using Minimal Hardware Modifications	12.300	182,841	-
Navy	N00014-14-1-0062	Hurricane Outflow Criticality: Observational Tests and Effect on Hurricane Structure and Intensity	12.300	4,301	-
Navy	N00014-14-1-0073	Practical, Fast, and Approximate Algorithms for Discrete Optimization Problems	12.300	4,870	-
Navy	N00014-14-1-0166	ESRDC - DESIGNING AND POWERING THE FUTURE FLEET	12.300	97,689	-
Navy	N00014-14-1-0191	A Unified Approach to Passive and Active Ocean Acoustic Waveguide Remote Sensing	12.300	-305	-

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Navy	N00014-14-1-0349	Hybrid Graphene-Silicon Photonic Devices for Signal Processing and Imaging	12.300	-1,480	-
Navy	N00014-14-1-0476	Long-duration Environmentally-adaptive Autonomous Rigorous Naval Systems (LEARNS)	12.300	205,716	-
Navy	N00014-14-1-0486	Active Perception, Representation and Estimation for Large-Scale Long-Horizon Domains	12.300	451	-
Navy	N00014-14-1-0619	Harnessing Extraordinary Surface and Bulk Properties of Graphene-Polymer Nanocomposite for Advanced Naval Coating	12.300	-4,445	-
Navy	N00014-14-1-0725	Bayesian Nonlinear Assimilation of Eulerian and Lagrangian Coastal Flow Data	12.300	10,378	-
Navy	N00014-14-1-0804	Quantum Spin Gyroscope	12.300	0	-
Navy	N00014-15-1-2083	Online Optimization and Learning under Uncertainty	12.300	216,368	-
Navy	N00014-15-1-2213	Multi-Objective COLREGS-Based Collision Avoidance for Unmanned Marine Vehicles	12.300	57,737	-
Navy	N00014-15-1-2227	Multi-objective Optimization and Mixed-Horizon Decision-Making for Autonomous Vehicles	12.300	65,579	-
Navy	N00014-15-1-2342	Rigorous Modeling and Computation for Sparse Multivariate Statistical Problems	12.300	190,456	-
Navy	N00014-15-1-2381	A probalistic framework for the reduced-order modeling of rare events in water waves and mechanical systems	12.300	168,374	-
Navy	N00014-15-1-2460	Computational Wave Hydromechanics in Support of Model Tests in The MASK Wave Basin	12.300	119,570	-
Navy	N00014-15-1-2483	Surface Structure Enhanced Microchannels for Two-Phase Thermal Management	12.300	120,062	-
Navy	N00014-15-1-2597	Seamless Multi-scale Forecasting: Hybridizable Unstructured-mesh Modeling and Conservative Two-Way Nesting	12.300	165,399	-
Navy	N00014-15-1-2616	Northern Arabian Sea Circulation - autonomous research: Optimal Planning Systems (NASCar-OPS)	12.300	120,868	-
Navy	N00014-15-1-2622	Investigating flow features near abrupt topography in the Mariana Basin	12.300	52,566	39,115
Navy	N00014-15-1-2626	High-Order Multi-Resolution Multi-Dynamics Modeling for FLEAT	12.300	83,216	-
Navy	N00014-15-1-2694	Direct Measurement and Modeling of Glass Under Shock Loading	12.300	177,577	-
Navy	N00014-15-1-2751	Design and Metrology Support for Evaluation of High Power Fault Protection Apparatus	12.300	1	-
Navy	N00014-15-1-2763	USING BIO-INSPIRED MATERIAL CROSSLINK DYNAMICS TO ENGINEER ENERGY-DISSIPATIVE POLYMER MECHANICS	12.300	173,100	-
Navy	N00014-16-1-2081	Rapid Assessment of the Acoustic Environment in the Changing Arctic	12.300	43,011	-

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Federal Agency	Government Contract Number	Master Project Name	CFDA #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
Navy	N00014-16-1-2090	Time-Resolved Measurement of Physical and Chemical Evolution of Energetic Materials Under Dynamic Shock Loading	12.300	130,024	-
Navy	N00014-16-1-2122	THIS GRANT IS BEING CONTINUED UNDER N00014-16-1-2122, Inversion, uncertainties, and multiple scattering in synthetic aperture radar/sonar	12.300	28,450	-
Navy	N00014-16-1-2141	Design and Operation of Efficient and Secure Navigation Networks	12.300	436,825	-
Navy	N00014-16-1-2144	NEPTUNE Pilot Proposal	12.300	474,633	-
Navy	N00014-16-1-2181	Computer-Aided Engineering for Nucleic Acid-Based Nanotechnology	12.300	12,908	-
Navy	N00014-16-1-2200	4D Modeling of Underwater Acoustics in the Estuarine Environment Using Direct Simulations on HPC Platforms	12.300	151,508	-
Navy	N00014-16-1-2226	Quantum Spin Gyroscope	12.300	19,197	-
Navy	N00014-16-1-2230	Low Dimensionality Transistors for High Performance Electronics	12.300	1,861	-
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	334,426	-
Navy	N00014-16-1-2388	Next-generation Genetic Devices: Model-guided Discovery and Optimization of Navy-relevant Cell-based Sensors	12.300	640,390	519,787
Navy	N00014-16-1-2432	Synthesis Genome for Novel Oxides: accelerating realization of advanced materials	12.300	270,177	-
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	121,887	-
Navy	N00014-16-1-2506	High-throughput Assembly and Characterization Tools for Structural DNA Nanotechnology	12.300	2,590	-
Navy	N00014-16-1-2509	Synthetic Biology for Advanced Functional Materials	12.300	686,517	-
Navy	N00014-16-1-2587	An array of Pop-up Data Shuttle, Current and Pressure recording Inverted Echo Sounders (PDS-CPIES) for monitoring deep-sea, near-inertial currents and surface-ice cover in the Artic Ocean	12.300	-309	-
Navy	N00014-16-1-2628	Resource Constrained Cooperative Underwater Localization and Mapping	12.300	170,695	-
Navy	N00014-16-1-2657	Investigation of Emerging Quantum Materials and Topological Order	12.300	300,987	-
Navy	N00014-16-1-2783	Ultra-High-Throughput Design and Optimization of Sense-and-Actuate Circuits in Marine and Soil Bacteria	12.300	116,666	-
Navy	N00014-16-1-2786	Decentralized online optimization in multi-agent systems in dynamic and uncertain environments	12.300	-10,757	-
Navy	N00014-16-1-2787	persistent Decentralized Online Tasks (pDOT): An Online Optimization Approach to Multi-Agent Persistent Monitoring in Uncertain Environments	12.300	166,374	133,431

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Federal Agency	Government Contract Number	Master Project Name	CFDA #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
Navy	N00014-16-1-2815	Quantum simulators with ultracold atoms - mapping out possibilities for new materials	12.300	611,118	-
Navy	N00014-16-1-2945	Incorporating Distributed Systems in Early-Stage Set-Based Design of Navy Ships	12.300	113,048	-
Navy	N00014-16-1-2953	DNA Origami Scaffolds for Single-particle Cryo-Electron Microscopy of Viral RNA	12.300	320,957	72,281
Navy	N00014-16-1-2998	Lagrangian-based analysis of Kuroshio flow induced transport in the South-China Sea	12.300	13,880	-
Navy	N00014-16-1-3031	Stability of Floating Bodies in a Stochastic Seastate	12.300	114,886	-
Navy	N00014-16-1-3105	Understanding Dynamic Stability of Advanced Ships in Steep Waves by Direct Fully-Nonlinear Computations	12.300	144,940	-
Navy	N00014-16-1-3116	Mapping the spatio-temporal dynamics of perception in the human brain	12.300	628,911	-
Navy	N00014-16-1-3141	Laser systems for ultracold atoms and molecules	12.300	93,569	-
Navy	N00014-16-1-3163	A New Paradigm for Analysis of Complex, Networked, Social and Engineering Systems	12.300	367,923	-
Navy	N00014-16-1-3181	Smart Sea Skin: Flexible Multi-sensing System to Probe Marine Organism-Surface Interactions	12.300	287,086	-
Navy	N00014-17-1-2068	DURIP: X-ray Microscope for 4D in-situ Quantitative Tomography of Game-changing Nanoengineered Structural Advanced Composites for Sea-based Aviation and Other Applications	12.300	1,016,543	-
Navy	N00014-17-1-2072	Context and Task-aware Active Perception for Multiagent Systems	12.300	519,932	154,086
Navy	N00014-17-1-2077	Simulation-Based Classification for Structural Health Monitoring; A Parametrized Component Model-Order-Reduction Approach	12.300	118,278	-
Navy	N00014-17-1-2089	Structures, Mechanisms & Statistics of Air-Entraining Free-Surface Turbulent Flows	12.300	174,503	-
Navy	N00014-17-1-2139	Nanostitched Composites with Improved Interlaminar and Intralaminar Strengths for Advanced Airframes in Sea-based Aviation - Bridge Proposal	12.300	105,835	-
Navy	N00014-17-1-2147	Statistical Learning Theory of Complex Causal Models	12.300	353,585	-
Navy	N00014-17-1-2177	Optimization Over Combinatorial Optimization Polytopes	12.300	196,660	-
Navy	N00014-17-1-2186	Observational Benchmarks for BSION project	12.300	139,739	-
Navy	N00014-17-1-2194	Fast, Exact, and Approximate Algorithms in Network and Combinatorial Optimization	12.300	133,261	-
Navy	N00014-17-1-2197	A Unified Approach to Passive and Active Ocean Acoustic Waveguide Remote Sensing	12.300	603,466	-
Navy	N00014-17-1-2236	Tera-Scale, Energy-Efficient Wireline Communication Using Dielectric Waveguide	12.300	34,206	-
Navy	N00014-17-1-2253	Experiments with Trapped Neutral Atoms	12.300	57,998	-

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Federal Agency	Government Contract Number	Master Project Name	CFDA #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
Navy	N00014-17-1-2254	Optical-transition atomic clock beyond the standard quantum limit	12.300	249,365	-
Navy	N00014-17-1-2257	Topologically Protected Quantum States in Superfluid Fermi Gases	12.300	298,768	-
Navy	N00014-17-1-2320	Computational Design of Sophisticated Materials with Innovative Functions and Energetic Efficiency	12.300	384,700	-
Navy	N00014-17-1-2363	A Micro-Raman Thermography System for High Spatial Resolution Thermal Characterization of Microelectronic Devices and their Thermal Management Solutions	12.300	22,015	-
Navy	N00014-17-1-2379	A System for Efficient and Accurate Network Navigation	12.300	19,846	-
Navy	N00014-17-1-2474	Environmentally Adaptive Acoustic Communication and Navigation in the new Arctic	12.300	244,009	-
Navy	N00014-17-1-2570	Aquaticus: A Collaborative Human-Machine Robotic Competition	12.RD	307,235	-
Navy	N00014-17-1-2585	Terahertz Transmission Over Dielectric Waveguide for High Speed Communication	12.300	39,856	-
Navy	N00014-17-1-2598	Inference And Dynamics On Networks	12.300	59,767	-
Navy	N00014-17-1-2609	Hierarchical Nanoscale Materials Programmed using Structured DNA Nanoparticles	12.300	155,478	-
Navy	N00014-17-1-2670	Vision-based Agile Autonomous Navigation in Contested Environments using High-Performance Embedded Computing	12.300	156,396	-
Navy	N00014-17-1-2706	Glass under shock loading: Novel measurements at National Laboratory facilities.	12.300	34,634	-
Navy	N00014-17-1-2744	Strong-field Interactions of Single-cycle Mid-infrared Pulses with Solids and Gases	12.300	412	-
Navy	N00014-17-1-2790	Algorithmic Tractability and Computational Limits in High-Dimensional Linear Regression	12.300	121,762	-
Navy	N00014-17-1-2791	High-Dimensional Causal Prediction	12.300	163,178	-
Navy	N00014-17-1-2883	Complex Two-Dimensional Materials for Emergent Electronics	12.300	170,641	-
Navy	N00014-17-1-2920	Multi-Sensing Multi-Active Nanocomposite Coating for Quantitatively Characterizing Foulant-Surface Interactions and Controlled Fouling Release	12.300	154,556	-
Navy	N00014-17-1-2956	Computer-aided design of functional transition metal complexes	12.300	40,408	-
Navy	N00014-17-1-2959	Machine Learning Enabled Wall Modeling for LES of Turbulent Boundary Layers including Laminar Precursors	12.300	53,200	-
Navy	N00014-17-1-2977	Bridging the Nano-Macro gap for 3D Optical/Multi-functional Metamaterials	12.300	97,071	-
Navy	N00014-17-1-2985	Support Vector Machine Learning in Marine Hydrodynamic	12.300	109,492	-
Navy	N00014-18-1-2066	Optical Breakdown Acoustic Sources for Broadband Underwater Sensing	12.300	86,254	-

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Federal Agency	Government Contract Number	Master Project Name	CFDA #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
Navy	N00014-18-1-2079	Extended Formulations for Advanced Mixed Integer Convex Optimization	12.300	30,967	-
Navy	N00014-18-1-2085	ONR Graduate Traineeship Special Research Award in Ocean Acoustics Program for Daniel Michael Duane	12.300	35,063	-
Navy	N00014-18-1-2122	Online Optimization and Learning in a Complex Environment	12.300	180	-
Navy	N00014-18-1-2177	Fin-based Structures for Increasing Linearity in GaN Transistors	12.300	32,578	-
Navy	N00014-18-1-2187	Design and Metrology Support for High Power Fault Testing Systems	12.300	13,546	-
Navy	N00014-18-1-2210	Mathematical Certification of Mission Success Robustness for Multi-Agent Dynamic Group Action Models with Imperfect Perception	12.300	18,888	-
Navy	N00014-18-1-2258	Epitaxial Growth of Structural Proteins into Hierarchical Mesostructured Materials	12.300	31,392	-
Navy	N00014-18-1-2284	Tracking hydrogen: A multi-scale experimental-computational study of hydrogen influence on dislocations, plasticity, damage	12.300	5,172	-
Navy	N00014-18-1-2290	DNA Synthesizer for the Development of New Modalities for DNA Nanostructures	12.300	101,981	-
Navy	N00014-18-1-2298	Combinatorial Statistical Inference with Mathematical Optimization	12.300	8,902	-
Navy	N00014-18-1-2458	Numerical Superintensity of Tropical Cyclones: A Unique Challenge in Atmospheric Modeling	12.300	36,912	-
Navy	N00173-13-2-C009	Stochastic Forcing for Environmental Error and Probabilistic Estimation	12.300	15,100	-
Navy	N00189-14-C-Z082	Engineering Support for the Interagency Correlator	12.RD	101,687	-
Navy	N00244-17-1-0011	Assessing Vulnerabilities in Model-Centric Acquisition Programs Using Cause-Effect Mapping	12.300	62,462	-
Navy	N66001-11-C-4147	Compact, On-Demand Continuous Flow Manufacturing of Pharmaceuticals	12.RD	39,799	-
Navy	N66001-13-C-4025	INSCyT 2: Phase II Parent	12.RD	3,006,418	517,622
Navy	N66001-14-2-4058	Synthetic polymer xenoproteins	12.910	953,660	-
Navy	N66001-15-1-4022	Field Emission Arrays for Dynamic Pattern Generation	12.910	10	-
Navy	N66001-15-C-4030	Multi-Scale Representation and Translation for Complex, Heterogeneous Materials	12.RD	375,071	-
Navy	N66001-16-1-4038	Enhancing Lifetime and Performance of Field Emitter Array Cathodes	12.910	329,738	-
Navy	N66001-16-C-4005	Pharmacy on Demand Phase III: Compact, On-Demand Continuous Flow Manufacturing of Pharmaceuticals	12.RD	-17,543	-
Navy	N66001-16-C-4039	Novel Millimeter Wave Klystron Amplifier	12.RD	384,187	85,012
Navy	N66001-17-1-4039	The Promise of Diversity: Geometry, Probability, Optimization and Machine Learning	12.910	107,114	-

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Federal Agency	Government Contract Number	Master Project Name	CFDA #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
Navy	N66001-17-2-4054	Daisy drive systems for the precise alteration of local populations	12.910	1,329,107	232,700
Navy	N68936-16-P-0688	Human-Automation Interaction to Support Multiple Platform Mission Planning	12.RD	-14,908	-
		Total for Navy		**23,242,851**	**1,933,078**
Other DOD					
NSA	H98230-14-C-1424	Supercloud: a Unified Approach to Compute, Big Data, Database and Enterprise Clouds	12.RD	85,172	-
Other DOD	HDTRA1-13-1-0001	Evaluation of Radiation-Induced Photonic Defects in Si, Ge, Chalcogenides and Polymers	12.351	117,687	44,090
Other DOD	HDTRA1-13-1-0038	Nucleopore Membrane Mimics As Selective Filters for Biological Agents	12.351	724,957	-
Other DOD	HDTRA1-14-1-0007	Engineered Autonomous Distributed Circuits for Adaptive Threat Elimination	12.351	416,567	-
Other DOD	HDTRA1-14-1-0057	Radiation Effects in III-V MOSFETs for sub-10 nm CMOS	12.351	248,360	83,179
Other DOD	HDTRA1-15-1-0040	Development of Synthetic Probiotics to Detect and Eliminate Biothreat Agents	12.351	374,553	-
Other DOD	HDTRA1-15-1-0050	Deciphering Novel Mechanisms of Antimicrobial Resistance with Massively Parallel Combinatorial Genetics	12.351	340,881	-
Other DOD	HDTRA1-15-1-0051	Gene Duplication and Amplification in the Evolution of Antimicrobial Resistance: Clinical Significance and Diagnostic Potential	12.351	474,169	-
Other DOD	HDTRA1-15-1-0060	Understanding radiation damage mechanisms in MEMS/NEMS through combined optomechanical interrogation and micro-analysis (PerD-Topic 8)	12.351	192,902	80,683
Other DOD	HDTRA1-16-1-0038	Using Coacervates to Maximize Enzymatic Activity at Interfaces for Heavy Metal Detection	12.351	140,081	-
		Total for Other DOD		**3,115,330**	**207,951**
		TOTAL for Department of Defense		**90,127,727**	**18,409,345**

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Federal Agency	Government Contract Number	Master Project Name	CFDA #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
DEPARTMENT OF COMMERCE					
DOC	60NANB15D361	Focusing mirrors for novel neutron imaging instruments	11.609	120,372	-
DOC	70NANB16H164	Measurement Standards to Enable Predictive Synthetic Biology	11.609	185,550	-
DOC	70NANB16H227N	Smart Grid in a Room (SGRS)	11.619	24,786	-
DOC	70NANB17H177	Situational Awareness For Emergencies Through Network-Enabled Technologies (SafeT-N	11.609	101,666	-
DOC	NA14OAR4170077	2014 Parent Account: Sea Grant College Program	11.417	1,843,580	526,984
DOC	NA14OAR4310132	Deposition of Atmosphereic Organic Carbon: New Constraints on the Reactive Carbon Budget	11.431	60,722	-
DOC	NA16OAR4310112	Influence of atmospheric ageing on fire-derived carbonaceous particles: laboratory studies and modeling in support of FIREX	11.431	66,899	-
DOC	NA16OAR4310177	Exploring linkages between AMOC and ITCZ variability	11.431	129,605	-
DOC	NA18OAR4170105	2018 Omnibus: Sea Grant College Program	11.417	604,792	-
		Total for Department of Commerce		**3,137,972**	**526,984**
		TOTAL for Department of Commerce		**3,137,972**	**526,984**

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Federal Agency	Government Contract Number	Master Project Name	CFDA #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
DEPARTMENT OF ENERGY					
DOE	4F-30121	Technologies and Concepts to Reduce the US Dependence on Imported Petroleum and Emission of Greenhouse Warming Pollutannts	81.RD	20,983	-
DOE	DE-AR0000433	Engineering high yield pathways for methane activation and conversion to liquid fuels	81.135	-31,184	979
DOE	DE-AR0000471	Full Spectrum Stacked Solar-Thermal and PV Receiver	81.135	145,865	-6,500
DOE	DE-AR0000611	Sustainable Travel Incentives with Prediction, Optimization, and Personalization(TRIPOD)	81.135	1,861,901	195,046
DOE	DE-AR0000625	INTEGRATED MICRO-OPTICAL CONCENTRATOR PHOTOVOLTAICS WITH LATERAL MULTIJUNCTION CELLS	81.135	1,067,192	74,832
DOE	DE-AR0000632	Wafer-Level Integrated Concentrating Photovoltaics	81.135	139,295	-
DOE	DE-AR0000713	Generating Realistic Information for Development of Distribution and Transmission Algorithms	81.135	252,830	127,115
DOE	DE-AR0000847	Seamless Hybrid-integrated Interconnect NEtwork (SHINE)	81.135	299,857	154,110
DOE	DE-EE0007531	Improving Tolerance of Yeast to Lignocellulose-Derived Feedstocks and Products	81.087	440,114	-
DOE	DE-EE0007535	Low Cost (CAPEX and variable): Tool design for cell and module fabrication with thin, free-standing silicon wafers	81.087	550,157	-
DOE	DE-EE0007662	Modeling Photovoltaics Innovation and Deployment Dynamics	81.117	395,612	-
DOE	DE-EE0007810	Self-assembling rechargeable Li batteries from alkali and alkaline-earth halides	81.086	341,772	80,761
DOE	DE-EE0007982	Rapid Construction of Validated Chemistry Models for Advanced Biofuels	81.087	169,619	23,278
DOE	DE-EE0008151	Two-dimensional material based layer transfer (2DLT) for low-cost, high-throughput, high-efficiency solar cells	81.087	207,092	-
DOE	DE-EI0003030	Dynamics of Energy Use in China	81.089	245,518	-
DOE	DE-EM0004484	NRI: Extra Robotic Limbs for Body Support in Kneeling and Crouching Works	81.104	155,125	-
DOE	DE-FC02-08ER54966	Center for the Study of Microturbulence	81.049	129,595	-
DOE	DE-FC02-93ER54186	D&T Parent	81.049	417,778	-
DOE	DE-FC02-93ER54186	Fusion Development and Technology - Parent	81.049	704,155	-
DOE	DE-FC02-99ER54512	Alcator C-Mod	81.049	1,097,346	-
DOE	DE-FE0013999	Fate of Methane emitted from dissociating marine hydrates: Modeling, Laboratory and Field constraints	81.RD	58,621	31,131

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Federal Agency	Government Contract Number	Master Project Name	CFDA #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
DOE	DE-FE0026109	Self-Regulating Surface Chemistry for More Robust Highly Durable Solid Oxide Fuel Cell Cathodes	81.089	111,447	-
DOE	DE-FE0026489	Electrochemically-Mediated AmineRegeneration In CO2 Scrubbing Processes	81.089	101,675	-
DOE	DE-FG02-00ER15087	Revealing Nanoscale Energy Flow Using Ultrafast Terahertz to X-Ray Beams	81.049	92,520	39,904
DOE	DE-FG02-02ER45977	Fundamental Studies on Heat Conduction in Polymers	81.049	139,254	-
DOE	DE-FG02-02ER45977	Spectrally-tunable far-field thermal radiation extraction	81.049	-3,857	-
DOE	DE-FG02-03ER46076	Strongly Correlated Electronic Systems: Local Moments and Conduction Electrons (Renewal)	81.049	223,810	-
DOE	DE-FG02-03ER54700	Physics of High Enery Plasmas	81.049	330,420	-
DOE	DE-FG02-07ER46454	PROBING EXCITONS IN CONFINED ENVIRONMENTS USING PHOTON-RESOLVED METHODS	81.049	264,856	-
DOE	DE-FG02-07ER46474	Bimolecular Interactions in Organic Semiconductors: Hot charge, Hot excitons, Efficiency Droop, and Instability	81.049	261,944	-
DOE	DE-FG02-08ER46488	Materials Exhibiting Biomimetic Carbon Fixation and Self-Repair: Theory and Experiment	81.049	110,230	-
DOE	DE-FG02-08ER46488	Self Assembly and Self-Repair of Novel Photovoltaic Complexes: Synthetic Analogs of Natural Processes	81.049	-753	-
DOE	DE-FG02-08ER46514	Novel Temperature Limited Tunneling Spectroscopy of Quantum Hall Systems	81.049	115,265	-
DOE	DE-FG02-08ER46521	Ultrafast Electronic and Structural Dyamics in Complex Materials	81.049	39,834	-
DOE	DE-FG02-08ER46521	Ultrafast Electronic and Structural Dynamics in Quantum Materials	81.049	310,230	-
DOE	DE-FG02-86ER13564	Metathesis Polymerization by Well-defined Molybdenum and Tungsten Alkylidene Complexes	81.049	151,959	-
DOE	DE-FG02-87ER13671	Spectroscopic and Dynamical Studies of Highly Energized Small Polyatomic Molecules	81.049	161,257	-
DOE	DE-FG02-91ER54109	THEORETICAL RESEARCH IN ADVANCED PHYSICS AND TECHNOLOGY	81.049	949,989	-
DOE	DE-FG02-91ER54109	Theoretical Research in Advanced Physics and Technology (Renewal/Continuation of 6931788)	81.049	294,526	-
DOE	DE-FG02-94ER40818	Laboratory for Nuclear Science (Nuclear Physics)	81.049	-698,057	-
DOE	DE-FG02-94ER40818	RESEARCH IN NUCLEAR PHYSICS, TASK J - MEDIUM ENERGY NUCLEAR PHYSICS	81.049	3,418,005	-
DOE	DE-FG02-94ER54235	APTE Parent	81.049	208,588	-
DOE	DE-FG02-94ER61937	An Integrated Framework for Climate Change Assessment	81.049	1,022,756	-
DOE	DE-FG02-96ER45571	First Principles Determination of Structure, Thermodynamics, and Transport in Metals and Oxides	81.049	11,585	-

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Federal Agency	Government Contract Number	Master Project Name	CFDA #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
DOE	DE-FG02-97ER14760	COLLABORATIVE RESEARCH: EVOLUTION OF PORE STRUCTURE AND PERMEABILITY OF ROCKS UNDER HYDROTHERMAL CONDITIONS	81.049	301,010	-
DOE	DE-FG02-99ER15004	Physics of Channelization: Theory, Experiment, and Observation	81.049	126,177	-
DOE	DE-FG02-99ER54525	PROPAGATION AND DAMPING OF HIGH HARMONIC FAST WAVES AND ELECTRON CYCLOTRON WAVES IN THE NSTX-U-DEVICE	81.049	119,643	-
DOE	DE-FG02-99ER54563	Fast Particle Wave Interaction and Alfven Eigenmodes in the JET Tokamak Plasma	81.049	173,302	-
DOE	DE-NA0002726	Explorations of Inertial-Confinement Fusion, High-Energy-Density Physics, and Laboratory Astrophysics	81.112	174,272	-
DOE	DE-NA0002788	Uncooled Chipscale Mid-infrared Photothermal Sensor for Ultra-sensitive Chemical Detection	81.113	165,354	31,133
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	405,613	-
DOE	DE-NA0003539	HEDP EXPLORATIONS OF KINETIC PHYSICS, PLASMA STOPPING POWER, HOHLRAUM FIELDS AND NUCLEAR ASTROPHYSICS	81.112	132,234	-
DOE	DE-NE0008268	Extraction of Uranium from Seawater: Design and Testing of a Symbiotic System	81.121	46,461	-
DOE	DE-NE0008270	Integral Full Core Multi-Physics PWR Benchmark with Measured Data	81.121	70,330	-
DOE	DE-NE0008285	Integrated FHR Technology Development: Tritium Management, Materials Testing, Salt Chemistry Control, Thermal-Hydraulics and Neutronics with Associated Benchmarking	81.121	348,397	234,656
DOE	DE-NE0008285-001	Integrated FHR Technology Development: Tritium Management, Materials Testing, Salt Chemistry Control, Thermal-Hydraulics and Neutronics with Associated Benchmarking	81.121	413,683	204,744
DOE	DE-NE0008413	Multilayer Composite Fuel Cladding for LWR Performance Enhancement and Severe Accident Tolerance	81.121	247,589	153,488
DOE	DE-NE0008416	Development of Accident Tolerant Fuel Options for Near Term Applications	81.121	933,061	440,906
DOE	DE-NE0008502	FY 2016 Scientific Infrastructure Support for Consolidated Innovative Nuclear Research	81.121	50,410	-
DOE	DE-NE0008509	University Reactor Upgrades Infrastructure Support for the MITR Research Reactor's Nuclear Instrumentation	81.121	205,855	-
DOE	DE-NE0008578	MULTI-GROUP TRANSPORT CROSS SECTION & DIFFUSION COEFFICIENT GENERATION FOR DETERMINISTIC REACTOR MODELS USING MONTE CAROL CALCULATIONS.	81.121	186,706	-

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Federal Agency	Government Contract Number	Master Project Name	CFDA #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
DOE	DE-NE0008671	Establishing MIT's experimental capabilities for LWR thermal-hydraulics investigations	81.121	219,725	-
DOE	DE-NE0008693	Determination of Critical Heat Flux and Leidenfrost Temperature on Candidate Accident Tolerant Fuel Materials	81.121	91,793	-
DOE	DE-SC0001088	Center for Excitonics - Main Operating Account for Deposits & Distributions	81.049	3,097,132	320,110
DOE	DE-SC0001299	Solid-State Solar-Thermal Energy Conversion Center (S3TEC)	81.049	3,585,858	782,730
DOE	DE-SC0002626	Electrochemically-Driven Phase Transitions in Battery Storage Compounds	81.049	144,017	-
DOE	DE-SC0002633	SISGR: Chemomechanics of Far-From Equilibrium Interfaces	81.049	828,106	-
DOE	DE-SC0006937	Electronic and Ionic Conductors from Ordered Microporous Materials	81.049	-12,557	-6
DOE	DE-SC0007106	Engineered Protein Nanostructures for Advanced Functional Materials	81.049	227,485	-
DOE	DE-SC0007106	Thermodynamics of Self-Assembly in Globular Protein-Polymer Conjugates	81.049	71,741	-
DOE	DE-SC0007883	Nonlinear and 3D MHD	81.049	203,307	-
DOE	DE-SC0008059	Graphene Membranes with Tunable Nanometer-Scale Pores	81.049	-18	-
DOE	DE-SC0008737	Partnership for Edge Physics Simulation	81.049	39,178	-
DOE	DE-SC0008739	Unconventional Metals in Strongly Correlated Systems	81.049	121,020	-
DOE	DE-SC0008740	Development of a Polarized 3He Ion Source for RHIC	81.049	179,182	-
DOE	DE-SC0008741	High Intensity Polarized Electron Gun	81.049	116,543	-
DOE	DE-SC0008743	Assembling Resuable Genetic Modules for Efficient Biofuel Production from Marine Macroalgae	81.049	295,071	271,901
DOE	DE-SC0008744	Optimizing oil production in oleaginous yeast by cell-wide measurements and genome-based models.	81.049	843,273	332,911
DOE	DE-SC0008766	Computing Properties of Hadrons, Nuclei and Nuclear Matter from Quantum Chromodynamics	81.049	-30,013	-
DOE	DE-SC0008923	CAP3: A Computer Aided Performance Programming Platform	81.049	63,702	-
DOE	DE-SC0009297	DiaMonD: An Integrated Multifaceted Approach to Mathematics at the Interfaces of Data, Models, and Decisions	81.049	500,384	-
DOE	DE-SC0009833	Development of an accelerator-based diagnostic for plasma-facing surfaces in magnetic confinement devices	81.049	119,801	-
DOE	DE-SC0010428	Biomimetic Templated Self-Assembly of Light Harvesting Nanostructures	81.049	88,376	-
DOE	DE-SC0010492	Control and Extension of High Performance Scenarios to Long Pulse	81.049	519,737	-
DOE	DE-SC0010495	From Quarks to the Cosmos: Ab initio studies in nuclear physics	81.049	151,423	-

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DOE	DE-SC0010497	Gluonic Excitations in Mesons	81.049	121,087	-
DOE	DE-SC0010526	Predictive Theory of Topological States of Matter	81.049	94,908	-
DOE	DE-SC0010538	Imaging Interfacial Electric Fields on Ultrafast Timescales	81.049	129,014	-
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	59,075	-
DOE	DE-SC0010795	Mesoscale Mechanochemistry of 2D Crystal Growth	81.049	16,444	-
DOE	DE-SC0011088	MIT Relativistic Heavy Ion Group	81.049	1,403,577	-
DOE	DE-SC0011090	FY2017-2019 Task R-Theoretical Nuclear	81.049	874,157	-
DOE	DE-SC0011091	Neutrino Physics – Task W	81.049	480,685	-
DOE	DE-SC0011755	AMS Operations	81.049	3,771,590	-
DOE	DE-SC0011848	AMS Research	81.049	2,080,667	-
DOE	DE-SC0011939	Task A: Particle Physics Collaboration	81.049	1,039,917	-
DOE	DE-SC0011970	LEPTON QUARK STUDIES, TASK F SUMMARY, FY 2015-17	81.049	127,743	-
DOE	DE-SC0012071	Support of US Burning Plasma Organization	81.049	187,193	-
DOE	DE-SC0012071	USBPO Support	81.049	0	-
DOE	DE-SC0012371	Interface-Driven Chiral Magnetism in Ultrathin Metallic Ferromagnets: Towards Skyrmion Spintronics	81.049	-37,039	-
DOE	DE-SC0012469	Preservation of Alcator C-Mod data and support of ITER research through ITPA participation	81.049	367,564	-
DOE	DE-SC0012470	MDSplus Development and Support	81.049	149,742	-
DOE	DE-SC0012470	MDSPlus Development and Support 2017-20	81.049	370,881	-
DOE	DE-SC0012555	Systems Biology Towards a Continuous Platform for Biofuels Production	81.049	257,345	76,388
DOE	DE-SC0012567	Task C: Theoretical High Energy Physics	81.049	703,842	-
DOE	DE-SC0012567	Theoretical High Energy Physics	81.049	19,515	-
DOE	DE-SC0013307	The Catalytic Reduction of Dinitrogen Under Mild Conditions	81.049	177,623	-
DOE	DE-SC0013499	Compact, low-cost, light-weight, superconducting, ironless cyclotrons for hadron radiotherapy	81.049	180,397	-
DOE	DE-SC0013905	Study of Heavy Flavor Mesons and Flavor-Tagged Jets with the CMS Detector	81.049	142,656	-
DOE	DE-SC0013999	Confronting Dark Matter with the Multiwavelength Sky	81.049	127,191	-
DOE	DE-SC0014176	Tunable Oxygen Reduction Electrocatalysis by Phenazine-Modified Carbons	81.049	155,167	-
DOE	DE-SC0014204	Whole-program Adaptive Error Detection and Mitigation	81.049	296,813	-
DOE	DE-SC0014229	Phase Contrast Imaging for Wendelstein 7-X	81.049	211,469	-

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Federal Agency	Government Contract Number	Master Project Name	CFDA #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
DOE	DE-SC0014251	Gas-Puff-Imaging for Diagnosis of Boundary and SOL Physics in W7-X	81.049	207,409	-
DOE	DE-SC0014264	MIT Plasma Science and Fusion Center Magnetic Confinement Fusion Experiment Research and Related Activities	81.049	7,639,265	-
DOE	DE-SC0014901	Computer-Aided Construction of Chemical Kinetic Models	81.049	72,290	-
DOE	DE-SC0015566	High Frequency, High Gradient Accelerator Research	81.049	393,994	-
DOE	DE-SC0016154	Measurement of Helicons and Parametric Decay Waves in DIII-D with Phase Contrast Imaging	81.049	212,585	-
DOE	DE-SC0016214	Molecular Understanding of Bifunctional Solid Lewis Acid Zeolites for the C-C Coupling of Alpha Keto Acids	81.049	116,171	-
DOE	DE-SC0016215	Magnetic Reconnection in Strongly-Magnetized, Weakly-Collisional Plasmas: Onset, Turbulence, and Energy-Partition in 3D, Plasmoid-Dominated Regimes	81.049	169,010	-
DOE	DE-SC0016285	AMS THERMAL COOLING SYSTEM	81.049	411,742	-
DOE	DE-SC0016408	Control of the Plasma-Material Interface for Long Pulse Optimization in EAST and KSTAR	81.049	92,295	-
DOE	DE-SC0016409	Disruption Prediction and Avoidance in High Beta Long Pulse KSTAR Plasmas	81.049	512,151	-
DOE	DE-SC0017381	Electron Temperature Fluctuation and n-T Phase Angle Measurements for Validation of Gyrokinetic Transport Models at ASDEX Upgrade	81.049	132,299	56,368
DOE	DE-SC0018090	Center for Integrated Simulation of Fusion Relevant RF Actuators	81.049	528,777	190,806
DOE	DE-SC0018091	Microparticle Supersonic Impact: A Testbed for the Exploration of Metals under Extreme Conditions	81.049	173,625	-
DOE	DE-SC0018094	Nonequilibrium Properties of Driven Electrochemical Interfaces	81.049	30,619	-
DOE	DE-SC0018095	Development of an Ultrahigh-bandwidth Phase Contrast Imaging System for detection fo Electron scale turbulence and Gigahertz Radiofrequecny Waves	81.049	67,175	-
DOE	DE-SC0018096	Simultaneous mitigation of density and energy errors in approximate DFT for transition metal chemistry	81.049	67,606	-
DOE	DE-SC0018097	Interrogating protein-protein association through spectroscopic studies of model membranes	81.049	178,911	-
DOE	DE-SC0018121	Computing the Properties of Matter with Leadership Computing Resources	81.049	425,807	-
DOE	DE-SC0018229	BATES RESEARCH & ENGINEERING CENTER, TASK L, 3 YEAR FY 2017-19	81.049	1,978,646	-
DOE	DE-SC0018235	Fundamental studies of thermal and electrical transport in microporous metal-organic frameworks	81.049	176,229	-
DOE	DE-SC0018357	Nonequilibrium Physics of Multiphase Flow in Porous Media: Wettability and Disorder	81.049	81,931	-

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Federal Agency	Government Contract Number	Master Project Name	CFDA #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
DOE	DE-SC0018652	Quantum simulation: From spin models to gauge-gravity correspondence	81.049	63,523	-
DOE	PO #629763	US CMS Common Operations	81.RD	54,036	-
DOE	PO 101633	Investigation of Nucleate Boiling Suppression in Annular Flow using Advanced Imaging Diagnostics and CFD Simulations	81.RD	182,649	62,681
DOE	PO 563385-REVISION 9	US CMS DAQ Subsystem	81.RD	246,451	-
DOE	PO-606667	US CMS HCAL Subsystem	81.RD	57,893	-
		Total for Department of Energy		**59,633,399**	**3,879,472**
		TOTAL for Department of Energy		**59,633,399**	**3,879,472**

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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	5-U01-FD005291-03	Integrated approach to determine equivalence in complex drug mixtures	93.103	37,353	-
HHS	HHSF223201310210C	A Systematic Approach to Addressing Intentional Adulteration of FDA-regulated Food and Drug Products and Ingredients Emanating from the Global Supply Chain	93.103	-18,463	-
HHS	HHSP233201500054C	Web Accessibility Initiative (WAI) Core	93.RD	376,379	-
HHS	HHSP233201500054C/DUNS #001425594	Web Accessibility Initiative (WAI) Core	93.RD	148,735	-
		Total for Other HHS		**544,005**	**-**
NIH					
NIH	1 K99 GM126277-01	Non-cleaved Electro-Mechanical Expansion (NEME) technology for super-resolution imaging of biological samples with conventional optical microscopes	93.859	2,360	-
NIH	1-DP1-AT009925-02	Neural Circuit Mechanisms of Social Homeostasis in Individuals and Supraorganismal Social Groups	93.213	53,816	-
NIH	1-DP2-AG044279-01	Early Warning Indicators of Tipping Points in Biological Systems	93.310	335,782	-
NIH	1DP2AI136597-01	Developing powerful daisy drive systems for the precise alteration of local populations	93.310	309,061	-
NIH	1-DP2-CA195769-01	Imaging Transcription with Single Molecule Resolution in Live Mammalian Cells	93.310	237,091	-
NIH	1-DP2-DK102256-01	A Novel Strategy for Combating Obesity: Reprogramming Neural Circuits	93.847	629,805	-
NIH	1DP2ES027992	Proteome-Driven Holistic Reconstruction of Organ-Wide Multi-Scale Networks	93.310	441,602	-
NIH	1-DP2-GM119162-01	Continuous Directed Evolution of Biomolecules in Human Cells for Medical Research	93.310	798,927	-
NIH	1DP2GM119419	"Bottom-up" Profiling of Interacting Cellular Systems	93.310	154,970	-
NIH	1DP2GM128200-01	Nanometer distance assay to uncover protein dynamics	93.859	159,939	-
NIH	1-F30-HD093358-01 REVISED	Chemically Modified Peptide Agents for Next-Generation Conjugate Therapies to Treat Duchenne Muscular Dystrophy	93.865	38,883	-
NIH	1-F31-CA228241-01 REVISED	Genetic identification of novel mTORC1 regulators and homeostatic signaling mechanisms	93.398	15,948	-
NIH	1F31DK113665-01A1	Leucine Sensing by the mTORC1 Pathway in the Liver - PDF Cangelosi	93.847	15,948	-

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Federal Agency	Government Contract Number	Master Project Name	CFDA #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NIH	1-F31-GM121093-01A1	Elucidating the mechanism of leucine sensing by Sestrin2 upstream of mTORC1	93.859	42,096	-
NIH	1F32AI136459-01	Characterizing spatio-temporal changes in immune cell landscapes of multiple sclerosis patients in response to B cell depletion with Ocrelizumab	93.855	28,787	-
NIH	1-F32-DE027877-01A1	Environmentally-responsive, layer-by-layer coatings for the on-demand delivery of therapeutic growth factors and antibiotics to repair craniomaxillofacial bone defects	93.121	5,216	-
NIH	1-F32-GM123596-02	Solving the E. coli Class Ia Ribonucleotide Reductase a/b Interface Structure by Magnetic Resonance	93.859	55,214	-
NIH	1-F32-GM126645-01	Structurally Deformed Phosphorus Catalysis for Amidation, Hydroamination, and Olefin Metathesis Reaction	93.859	7,077	-
NIH	1-F32-MH115441-01	Development of Line-Scan Temporal Focusing for fast structural imaging of synapse assembly/disassembly in vivo	93.242	29,741	-
NIH	1-G20-OD020259-01	Developing and Improving Institutional Animal Resources (G20)	93.351	497,670	-
NIH	1K08MH116135-01	Determining optimal parameters for dynamic cholinergic modulation of associative learning	93.242	47,952	-
NIH	1-K99-CA207866-02	Investigating the role of the extracellular matrix in metastasis and chemo-resistance	93.398	93,952	-
NIH	1K99CA218679-01A1	Metabolic Constraints on Cancer Cell Proliferation	93.398	34,156	-
NIH	1-K99-DA045103-01	Defining the role of cortical circuit dynamics in learning and addiction	93.279	16,543	-
NIH	1-P01-HD061315-01A1	Maternal and Child Health in Poor Countries: Evidence from Randomized Evaluations	93.865	-15,867	-15,867
NIH	1-P42-ES027707-01	Science and Engineering for Sensors, Mechanisms, and Biomarkers of Exposures	93.143	547,570	-
NIH	1-R01-CA178636-01	Intraoperative real time breast cancer margin assessment with nonlinear microscopy	93.394	-1,519	-
NIH	1-R01-CA206218-01A1	Reprogramming the tumor microenvironment via self-amplified RNA (SafeR) circuits	93.396	364,389	-
NIH	1-R01-CA207029-01A1	RNA circuits for cell state determination in mammalian cells in vitro and in vivo	93.394	133,360	133,360
NIH	1-R01-CA218094-01A1	Deep learning based antibody design using high-throughput affinity testing of synthetic sequences	93.394	2,263	-
NIH	1-R01-CA220468-01	Organic nanoparticles for dual MRI-guided therapeutic selection and ovarian cancer drug delivery	93.394	29,014	7,269
NIH	1-R01-DA038642-01A1	Molecular imaging of dopaminergic signaling in rodent brain	93.279	34,231	-
NIH	1-R01-DA045549-01	High-Performance Imaging Through Scattering Living Tissue	93.279	135,199	-
NIH	1-R01-EB024531-01	Computational Design, Fabrication, and Evaluation of Optimized Patient-Specific Transtibial Prosthetic Sockets	93.286	33,349	-

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Federal Agency	Government Contract Number	Master Project Name	CFDA #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NIH	1-R01-EB024591-01	Synthetic Genetic Controller Circuits to Reprogram Cell Fate	93.286	249,947	-
NIH	1R01EY028219-01A1	Astrocyte-neuron interactions in visual cortex circuits	93.867	62,336	-
NIH	1-R01-GM104948-01	Redesigning General Anesthesia	93.310	107,142	-
NIH	1R01GM125646-01	Investigating RhoA GTPase regulation in sculpting tissues	93.859	46,012	-
NIH	1-R01-HD067312-01	Using Cognitive Neuroscience to Predict Dyslexia among Kindergarden Children	93.865	5	-
NIH	1R01HL121386-01A1 REVISED	Characterizing Mechanisms of Sickle Cell Crisis via Dynamic Optical Assay	93.839	11,811	-
NIH	1-R01-HL121386-01A1 REVISED	Characterizing Mechanisms of Sickle Cell Crisis via Dynamic Optical Assay	93.839	192,676	192,676
NIH	1-R01-HL140471-01	Investigating the role of H2A.Z dynamics in regulating cardiac lineage commitment	93.837	291,594	-
NIH	1-R01-MH111872-01	Multi-Site Non-Invasive Magnetothermal Excitation and Inhibition of Deep Brain Structures	93.242	475,447	428,006
NIH	1-R01-MH112694-01	Simultaneous multiplexed in situ fluorescence imaging of neuronal proteins and messenger RNAs	93.242	81,438	67,763
NIH	1-R01-MH114031-01	RNA Scaffolds for Cell Specific Multiplexed Neural Observation	93.242	143,960	-
NIH	1-R01-MH115037-01	Elucidating neural substrates that mediate autism-like behaviors	93.242	26,055	-
NIH	1-R01-NS089076-01A1	Epigenetic pathology and therapy in Huntington's disease	93.853	411,677	277,966
NIH	1-R01-NS106031-01	A dendritic mechanism for cholinergic neuromodulation of cortical function	93.853	41,681	-
NIH	1-R13-EB025722-01	Symposium: Materials Design for Neural Interfaces	93.286	7,809	-
NIH	1-R13-GM125315-01	U.S.-Canada Winter School on Biomolecular Solid State NMR	93.859	10,000	-
NIH	1-R21-AI126465-01	Siderophore-based antibiotics: consequences for the microbiota and bacterial pathogens	93.855	41,385	41,385
NIH	1-R21-EB018924-01A1	Liquid-helium-free persistent-mode HTS magnets for NMR and MRI applications	93.286	3,144	-
NIH	1-R21-EB022729-01A1	Multifunctional fibers for high-throughput microfluidics	93.286	105,338	-
NIH	1-R21-EY025863-02	Post-natal development of high-level visual representation in primates	93.867	310,051	-
NIH	1-R24-MH106075-01	Vascular Interfaces for Brain Imaging and Stimulation	93.242	834	-
NIH	1-R24-MH109081-01	Toward functional molecular neuroimaging using vasoactive probes in human subjects.	93.242	210,880	-
NIH	1R33CA223904-01	Advanced development and validation of microdevices for high-throughput in situ drug sensitivity testing in tumors	93.394	17,397	-
NIH	1-R34-HL125859-02 REVISED	Entrainment-based mechanical ventilation to improve patient-ventilator synchrony	93.837	9,007	-
NIH	1R35ES028374-02	Protein Kinase Signaling in the Genotoxic Stress Response	93.113	204,964	-

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Federal Agency	Government Contract Number	Master Project Name	CFDA #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NIH	1-R35-GM126982-01	Metalloenzyme structure, function and assembly	93.859	20,851	-
NIH	1-R56-HL127258-01	Central mechanisms of respiratory adaptation to mechanical ventilation	93.837	66,914	-
NIH	1-RF1-AG047661-01	Examination of neural circuits underlying mood disorders in Alzheimer's disease	93.866	469,907	-
NIH	1-RF1-AG048029-01	Alzheimer's Disease Risk Genes in Human Microglia and Neurons Derived from iPSCs	93.866	821,486	116,273
NIH	1-RF1-AG054012-01	Cell type specific epigenetic analysis to understand complex mechanisms underlying Alzheimer's disease phenotypes	93.866	871,050	-
NIH	1-RF1-AG054321-01	Demystifying Microglia in Aging and Alzheimer's Disease	93.866	961,327	286,140
NIH	1-RF1-AG058504-01 REVISED	Solid State NMR Studies of Amyloid Proteins	93.866	603,885	-
NIH	1-U01CA202177-01	Quantitative analyses of tumor cell extravasation	93.396	-1,156	-
NIH	1-U01CA202177-02	Quantitative analyses of tumor cell extravasation	93.396	66,463	33,347
NIH	1U01CA214381-01A1	Development of Physiologic Tissue Models to Assess Tumor Explant Response to Immune Checkpoint Blockade	93.396	172,054	17,775
NIH	1U01CA215798-01	Systems approaches to understanding the relationships between genotype, signaling, and therapeutic efficacy	93.396	621,923	542,051
NIH	1-U01-MH106018-01	Novel technologies for nontoxic transsynaptic tracing	93.242	-59,862	-
NIH	1-U01-MH-109129-01	Anterograde monosynaptic tracing - Restricted Parent	93.242	-71	-71
NIH	1-U01-MH114819-01	A Molecular and Cellular Atlas of the Marmoset Brain	93.242	864,600	415,166
NIH	1-U01-NS090473-01	Cortical circuits and information flow during memory-guided perceptual decisions	93.853	169,122	-
NIH	1-U01-NS103470-01	Genetically-targeted hemodynamic functional imaging	93.853	632,592	-
NIH	1-U19-AI131135-01	3D Models of Engineered Human iPS Cells to Investigate Neurotropic Virus Infections	93.855	1,139,995	704,834
NIH	1U24TR001951-01	Translational Center of Tissue Chip Technologies for quantitative characterization of Microphysiological Systems	93.350	412,849	17,740
NIH	1-U54-CA210180	MIT/Mayo Physical Sciences Center for Drug Delivery and Efficacy in Brain Tumors	93.397	5,460	5,460
NIH	1-U54-CA210180-01	MIT/Mayo Physical Sciences Center for Drug Delivery and Efficacy in Brain Tumors	93.397	930,792	742,457
NIH	1-U54-CA217377-01	Quantitative and functional characterization of therapeutic resistance in cancer (PARENT)	93.397	1,747,950	541,307
NIH	1-UG3-TR002186-01	Cartilage-Bone-Synovium MPS: Musculoskeletal Disease Biology in Space	93.350	220,648	43,103
NIH	2-P01-CA026731-35A1	Endogenous Nitrite Carcinogenesis In Man	93.393	498,010	-
NIH	2-P30-CA014051	Cancer Center Support (Core) Grant – (Parent)	93.397	516,393	-
NIH	2-P30-CA014051-47	Cancer Center Support (Core) Grant – (Parent)	93.397	90,484	-

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NIH	2-P41-EB015871-31	MIT Laser Biomedical Research Center	93.286	632,919	91,993
NIH	2-R01-AI016892-39	AAA+ proteolytic machines	93.855	112,232	-
NIH	2-R01-EB002804-27	High Field DNP and EPR in Biological Systems	93.286	9,095	-
NIH	2-R01-EB003151-35A1	Solid State NMR Studies of Peptides and Proteins	93.286	0	-
NIH	2-R01-EB006365-06A2	Microchip Drug Delivery System	93.286	-925	-925
NIH	2-R01-EY011289-29A1	Novel Diagnostics With Optical Coherence Tomography	93.867	150,538	150,538
NIH	2-R01-EY014970-11A1	The role of inferior temporal cortex in core visual object recognition	93.867	88,811	-
NIH	2-R01-GM034277-33	Regulation of mRNA Processing	93.859	6,597	-
NIH	2-R01-GM059426-17	Catalytic Stereoselective Olefin Metathesis Reactions	93.859	246,978	246,978
NIH	2R01GM066976-14A1	Structures and lipid interactions of curvature-inducing membrane peptides by NMR	93.859	122,508	-
NIH	2-R01-GM074825-10A1	Synthesis and Study of Complex Natural Products	93.859	14,587	9,351
NIH	2-R01-GM082209-05A1	Computational Design of Inhibitor Specificity	93.859	205,724	205,724
NIH	2-R56-AG015339-16A1	Function of Mammalian SIRT1 in Aging	93.866	49,927	-
NIH	2-T32-GM008334-29	Interdepartmental Biotechnology Training Program	93.859	732,198	-
NIH	2-T32-GM087237-09	Graduate Training in Computational and Systems Biology	93.859	271,559	-
NIH	3 T32 GM007484-40S1	Integrative Neuronal Systems-Year 40	93.859	267,573	-
NIH	3-F32-EB019262-02S1	Aligned Carbon Nanotube_Based Chemical Sensors with Highly Improved Sensitivity	93.286	-2	-
NIH	3-F32-GM110897-02S1	Hybrid organometallic_carbon nanotube films for enhanced chemiresistive sensors	93.859	32,788	-
NIH	3-F32-GM112197-03S1 - REVISED	Direct Synthesis of 1_2_Benzisoxazoles Via Palladium Catalysis	93.859	1,447	-
NIH	3-F32-GM113311-02S1	Asymmetric Construction of Benzylic Stereocenters via Reductive Copper Catalysis	93.859	-1,397	-
NIH	3-F32-GM120852-01S1 REVISED	The Continuous-Flow Synthesis of Ni-Precatalysts for High-Throughput Experimentation	93.859	5,749	-
NIH	3-R01-DC016607-01A1S1	The neural architecture of pragmatic processing	93.173	119	-
NIH	3-R01-EY023037-05S1	Behavioral Consequences and cellular substrates of plasticity in visual cortex	93.867	79,228	-
NIH	3-R01-GM088204-06S1	Solid-state NMR of the influenza M2 protein in lipid bilayers	93.859	119,800	-
NIH	3-R01-GM097241-05S1	Inhibition of Prokaryote-Specific Saccharide Biosynthesis in Microbial Pathogens	93.859	54,637	-
NIH	3-R01-GM097241-06	Inhibition of Prokaryote-Specific Saccharide Biosynthesis in Microbial Pathogens	93.859	226,134	-
NIH	3-R01-GM110535-04S1	Cysteine Arylation	93.859	165,000	-

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NIH	3-R33-AI100190-04S1	MMDx: A rapid multiplexed matrix code diagnostic for real time epidemiology	93.855	93,765	-
NIH	3-U01CA202177-03S1	Quantitative analyses of tumor cell extravasation	93.396	158,239	-
NIH	3-U01-HG007037-03S1	Integrated Genome Discovery at Single Base Pair Resolution	93.172	-928	-
NIH	4-K00-CA212227-03	Imaging Cancer Angiogenesis with Acoustic Angiography Ultrasound	93.398	29,944	-
NIH	4-P01-CA042063-30	Characterization of Pathways Controlling Cancer at the Level of Gene Regulation	93.393	102,279	-
NIH	4-P30-EY002621-39	Core - Vision Processes	93.867	-69,058	6,204
NIH	4-P41-EB015871-30	MIT Laser Biomedical Research Center (P41-RR02594)	93.286	26,483	-
NIH	4-P50-GM098792-04	MIT Center for Integrative Synthetic Biology	93.859	37,476	-
NIH	4-R00-AG050749-03	Quantitation and biochemical characterization of autophagy's role in aging	93.866	221,357	-
NIH	4-R01-AG011119-24	Function of SIRT1 in Growth and Reproduction	93.866	100,980	-
NIH	4-R01-AR060331-05	Cartilage Repair Using Self Assembling Peptide Scaffolds	93.846	430,376	420,353
NIH	4-R01-CA096504-14	Engineered Antibody EGFR Antagonist Cancer Therapeutics	93.395	172,759	115,018
NIH	4-R01-CA172164-04	Targeting immunosuppression blockade to T cells for cancer immunotherapy	93.395	324,759	-
NIH	4-R01-CA174795-04	Localizing Immunotherapy to Improve Therapeutic Index	93.395	266,548	-
NIH	4-R01-CA178636-04	Intraoperative real time breast cancer margin assessment with nonlinear microscopy	93.394	21,868	28,886
NIH	4-R01-DC000117-37	Hearing Aid Research	93.173	60,190	-
NIH	4-R01-EB001965-13	High Magnetic Field, Time Domain Magnetic Resonance Spectrometers	93.286	156,347	-
NIH	4-R01-EB017755-04	Mechanistic analysis of transport through the mucus barrier	93.286	24,014	-
NIH	4R01EB017755-04 REVISED	Mechanistic analysis of transport through the mucus barrier	93.286	162,343	-
NIH	4-R01-ES015818-09	Mechanism of Eukaryotic Environmental Mutagenesis	93.113	118,639	-
NIH	4-R01-EY017921-09	Neural mechanisms mediating visual search	93.867	-5,848	-
NIH	4-R01-EY020517-06	Project Prakash: Development of Object Perception After Late Sight Onset	93.867	322,665	-
NIH	4-R01-EY023037-04	Behavioral consequences and cellular substrates of plasticity in visual cortex	93.867	36,092	-
NIH	4-R01-EY023173-05	High-throughput robotic analysis of integrated neuronal phenotypes	93.867	603,713	348,927
NIH	4-R01-GM024663-39	Genetic Analysis of Nematode Egg Laying and Co-regulated Behavioral Systems	93.859	32,520	-

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NIH	4-R01-GM081393-08	MEIII2_Y_Me_Fe_Mn_Cluster Assembly and Maintenance in Ribonucleotide Reductase	93.859	167,796	-
NIH	4-R01-GM084477-09	Molecular Genetics of Innate Immunity in C. elegans	93.859	-20,422	-
NIH	4-R01-GM094303-05	Functional Consequences of Ribosome Heterogeneity	93.859	16,044	-
NIH	4-R01-GM101420-04 REVISED	High throughput microfluidic intracellular delivery platform	93.859	11,331	-
NIH	4-R01-GM102311-04	Cooperation and Cheating in the Evolution of Antibiotic Resistance in Bacteria	93.859	-1,117	-
NIH	4-R01-GM104948-05	Redesigning General Anesthesia	93.310	209,470	71,891
NIH	4-R01-MH060379-15	Ensemble activity in rat corticostriatal circuits during habit learning	93.242	-2,217	-
NIH	4-R01-MH065252-15	Neural Basis of Categories	93.242	180,052	-
NIH	4-R01-MH096914-05	Impairments of Theory of Mind disrupt patterns of brain activity	93.242	105,618	-
NIH	4-R01-MH097104-05	Shank3 in Synaptic Function and Autism	93.242	-3,331	-
NIH	4-R01-MH103160-04	Hypermagnetic engineered proteins for functional neuroimaging	93.242	-2,784	-
NIH	4-T32-GM007287-42	Pre-Doctoral Training in Biological Sciences	93.859	-27,798	-
NIH	4-T32-GM007484-40	Integrative Neuronal Systems-Year 40	93.859	7,850	-
NIH	4-T32-OD010978-29	Biomedical Research Training for Veterinary Scientists	93.351	-308	-
NIH	4-U01-CA164337-05	GI Tract Dysbiosis and Breast Cancer	93.396	323,620	114,480
NIH	5 K99 GM118907-02	Effects of Host Metabolic Variation on Antibiotic Susceptibility	93.859	80,770	-
NIH	5 P01 HD061315-05	Maternal and Child Health in Poor Countries: Evidence from Randomized Evaluations	93.865	118,172	222,902
NIH	5 P42 ES027707-02	Science and Engineering for Sensors, Mechanisms, and Biomarkers of Exposures	93.143	215,592	-
NIH	5_R01-DE013023-15R	Novel Polymers for Tissue Engineering	93.121	-1,048	-
NIH	5-DP1-HD091947-03	How Does the Functional Organization of the Human Brain Arise in Development?	93.865	977,601	239,494
NIH	5-DP1-NS087724-02	Millisecond-Timescale Whole-Brain Neural Activity Mapping in Health and Disease	93.310	-3,508	-
NIH	5-DP1-NS087724-03	Millisecond-Timescale Whole-Brain Neural Activity Mapping in Health and Disease	93.310	-52,886	-
NIH	5-DP1-NS087724-05	Millisecond-Timescale Whole-Brain Neural Activity Mapping in Health and Disease	93.310	510,256	-
NIH	5-DP5-OD019815-04	Adapter-Layer RTK Signaling: Basic Understanding & Targeted Drug Resistance	93.310	86,893	-
NIH	5-F31-AR067615-03 REVISED	A Novel Approach to Osteogenesis Imperfecta_ The Collagen Protein Folding Problem	93.846	22,967	-

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Federal Agency	Government Contract Number	Master Project Name	CFDA #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NIH	5-F31-CA189437-03	Improving targeted therapies through functional genomic approaches	93.398	11,556	-
NIH	5-F32-AG052284-03	The Role of Aging in the Progression of Tendon Degeneration Due to Compressive Mechanical Overload: A Multiscale Approach	93.866	59,577	-
NIH	5-F32-CA200351-03	Polymeric Nanoparticles for siRNA Delivery to Bone Marrow Endothelium to Disrupt Tumor Cell Adhesion and Bone Metastasis Formation In Vivo - PDF: M. Mitchell	93.398	57,705	-
NIH	5-F32-CA210421-02	Understanding cell intrinsic and context dependent metabolic adaptations of cancer cell - PDF: L. Danai	93.398	22,647	-
NIH	5-F32-CA213810-02 REVISED	Understanding metabolic pathways that support redox homeostasis in cancer	93.398	56,172	-
NIH	5-F32-CA213821-02 REVISED	Systematic analysis of RNA binding proteins in modulating drug response- PDF D. Dominguez	93.398	56,713	-
NIH	5-F32-DC015163-03	Mechanisms of adaptation in (healthy and aphasic) noisy-channel comprehension	93.173	52,683	-
NIH	5-F32-DK111116-02	Dynamic Gene Circuit Mapping of Unfolded Protein Response in Type 2 Diabetes	93.847	54,105	-
NIH	5-F32-EB022416-02 REVISED	Fluorescence-based molecular imaging of in vivo release kinetics (PDF: K. McHugh)	93.286	58,667	-
NIH	5-F32-EB023101-02 REVISED	Sequence- and Stereocontrolled Triazolium-containing Precise Polymers for siRNA Complexation and Delivery	93.286	60,234	-
NIH	5-F32-EY024857-03	Dopaminergic modulation of visual cortical circuits	93.867	7,602	-
NIH	5-F32-EY028028-02 REVISED	Contributions of glial neurotransmitter transport in balancing excitation and inhibition in visual cortex	93.867	55,048	-
NIH	5-F32-GM109516-03	Multicolor Fluorescent Sensors for Imaging Zinc Dynamics in Cells	93.859	3,456	-
NIH	5-F32-GM114959-02	Identification of “exosite” contacts in TRAF6, a critical mediator of cancer (PDF: D.Whitney)	93.859	56,716	-
NIH	5-F32-GM116241-02	Quality Control of Membrane Proteins	93.859	8,431	-
NIH	5-F32-GM117673-02	Pyridine Synthesis via Directed Aziridination of Phenols in Continuous Flow	93.859	28,017	-
NIH	5-F32-GM117710-02 REVISED	The Continuous Flow Total Synthesis of a Series of Analogs of the Cephalotaxus Esters for the Development of Novel Antileukemia Therapies	93.859	49,261	-
NIH	5-F32-GM120847-02 REVISED	Dual Catalytic Asymmetric Photoredox Coupling of alpha-- Keto Radicals	93.859	49,734	-
NIH	5-F32-GM120963-03	Investigating Patterns of Cell Interactions During Epithelial Folding – PDF Yevick	93.859	57,450	-
NIH	5-F32-GM122356-02	Magnetic complex colloidal sensors for continuous in vitro measurement of nitric oxide	93.859	44,873	-
NIH	5-F32-GM123710-02	Chiral polymer nanoparticles for probing biological systems	93.859	47,642	-

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Federal Agency	Government Contract Number	Master Project Name	CFDA #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NIH	5-F32-GM125163-02	Copper-Catalyzed Enantioselective Addition of Styrene-Derived Nucleophiles to Thiocarbenium Ions by Ligand-Controlled Chemoselective Hydrocupration	93.859	48,511	-
NIH	5F32GM125165-02	Identification and Characterization of Ligand Binding Profiles for Human Intelect	93.859	50,519	-
NIH	5-F32-GM126765-02	Investigating the VapBC family of toxin-antitoxin systems in Mycobacterium tuberculosis – PDF Nocedal	93.859	44,810	-
NIH	5-F32-HD090833-02	Identification and Functional Dissection of Long Non-Coding RNAs in Genomic Imprinting	93.865	66,974	-
NIH	5-F32-HL122009-03 REVISED	Local delivery of TGF-beta inhibitors to treat mitral valve disease	93.837	-2,008	-
NIH	5-F32-HL134244-02	The Coagulopathy-Inflammation Interface: Integration of Coagulopathy and Complement Activation as a Mechanism for Neutrophil Priming and Tissue Damage	93.859	64,665	-
NIH	5-F32-MH107086-03	Revealing the causal role of hippocampal dopamine signaling in spatial learning	93.242	37,790	-
NIH	5-F32-MH111216-02	Elucidating the role of basolateral amygdala projections to the lateral hypothalamus in associative learning PDF: Siciliano	93.242	59,849	-
NIH	5-F32-MH114525-02	Adolescent Brain Bases of Intergenerational Risk for Depression	93.242	50,321	-
NIH	5-F32-MH115446-02	Investigating the Role of Neurotensin on Valence Assignment During Associative Learning in the Basolateral Amygdala	93.242	41,281	-
NIH	5-F32-NS093897-03 REVISED	Therapeutic devices for probing electrical and chemical activity in deep brain disorders_PDF: H. Schwerdt	93.853	55,893	-
NIH	5-F32-NS100356-03 REVISED	Revealing the Functional Role of Theta and Gamma Rhythms in Encoding and Retrieval of Spatial Memory	93.853	54,297	-
NIH	5-F32-NS100424-02 REVISED	Noradrenergic modulation of the hippocampal network	93.853	45,532	-
NIH	5-K99-AG055697-03	Deciphering cell-type specific mechanisms of APOE4 in Alzheimer's disease	93.866	88,664	-
NIH	5-K99-CA187317-02 REVISED	Investigating Wnt and Lgr5 signaling as regulators of lung cancer heterogeneity	93.398	2,303	-
NIH	5-K99-MH112855-02	Prefrontal circuits for attention and motor planning	93.242	105,922	-
NIH	5-P01-CA026731-39	Endogenous Nitrite Carcinogenesis In Man	93.393	124,724	-
NIH	5-P01-CA042063-32	Characterization of Pathways Controlling Cancer at the Level of Gene Regulation	93.393	1,132,423	-
NIH	5-P30-CA014051-45	Cancer Center Support (Core) Grant – (Parent)	93.397	41,399	-
NIH	5-P30-CA014051-46	Cancer Center Support (Core) Grant – (Parent)	93.397	4,052,777	363,491
NIH	5P30ES002109-37	MIT Center for Environmental Health Sciences (YR 36-40)	93.113	694,051	-
NIH	5P30ES002109-38	MIT Center for Environmental Health Sciences (YR 36-40)	93.113	222,814	-
NIH	5-P30EY002621-40	Core - Vision Processes	93.867	357,969	29,451

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Federal Agency	Government Contract Number	Master Project Name	CFDA #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NIH	5-P41-EB002026-42	MIT/Harvard Center for Magnetic Resonance	93.286	26,192	-
NIH	5P41EB002026-43	MIT/Harvard Center for Magnetic Resonance	93.286	930,753	-
NIH	5-P41-EB015871-29	MIT Laser Biomedical Research Center (P41-RR02594)	93.286	1,510	-
NIH	5-P41-EB015871-32	MIT Laser Biomedical Research Center	93.286	276,756	-
NIH	5-P50-GM098792-03	MIT Center for Integrative Synthetic Biology	93.859	7	-
NIH	5-P50-GM098792-05	MIT Center for Integrative Synthetic Biology	93.859	1,639,490	-
NIH	5-R00-AG045144-05	Regulation of the Intestinal Stem Cell Niche in Aging	93.866	80,053	-
NIH	5-R00-CA204595-04	Tumor-intrinsic oncogenic alterations and evasion of anti-tumor immunity	93.396	275,573	-
NIH	5-R00-DK102669-04 REVISED	Sculpting the Enteric Microbiota with CRISPR-Cas Systems	93.847	185,298	-
NIH	5-R00-GM105913-05	Probing the function of translational pausing in bacterial protein synthesis	93.859	46,148	-
NIH	5-R00-GM115765-04	Elucidating how intracellular bacterial pathogens hijack host intercellular communication to promote spread	93.859	179,081	-
NIH	5-R01 EB 016101-5	A New Device for Electrical & Chemical Modulation of Pathological Neural Activity	93.286	682,662	-
NIH	5-R01-AG049897-04	A Randomized Controlled Trial of Health Care Hotspotting	93.866	976,055	-
NIH	5-R01-AI016892-38	Proteolytic and chaperone machines implicated in virulence and disease	93.855	343,005	-
NIH	5-R01-AI055258-14	Synthetic Ligands for Modulating Immune Cell Responses	93.855	607,503	-
NIH	5-R01-AI111395-05	Characterization and Development of a Cross Spectrum Anti-Dengue Antibody	93.855	802,698	-
NIH	5-R01-AI111860-05	T-cell-mediated targeting of therapeutics to HIV reservoirs	93.855	250,521	-
NIH	5-R01-AI126592-03	The Chemistry and Biology of Galactofuranose-Containing Glycans	93.855	459,406	-
NIH	5-R01-AR060331-04	Cartilage Repair Using Self Assembling Peptide Scaffolds	93.846	28	-
NIH	5-R01-AR065484-05	Structure-Function of the Nuclear Envelope Bridge and its Role in Laminopathies	93.846	356,545	-
NIH	5-R01-AR071443-02	Defining and Modulating Mechanisms of Collagen Proteostasis	93.846	689,119	-
NIH	5-R01-AT008764-05	Antimicrobial discovery from metabolomics of nematode pathogen interactions	93.213	736,116	327,311
NIH	5-R01-CA021615-41	Mutagenesis and Repair of DNA	93.393	299,220	-
NIH	5-R01-CA034992-36 REVISED	Understanding and Improving Platinum Anticancer Drugs	93.395	716,756	-
NIH	5R01CA073808-22 REVISED	Ribonucleases in Cancer Chemotherapy	93.395	440,872	-
NIH	5-R01-CA075289-19	Optical Biopsy Using Coherence Tomography	93.394	137,366	137,366
NIH	5-R01-CA075289-21	Optical Biopsy Using Coherence Tomography	93.394	309,980	-

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Federal Agency	Government Contract Number	Master Project Name	CFDA #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NIH	5-R01-CA080024-21	Intra and Extra-Chromosomal Probes for Mutagenesis by Carcinogens	93.393	434,400	-
NIH	5-R01-CA096504-15 REVISED	Engineered Antibody EGFR Antagonist Cancer Therapeutics	93.395	333,158	-1,166
NIH	5-R01-CA133404-10	Stress and Proliferation States Impact MicroRNA-Mediated Regulation in Cancer	93.393	305,439	-
NIH	5-R01-CA160860-04	Developing Direct Small-Molecule Probes of Myc-Dependent Transcription	93.393	2,474	-
NIH	5-R01-CA168653-05	Regulation of glucose metabolism to allow tumor initiation and growth	93.396	52,264	-
NIH	5-R01-CA173712-05	Genetic circuits for high-throughput, multi-sensory, live cell microRNA profiling	93.396	-1,093	-
NIH	5-R01-CA174795-05	Localizing Immunotherapy to Improve Therapeutic Index	93.395	161,332	-
NIH	5-R01-CA178636-05	Intraoperative real time breast cancer margin assessment with nonlinear microscopy	93.394	312,849	-
NIH	5-R01-CA178636-06	Intraoperative real time breast cancer margin assessment with nonlinear microscopy	93.394	1,042	-
NIH	5-R01-CA184956-02	(PQB6)Elucidating metastasis by real-time monitoring and tagging of CTCs in GEMMs	93.396	288,842	-
NIH	5-R01-CA184956-03	(PQB6)Elucidating metastasis by real-time monitoring and tagging of CTCs in GEMMs	93.396	0	-
NIH	5-R01-CA184956-04	(PQB6)Elucidating metastasis by real-time monitoring and tagging of CTCs in GEMMs	93.396	235,588	-
NIH	5-R01-CA185020-04 REVISED	(PQB3) Investigating innate immunosurveillance of oncogene-induced danger signals	93.396	199,588	-
NIH	5-R01-CA206157-23 REVISED	Regulation of MITOSIS by Proteolysis in Yeast	93.393	310,587	-
NIH	5-R01-CA206218-04	Reprogramming the tumor microenvironment via self-amplified RNA (SafeR) circuits	93.396	286,999	-
NIH	5-R01-CA207029-03	RNA circuits for cell state determination in mammalian cells in vitro and in vivo	93.394	519,708	-
NIH	5-R01-CA211184-02 REVISED	Dietary control of stem cells in physiology and cancer	93.396	465,092	-
NIH	5-R01-CA220468-02	Organic nanoparticles for dual MRI-guided therapeutic selection and ovarian cancer drug delivery	93.394	368,090	-
NIH	5-R01-DA029639-08	Novel Platforms for Systematic Optical Control of Complex Neural Circuits In Vivo	93.279	200,980	-
NIH	5-R01-DA038642-04	Molecular imaging of dopaminergic signaling in rodent brain	93.279	580,158	-
NIH	5-R01-DA045549-02	High-Performance Imaging Through Scattering Living Tissue	93.279	210,045	-
NIH	5-R01-DC000238-34	Experimental - Theoretical Studies of Cochlear Mechanisms	93.173	320,327	-
NIH	5-R01-DC009183-08	Neuronal Mechanisms of Motor Exploration and the Emergence of Structured Behavior	93.173	48,693	-

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Federal Agency	Government Contract Number	Master Project Name	CFDA #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NIH	5-R01-DC009183-10	Neuronal Mechanisms of Motor Exploration and the Emergence of Structured Behavior	93.173	208,831	-
NIH	5-R01-DC011339-05	Brain Bases of Language Deficits in SLI and ASD	93.173	-746	-
NIH	5-R01-DC014739-03	Auditory Scene Analysis with Complex Sounds	93.173	481,122	-
NIH	5-R01-DE013023-19	Novel Polymers for Tissue Engineering	93.121	569,668	-
NIH	5-R01-DE024747-02	Tunable Nanolayer-Polymer Composite Patches for Cell-Free CMF Repair	93.121	20,165	14,987
NIH	5-R01-DE024747-03	Tunable Nanolayer-Polymer Composite Patches for Cell-Free CMF Repair	93.121	385,762	-
NIH	5-R01-DK087984-07	HRI-eIF2a Phosphorylation Signaling in Oxidative Stress and Erythropoiesis	93.847	234,422	-
NIH	5-R01-DK115558-02	Macromolecular interactions controlling the ALA synthases, keystone enzymes that initiate heme biosynthesis	93.847	195,629	-
NIH	5-R01-EB001960-40	Solid State NMR Studies of Membrane Proteins	93.286	269,756	-
NIH	5-R01-EB002804-30S1	High Field DNP and EPR in Biological Systems	93.286	594,182	-
NIH	5-R01-EB004866-12	Novel Traveling Wave Tubes for CW and Pulsed DNP NMR	93.286	732,065	-
NIH	5-R01-EB006365-10	Microchip Drug Delivery System	93.286	925	-
NIH	5-R01-EB010246-05	Perfused 3D Tissue Surrogates for Complex Cell-Cell Communication Systems	93.310	0	-1,033
NIH	5-R01-EB016101-5	A New Device for Electrical & Chemical Modulation of Pathological Neural Activity	93.286	49,987	-
NIH	5-R01-EB017205-04	Critical Care Informatics	93.286	655,338	-
NIH	5-R01-EB020740-04	Nipype: Dataflows for Reproducible Biomedical Research	93.286	519,187	117,307
NIH	5-R01-EB022062-02	Tabletop liquid-helium-free, persistent-mode 1.5-T/70-mm osteoporosis MRI magnet	93.286	3,199	-
NIH	5-R01-EB022062-02 REVISED	Tabletop liquid-helium-free, persistent-mode 1.5-T/70-mm osteoporosis MRI magnet	93.286	458,154	23,484
NIH	5-R01-EB022433-03	Lymph node-targeted molecular vaccines	93.286	332,676	-
NIH	5-R01-EB024261-02	Expansion Microscopy	93.286	697,802	-
NIH	5-R01-EB024531-02	Computational Design, Fabrication, and Evaluation of Optimized Patient-Specific Transtibial Prosthetic Sockets	93.286	511,395	-
NIH	5-R01-EB024591-02	Synthetic Genetic Controller Circuits to Reprogram Cell Fate	93.286	155,798	35,404
NIH	5-R01-ES015339-10	Protein Kinase Signaling and Cell Cycle Control	93.113	400,204	-
NIH	5-R01-ES016313-08 REVISED	The Environment as a Variable to Calibrate Mouse Models of Human Disease	93.113	44,990	-
NIH	5-R01-ES022872-25	Eukaryotic DNA Alkylation Repair	93.113	181,106	-
NIH	5-R01-EY007023-28	Cell-specific circuits and contextual modulation in visual cortex	93.867	868,116	-

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Federal Agency	Government Contract Number	Master Project Name	CFDA #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NIH	5-R01-EY011289-30	Novel Diagnostics With Optical Coherence Tomography	93.867	43,113	26,124
NIH	5-R01-EY011289-32	Novel Diagnostics With Optical Coherence Tomography	93.867	238,508	-
NIH	5-R01-EY011894-18 REVISED	A Molecular Genetic Analysis of Cortical Plasticity	93.867	291,429	-
NIH	5-R01-EY014074-21	Developmental Regulation of Glutamate Receptor Function	93.867	442,589	-
NIH	5-R01-EY017292-10	Neural Mechanisms of Selective Attention	93.867	-170	-
NIH	5-R01-EY023037-06	Behavioral Consequences and cellular substrates of plasticity in visual cortex	93.867	463,016	-
NIH	5-R01-EY023322-06	Neural mechanisms of color	93.867	374,982	-
NIH	5-R01-EY025437-03	in vivo imaging of inhibitory circuit remodeling in mouse visual cortex	93.867	53,039	-
NIH	5-R01-EY025437-04	in vivo imaging of inhibitory circuit remodeling in mouse visual cortex	93.867	356,094	-
NIH	5-R01-GM024663-41	Genetic Analysis of Nematode Egg Laying and Co-regulated Behavioral Systems	93.859	388,425	-
NIH	5-R01-GM029595-38 REVISED	Ribonucleotide Reductase: Structure and Function	93.859	91,663	-
NIH	5-R01-GM031030-36	Molecular Genetics of Rhizobium Nodulation Plasmids	93.859	381,997	-
NIH	5-R01-GM034277-32	Regulation of mRNA Processing	93.859	434,175	-
NIH	5-R01-GM039334-30 REVISED	Deciphering Membrane-Associated Glycan Assembly and Transfer	93.859	333,768	-
NIH	5-R01-GM046059-25	Catalytic Methods for Organic Synthesis	93.859	330,496	-
NIH	5-R01-GM049039-23	Endovascular Devices and Vascular Repair	93.859	648,682	-
NIH	5-R01-GM050895-20	Cell-Cell Signaling, Gene Expression, and Horizontal Gene Transfer in Bacillus	93.859	229,432	-
NIH	5-R01-GM052339-24	Initiation of DNA Replication of Yeast Chromosomes	93.859	358,896	-
NIH	5-R01-GM058160-19	Late Transition Metal Catalysts for Organic Synthesis	93.859	173,403	-
NIH	5-R01-GM059426-19 REVISED	Catalytic Stereoselective Olefin Metathesis Reactions	93.859	327,132	-
NIH	5-R01-GM062207-15 REVISED	Regulation of the meiotic cell cycle	93.859	173,440	-
NIH	5-R01-GM065519-16 REVISED	Imaging Mobile Zinc Biology	93.859	189,467	-
NIH	5-R01-GM066976-13 REVISED	Structures and lipid interactions of curvature-inducing membrane peptides by NMR	93.859	128,976	-
NIH	5-R01-GM069857-12	Complex Metallocluster Structure and Assembly	93.859	245,775	-
NIH	5-R01-GM072566-12 REVISED	Synthetic Strategies based on expoxide coupling reactions	93.859	170,393	-
NIH	5-R01-GM074825-12 REVISED	Synthesis and Study of Complex Natural Products	93.859	376,420	-
NIH	5-R01-GM077537-12	High Resolution Assembly Structure of the Nuclear Pore Complex	93.859	450,090	-
NIH	5-R01-GM081871-08	Structure based prediction of the interactome	93.859	-12,184	-
NIH	5-R01-GM081871-10	Structure based Prediction of the interactome	93.859	470,903	-

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Federal Agency	Government Contract Number	Master Project Name	CFDA #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NIH	5-R01-GM082209-08	Computational Design of Inhibitor Specificity	93.859	77,301	-
NIH	5-R01-GM082899-11 REVISED	Cell cycle regulation and chromosome organization in Caulobacter crescentus	93.859	394,079	-
NIH	5-R01-GM084477-11	Microbial Modulation of Neuroendocrine Physiology and Aging of C. elegans	93.859	428,614	-
NIH	5-R01-GM085319-10	Function of Sequence-specific RNA Binding Proteins	93.859	274,479	-
NIH	5-R01-GM086214-04	Single-molecule imaging with super-resolution	93.859	-1,390	-1,638
NIH	5-R01-GM088204-08 REVISED	Solid-state NMR of the influenza M2 protein in lipid bilayers	93.859	315,139	-
NIH	5-R01-GM089732-08 REVISED	Synthesis and Study of Dimeric Diketopiperazine Alkaloids Years 5 to 8	93.859	271,472	-
NIH	5-R01-GM095843-08 REVISED	Molecules for Dynamic Nuclear Polarization and NMR Structure Determination	93.859	293,778	-
NIH	5-R01-GM101316-03 REVISED	Regulation and Function of snoRNA Genes	93.859	4,947	-
NIH	5-R01-GM101420-03	High throughput microfluidic intracellular delivery platform	93.859	7,525	4,587
NIH	5-R01-GM101988-40	Sequence Determinants of Protein Structure and Stability	93.859	333,312	-
NIH	5-R01-GM102311-06	Environmental modulation of microbial conflict and cooperation	93.859	509,786	-
NIH	5-R01-GM105984-05	Investigating the generation of mechanical forces during tissue invagination	93.859	300,497	-
NIH	5-R01-GM108348-06	Compressive Genomics for Large Omics Data Sets: Algorithms, Applications and Tools	93.859	357,667	55,447
NIH	5-R01-GM110048-04	Computationally guided design of helical peptide interaction reagents	93.859	278,414	-
NIH	5-R01-GM110535-04	Cysteine Arylation	93.859	262,862	-
NIH	5-R01-GM113708-03 REVISED	Comparative analysis and regulatory architecture of epigenomics datasets	93.859	174,482	-
NIH	5-R01-GM114190-04	Polymer models of mitotic and interphase chromosomes	93.859	334,842	-
NIH	5R01GM114547-05 REVISED	Synthetic Methods based on Biphilic Phosphorus Catalysts	93.859	318,041	-
NIH	5-R01-GM114834-13	Modified Phase 3B of a 3-phase 1.3-GHz LTS/HTS NMR magnet	93.859	863,555	-
NIH	5-R01-GM118695-02	Bioinorganic Explorations of Host-Defense Proteins	93.859	197,091	-
NIH	5-R01-GM126376-02	Metallobiochemistry of innate immunity and bacterial physiology	93.859	99,343	16,982
NIH	5-R01-HD085866-04	Mitotic exit control	93.865	401,053	-
NIH	5-R01-HD086899-02	NRI: An autonomous curious social robot with a mindset for long-term interaction with children	93.865	90,711	33,629
NIH	5-R01-HG002439-16	Regulation and Function of Alternative mRNA Isoform Expression in Mammals	93.172	362,693	-
NIH	5-R01-HG008363-03	High-throughput methods for elucidating the control of chromatin accessibility	93.172	428,912	186,773

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NIH	5-R01-HG008754-03	High-Throughput Native Context Mapping and Modeling of Regulatory DNA	93.172	608,612	305,487
NIH	5-R01-HL107503-05 REVISED	Scalable Units for Building Vascularized Cardiac Graft	93.837	31,604	-
NIH	5-R01-HL121386-03	Characterizing Mechanisms of Sickle Cell Crisis via Dynamic Optical Assay	93.839	19,153	-
NIH	5-R01-HL127174-03	Canonical & non-canonical regulation of the HDL receptor by PDZK1's PDZ domains	93.837	494,483	24,737
NIH	5-R01-MH060379-17	Functional and anatomical characterization of the striosomal system	93.242	638,802	-
NIH	5-R01-MH085802-09	MicroRNA mechanisms of Rett Syndrome	93.242	484,372	-
NIH	5-R01-MH102441-05	Dissecting the Neural Circuits Encoding Positive and Negative Valence	93.242	502,981	-
NIH	5-R01-MH104536-05	Imaging Synaptic Transmission of Individual Active Zones	93.242	382,321	-
NIH	5-R01-MH106469-04	Synaptic pathophysiology of the 16p11.2 microdeletion mouse model	93.242	685,785	-
NIH	5-R01-MH106497-04	Delineating the Anatomical and Functional Circuitry Underlying Social Learning	93.242	249,894	-
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	953,187	-
NIH	5-R01-MH111872-03	Multi-Site Non-Invasive Magnetothermal Excitation and Inhibition of Deep Brain Structures	93.242	398,770	-
NIH	5-R01-MH112694-02 REVISED	Simultaneous multiplexed in situ fluorescence imaging of neuronal proteins and messenger RNAs	93.242	324,551	-
NIH	5-R01-MH114031-02	RNA Scaffolds for Cell Specific Multiplexed Neural Observation	93.242	329,507	-
NIH	5-R01-MH115037-02	Elucidating neural substrates that mediate autism-like behaviors	93.242	463,381	-
NIH	5-R01-MH115592-02	Thalamocortical Dynamics and Consciousness	93.242	266,872	-
NIH	5-R01-NS025529-28	Extrapyramidal Systems	93.853	369,216	-
NIH	5-R01-NS040296-17	Characterization of the Drosophila Synaptotagmin Family	93.853	441,463	-
NIH	5-R01-NS078127-05R	Neural mechanisms of timing in the oculomotor system	93.853	174,588	-
NIH	5-R01-NS086804-04 REVISED	Fiber Inspired Neural Probes for the Multifunctional Dynamic Brain Mapping	93.853	361,989	-
NIH	5-R01-NS089076-04	Epigenetic pathology and therapy in Huntington's disease	93.853	203,045	-
NIH	5-R01-NS094178-03R	Brainstem mechanism underlying recurrent laryngospasm in Rett syndrome	93.853	371,915	-
NIH	5-R01-NS098505-02	Dissecting the role of thalamic inhibition in neurodevelopmental diseases	93.853	850,426	312,292
NIH	5-R01-NS098505-03	Dissecting the role of thalamic inhibition in neurodevelopmental diseases	93.853	342,114	-

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Federal Agency	Government Contract Number	Master Project Name	CFDA #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NIH	5-R01-NS102727-02	Scalable Cell- and Circuit-Targeted Electrophysiology	93.853	390,596	20,675
NIH	5-R01-NS102730-02	Mechanisms underlying DNA double strand break response in Alzheimer?s disease and frontal temporal dementia	93.853	446,486	-
NIH	5-R01-NS104892-02	Neuromodulatory control of collective circuit dynamics in C. elegans	93.853	249,459	-
NIH	5-R03-AR067503-03	Unveiling the Proteostasis Network of Normal and Disease_Causing Collagen_I	93.846	-4,275	-
NIH	5R03HD092676-02	High-performance, low-cost, passive prosthetic knees optimized to replicate physiological gait in multiple mobility scenarios	93.865	82,357	-
NIH	5-R21-AG054961-02 REVISED	Aggregate Proximity-Induced, Proteostasis Network-Modulated Destabilization of the Proteome	93.866	241,052	-
NIH	5-R21-AI110787-02 REVISED	Multigenerational lineage heterogeneity and metabolic plasticity of CD8 T cells	93.855	76,915	-
NIH	5-R21-AI121613-02	MITOPlas_Scalable characterization of the malaria parasite mitochondrial proteome	93.855	145,275	-
NIH	5-R21-AI121669-02	Engineering "Phagebody" Antimicrobials for Carbapenem-Resistant Enterobacteriaceae	93.855	38,663	-
NIH	5-R21-AI126465-02	Siderophore-based antibiotics: consequences for the microbiota and bacterial pathogens	93.855	207,566	84,527
NIH	5-R21-AI130776-02	Development and application of glycan readers for the detection and analysis of bacterial glycoconjugates	93.855	166,073	-
NIH	5-R21-AR068477-02	A C. elegans drug discovery platform for dysferlin-based Muscular Dystrophies	93.846	29,576	-
NIH	5-R21-CA177391-03	Implantable device for high-throughput in vivo drug sensitivity testing	93.394	-393	-
NIH	5-R21-CA187236-02	Characterizing functional targets of a non-coding RNA oncogene, SNORA42	93.396	16,844	-
NIH	5-R21-CA198028-02	Understanding the role of serine metabolism in cancer	93.396	-298	-
NIH	5-R21-DA044748-02	Nanoprobes for neurotransmitter-sensitive molecular fMRI in addiction research	93.279	192,345	-
NIH	5-R21-EB018924-02	Liquid-helium-free persistent-mode HTS magnets for NMR and MRI applications	93.286	37,725	1,429
NIH	5-R21-EB022729-02 REVISED	Multifunctional fibers for high-throughput microfluidics	93.286	81,278	-
NIH	5-R21-HD090346-02	Using fMRI in awake human infants to study functional development of cortex	93.865	151,148	-
NIH	5-R21-NS084264-02	Noninvasive Determination of Intracranial Pressure in Pediatric Patients	93.853	-13,167	-
NIH	5-R21-NS091982-02	New technologies for in vivo spectral resolved high speed multiphoton microscopsy	93.853	193,614	-

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Federal Agency	Government Contract Number	Master Project Name	CFDA #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NIH	5-R21-NS102762-02	Improving in vitro generation of human oligodendrocyte lineage cells by mechanical stimulation	93.853	105,347	-
NIH	5-R21-NS105070-02	Novel implementation of Temporal Focusing Line Scanning for Fast Imaging of Synaptic Structural Dynamics in vivo	93.853	164,898	-
NIH	5-R21-TW010245-02	Low Cost Mobile Platform for Pulmonary Disease Screening	93.989	25,041	-
NIH	5-R24-MH109081-03	Toward functional molecular neuroimaging using vasoactive probes in human subjects.	93.242	114,387	-
NIH	5-R25-GM116705-04	IMPACT Program for Biomedical Researcher Career Development	93.859	546,850	166,050
NIH	5-R33-AI100190-04	MMDx: A rapid multiplexed matrix code diagnostic for real time epidemiology	93.855	244,599	-
NIH	5-R33-AI121669-04	Engineering "Phagebody" Antimicrobials for Carbapenem-Resistant Enterobacteriaceae	93.855	7,469	-
NIH	5-R33-CA191143-02	Single cell growth assay for residual cells in acute lymphoblastic leukemia	93.394	1,472	-
NIH	5-R33-CA191143-03	Single cell growth assay for residual cells in acute lymphoblastic leukemia	93.394	95,534	81,534
NIH	5-R33-CA191143-03REVISED	Single cell growth assay for residual cells in acute lymphoblastic leukemia	93.394	131,486	-
NIH	5-R34-HL125859-02	Entrainment-based mechanical ventilation to improve patient-ventilator synchrony	93.837	68,612	-
NIH	5-R35-ES028303-02	Mechanism of Eukaryotic Environmental Mutagenesis	93.113	368,310	-
NIH	5-R35-GM118066-03	Causes and consequences of aneuploidy	93.859	368,333	-
NIH	5R35GM122483-02	Metal-Catalyzed Methods for Organic Synthesis	93.859	933,281	-
NIH	5-R35-GM122538-02 REVISED	Mechanisms and regulation of replication, the cell cycle, gene expression, and horizontal gene transfer in prokaryotes, focusing on Bacillus subtilis	93.859	513,292	-
NIH	5-R35-GM124732-02	Evolution and Regulation of Bacterial Proteome Composition	93.859	214,885	-
NIH	5-R37-EB000244-36	Controlled Release of Macromolecules	93.286	0	-
NIH	5-R37-EB000244-38	Controlled Release of Macromolecules	93.286	169,416	-
NIH	5-R37-GM041934-26	Cell Cycle and Sporulation in Bacillis Subtillis	93.859	398,317	-
NIH	5-R37-GM057073-21	Structure-Function Relationship of Glycosaminoglycans	93.859	472,699	-
NIH	5-R37-MH087027-09	Cortical Circuits for Attention and Decisions	93.242	635,278	-
NIH	5-R37-NS051874-23	The Cdk5/35 Kinase	93.853	479,424	-
NIH	5-T32-EB001680-13	Neuroimaging Training Program	93.286	174,467	-
NIH	5-T32-EB019940-02	Neurobiological Engineering Training Program	93.286	14,501	-
NIH	5-T32-EB019940-03 REVISED	Neurobiological Engineering Training Program	93.286	204,175	-
NIH	5-T32-EB019940-04	Neurobiological Engineering Training Program	93.286	28,735	-

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Federal Agency	Government Contract Number	Master Project Name	CFDA #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NIH	5T32ES007020-42-REVISED	Training Grant in Environmental Toxicology	93.113	3,066	-
NIH	5-T32-ES007020-43	Training Grant in Environmental Toxicology	93.113	563,063	-
NIH	5-T32-GM007287-43	Pre-Doctoral Training in Biological Sciences	93.859	1,819,655	-
NIH	5-T32-GM008334-28	Interdepartmental Biotechnology Training Program	93.859	15,297	-
NIH	5-T32-GM087237-08	Graduate Training in Computational and Systems Biology	93.859	285	-
NIH	5-T32-MH074249-10	Training Program in the Neurobiology of Learning and Memory	93.282	34	-
NIH	5-T32-OD010978-30 REVISED	Biomedical Research Training for Veterinary Scientists	93.351	384,409	-
NIH	5-U01-CA184897-03	Dynamics of Gene and Isoform Regulation during EMT and tumor progression	93.396	24,713	21,819
NIH	5-U01-CA184897-04	Dynamics of Gene and Isoform Regulation during EMT and tumor progression	93.396	610,732	219,379
NIH	5-U01-CA184897-05	Dynamics of Gene and Isoform Regulation during EMT and tumor progression	93.396	28,966	-
NIH	5-U01-CA184898-03	Embryonal Brain Tumor Networks	93.396	49,801	58,990
NIH	5-U01-CA184898-04	Embryonal Brain Tumor Networks	93.396	610,839	258,918
NIH	5-U01-CA184898-05	Embryonal Brain Tumor Networks	93.396	2,165	-
NIH	5-U01CA202177-02	Quantitative analyses of tumor cell extravasation	93.396	4,867	-
NIH	5-U01CA202177-03	Quantitative analyses of tumor cell extravasation	93.396	515,716	197,594
NIH	5U01CA215798-02	Systems approaches to understanding the relationships between genotype, signaling, and therapeutic efficacy	93.396	1,779	-
NIH	5-U01-CA215798-02	Systems approaches to understanding the relationships between genotype, signaling, and therapeutic efficacy	93.396	64,669	64,669
NIH	5-U01-EB018813-02	Low-cost microelectronic ultrasound system for unobtrusive ABP measurement	93.286	236,342	-
NIH	5-U01-HG007610-03	Epigenomic variation atlas across human tissues and individuals in GTEx	93.172	592,355	549,138
NIH	5-U01-MH106011-03	Ultra-Multiplexed Nanoscale In Situ Proteomics for Understanding Synapse Types	93.242	38,414	23,202
NIH	5U01MH106018-02 REVISED	Novel technologies for nontoxic transsynaptic tracing	93.242	59,862	-
NIH	5-U01-MH106018-03	Novel technologies for nontoxic transsynaptic tracing	93.242	331,509	-
NIH	5-U01-MH108168-02	Connectomes Related to Anxiety and Depression in Adolescents	93.242	160,945	168,849
NIH	5-U01-MH108168-03	Connectomes Related to Anxiety and Depression in Adolescents	93.242	1,360,249	1,040,081
NIH	5-U01-MH-109129-02	Anterograde monosynaptic tracing - Restricted Parent	93.242	95,237	77,231
NIH	5-U01-MH-109129-03	Anterograde monosynaptic tracing - Restricted Parent	93.242	717,674	204,382
NIH	5-U01-NS090438-03 REVISED	Next generation high-throughput random access imaging, in vivo	93.853	212,063	-
NIH	5-U01-NS090451-03	Calcium sensors for molecular fMRI	93.853	-1,825	-

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Federal Agency	Government Contract Number	Master Project Name	CFDA #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NIH	5-U01-NS090473-03	Cortical circuits and information flow during memory-guided perceptual decisions	93.853	391,527	-
NIH	5-U24-TR001951-02	Translational Center of Tissue Chip Technologies for quantitative characterization of Microphysiological Systems	93.350	1,792,422	16,453
NIH	5-U54-CA210180-02	MIT/Mayo Physical Sciences Center for Drug Delivery and Efficacy in Brain Tumors	93.397	1,319,188	899,143
NIH	5-U54-CA217377-02	Quantitative and functional characterization of therapeutic resistance in cancer (PARENT)	93.397	184,747	-
NIH	5-U54-CA217377-02 REVISED	Quantitative and functional characterization of therapeutic resistance in cancer (PARENT)	93.397	6,560	-
NIH	5-UG3-TR002186-02	Cartilage-Bone-Synovium MPS: Musculoskeletal Disease Biology in Space	93.350	161,749	-
NIH	5-UH3-TR000496-05	All-Human Microphysical Model of Metastasis Therapy	93.350	242,906	49,096
NIH	5UH3TR000496-05 REVISED	All-Human Microphysical Model of Metastasis Therapy	93.350	37,309	-
NIH	5-UH3-TR000496-05S1	All-Human Microphysical Model of Metastasis Therapy	93.350	30,120	20,758
NIH	7-F30-CA210373-04	Determining the mechanism of aspartate sensing by the mTOR pathway	93.398	50,370	-
NIH	7-R01-AR044276-22 REVISED	Chemistry and Biology of Collagen	93.846	276,577	-
NIH	7-R01-GM044783-25	Protein Chemistry	93.859	412,661	-
NIH	7R01HG008155-04	Interpreting non-coding variants using epigenomics, regulatory models, & validation experiments	93.172	74,103	-
NIH	7-R01-MH107680-04	The cognitive searchlight: TRN circuit dissection in health and disease	93.077	161,597	-
NIH	7R01MH109978-03	Network-based prediction and validation of causal schizophrenia genes and variants	93.242	13,895	-
NIH	F31-CA224796	Development of a novel platform for the identification of synthetic lethal genes in a Kras and Keap1-mutant mouse model of lung adenocarcinoma.	93.398	21,935	-
NIH	R01 AI111860-03	T-cell-mediated targeting of therapeutics to HIV reservoirs	93.855	305,451	305,451
NIH	R01 CA173712-04REVISED	Genetic circuits for high-throughput, multi-sensory, live cell microRNA profiling	93.396	128,267	-
		Total for NIH		**112,961,610**	**13,410,343**
		TOTAL for Department of Health & Human Services		**113,505,615**	**13,410,343**

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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	155,646	-
DHS	2014-DN-077-ARI080-04	ARI-LA: Rapid, Low-Dose Detection of Shielded Special Nuclear Material	97.077	186,387	-
		Total for Department of Homeland Security		**342,033**	**-**
		TOTAL for Department of Homeland Security		**342,033**	**-**

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DEPARTMENT OF TRANSPORTATION					
DOT	13-C-AJFE-032	Center of Excellence for Alternative Jet Fuels and Environment	20.109	227,953	-
DOT	13-C-AJFE-042	Center of Excellence for Alternative Jet Fuels and Environment	20.109	150,041	-
DOT	13-C-AJFE-046	Center of Excellence for Alternative Jet Fuels and Environment	20.109	362,554	-
DOT	13-C-AJFE-048	Center of Excellence for Alternative Jet Fuels and Environment	20.109	442,882	83,204
DOT	13-C-AJFE-MIT-026	Center of Excellence for Alternative Jet Fuels and Environment	20.109	68,824	-
DOT	13-C-AJFE-MIT-030	Center of Excellence for Alternative Jet Fuels and Environment	20.109	49,892	-
DOT	13-C-AJFE-MIT-038	Center of Excellence for Alternative Jet Fuels and Environment	20.109	89,244	-
DOT	13-C-AJFE-MIT-043	Center of Excellence for Alternative Jet Fuels and Environment	20.109	154,550	-
DOT	13-C-AJFE-MIT-045	Center of Excellence for Alternative Jet Fuels and Environment	20.109	185,887	-
DOT	13-C-AJFE-MIT-047	Center of Excellence for Alternative Jet Fuels and Environment	20.109	68,856	-
DOT	16-G-011	FAA Joint University Program for Air Transportation Activities	20.108	104,736	-
DOT	DTFH6115C00033	Future freight and logistics survey: integrated data collection using mobile sensing, wireless communication and machine learning algorithms	20.RD	392,792	-
DOT	DTFR5316P00052	Design and Implementation of a Head-up Display for the Cab Technology Integration Laboratory	20.RD	64,493	-
DOT	DTRT13-G-UTC31	Region 1 University Transportation Center	20.701	1,346,595	1,030,909
DOT	DTRT5717C10121	Library Services for DOT	20.RD	71,558	-
DOT	DTRT5717P80110/V3331048	Ductile Fracture of Stainless Steel Rail Equipment	20.RD	70,395	-
DOT	PO # DTRT5716P80015	Ductile Fracture in Rail Equipment	20.RD	-16,883	-
		Total for Department of Transportation		**3,834,370**	**1,114,113**
		TOTAL for Department of Transportation		**3,834,370**	**1,114,113**

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MISCELLANEOUS FEDERAL GOVT					
Department of Interior					
DOI	D15PC00242	Quantum Algorithms for Partial Differential Equations	12.RD	-832	-
DOI	R16AC00122	System-level cost and performance optimization for photovoltaic-powered electrodialysis reversal desalination	15.506	17,654	-
DOI	R17AC00135	Tailoring Advanced Desalination Technologies for 21st Century Agriculture	15.506	40,759	-
		Total for Department of Interior		**57,581**	**-**
Department of Education					
ED	P116F150045	Towards Scalable Differentiated Instruction Using Technology-enabled Competency-based Dynamic Scaffolding	84.RD	281,119	69,913
		Total for Department of Education		**281,119**	**69,913**
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	176,907	-
USDA	MRA DTD. 05/22/2018	GHG Benefits of Using Lumber in Construction	10.RD	17,706	-
		Total for Department of Agriculture		**194,613**	**-**
Other Agencies					
Misc.	83618301	The Hawaii Island Volcanic Smog Sensor Network (HI-Vog)	66.509	140,827	14,707
Misc.	83696901	Integrated Assessment of Climate Change Mitigation, Impacts and Adaptation	66.034	84,628	-
Misc.	AID-OAA-A-12-00095	CITE and IDIN	98.001	1,206,145	128,473
Misc.	AID-OAA-A-16-00058	Ultra-Low Energy Drip Irrigation for MENA Countries	98.RD	735,758	237,493
Misc.	CDI-G-015	USAID Desal Prize: Phase 2 Pilot of PV-EDR in Mehabubnagar, India	98.RD	-1,992	-
Misc.	CONTRACT DATED 5/7/2017	Development of a Bacteriophage-Based Nanobiosensor for the Rapid and On-site Detection of the Phytopathogen Pseudomonas solanacearum	98.RD	15,473	-
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	25,812	-
		Total for Other Agencies		**2,206,650**	**380,673**
		TOTAL for Miscellaneous Federal Govt		**2,739,963**	**450,586**

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NATIONAL AERONAUTICS AND SPACE ADMINISTRATION					
NASA	80MSFC17C0012	Imaging X-ray Polarimetry Explorer - Main Project (Phase B - D)	43.RD	67,524	-
NASA	80NSSC17K0048	HIGH-CADENCE XRT MONITORING OF ULTRALUMINOUS X-RAY SOURCES TO SEARCH FOR ORBITAL PERIODS (SWIFT 1215176)	43.001	1,784	-
NASA	80NSSC17K0125	16-AIST16-0048, Computer Aided Discovery and Algorithmic Synthesis for Spatio-Temporal Phenomena in InSAR	43.001	258,326	-
NASA	80NSSC17K0283	Autonomous Moisture Continuum Sensing Network	43.001	201,044	22,479
NASA	80NSSC17K0330	Development of a Commercial Space Technology Roadmap	43.012	80,822	-
NASA	80NSSC17K0346	CLICK: CubeSat Laser Infrared Crosslink	43.012	283,221	3,774
NASA	80NSSC17K0561	Signatures of the multiple scales of motion in shaping marine phytoplankton biogeography	43.001	207,273	56,778
NASA	80NSSC17K0587	Cost and Risk Modeling of Distributed Missions: Applications for Trade-space Analysis Tool for Constellations (TAT-C)	43.001	86,091	-
NASA	80NSSC17K0773	Generating mare magmas by lunar magma ocean cumulate remelting: Experiments and models	43.001	36,234	-
NASA	80NSSC17M0075	Exploring Arctic Climate Change with Models and Data	43.001	230,595	-
NASA	80NSSC18K0138	High-Speed, Low-Noise, Radiation-Tolerant CCD Image Sensors for Strategic High-Energy Astrophysics Missions	43.001	108,506	-
NASA	80NSSC18K0162	Dynamic self-assembly driven by time varying fields	43.003	46,772	-
NASA	80NSSC18K0308	The K2 M Dwarf Program: Fields 13-15	43.001	24,102	-
NASA	80NSSC18K0457	Large Geodetic Array Processing and Correlation Impacts	43.001	16,146	-
NASA	80NSSC18K0553	Solar System Planetary Geodesy Research	43.001	16,893	-
NASA	80NSSC18K0676	MIT Participation in the International Space Station Transient Astrophysics Observatory Mission Phase A Concept Study	43.001	67,514	-
NASA	80NSSC18M0042	SPRINT: Scheduling Planning Routing Intersatellite Network Tool	43.012	17,753	-
NASA	80NSSC18M0045	High SPecific-impulse Electrospray Explorer for Deep-space (HiSPEED)	43.012	58,687	-
NASA	NNA13AA90A	Foundations of Complex Life: Evolution, Preservation & Detection on Earth & Beyond	43.001	1,000,126	493,921
NASA	NNG14FC03C	Transiting Exoplanet Survey Satellite	43.RD	8,145,260	1,986,934
NASA	NNG14PJ13C	Neutron Star Composition ExploreR (NICER) Project Detector Subsystem	43.RD	259,237	24,633
NASA	NNG15HZ35C	NASA Mark IV/VLBI Follow-On	43.RD	2,343,332	-
NASA	NNH13CJ23C	InSPIRE 2	43.RD	36	-

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Federal Agency	Government Contract Number	Master Project Name	CFDA #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NASA	NNH17CH01C	The Mars Oxygen Isru Experiment (MOXIE) Continuation	43.RD	359,605	33,220
NASA	NNX10AB27G	Exploring the Outer Solar System with Stellar Occultations	43.RD	18,797	-
NASA	NNX10AE50G	High Performance Three-Dimensionally Integrated Active Pixel X-Ray Sensors	43.RD	212,110	-
NASA	NNX10AG27G	SMASS-Next: Next Generation Neo Spectroscopic Survey	43.RD	86,541	-
NASA	NNX12AE37G	Leveraging High Resolution Spectra to Understand the Disk and Relativistic Iron Line of Cygnus X-1	43.001	20,766	-
NASA	NNX12AF22G	Directly-Deposited Blocking Filters for Imaging X-ray Detectors: Technology Development for the International X-ray Observatory	43.001	32,575	-
NASA	NNX12AL26G	Identifying Disrupted Differentiated Bodies in the Main Asteroid Belt	43.001	34,443	-
NASA	NNX12AM16G	NRI-Small: A Novel Powered Leg Prosthesis Simulator for Sensing and Control Development	43.009	-5,262	-
NASA	NNX13AC34G	Interpreting Ecological Variability Using Remotely Observed Optical Properties and Ocean Models	43.001	32,682	20,950
NASA	NNX13AI62G	Characterization of the Stratospheric, Lower Thermospheric, and Ionospheric Variability Related to the Sudden Stratospheric Warmings	43.001	63,021	-
NASA	NNX13AJ86G	Mars Reconnaissance Orbiter (MRO) Gravity Field Analysis	43.001	94,157	-
NASA	NNX13AK98G	Rheological behavior of icy mixtures with application to the outer planets	43.001	70,081	-
NASA	NNX14AB40G	Tidal Evolution of Coalescing Compact Binaries, Short Period Exoplanets, and Rotating Stars	43.001	-3,389	1,269
NASA	NNX14AC75G	Microwave Radiometer Technology Acceleration (MiRaTA) CubeSat	43.001	198,182	76,948
NASA	NNX14AE76G	Thin Mirror Shaping Technology for High-Throughput X-ray Telescopes	43.001	311,339	-
NASA	NNX14AG47A	Active Wing Shaping Control Concept Using Composite Lattice-based Cellular Materials	43.001	99,188	-
NASA	NNX14AH11A	Ubiquitous 2-Dimensional Smart Sensing (UDS2) Initiative	43.001	-2,460	-
NASA	NNX14AI58A	Field Investigations to Enable Solar System Science and Exploration	43.003	9,272	-
NASA	NNX14AJ51G	Data and forcing integration for improved estimation of spatial sea level patterns and their uncertainties, with extended diagnostics for closed budget analysis	43.001	8,364	8,364
NASA	NNX14AK27G	PPhotochemistry and Spectroscopy of Sulfur Dioxide, Sulfur Monoxide and Elemental Sulfur as Source Reactions for Archean Sulfur Mass-Independent Isotope Fractionation	43.001	141,186	-

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Federal Agency	Government Contract Number	Master Project Name	CFDA #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NASA	NNX14AL95G	Data Retrieval and Analysis from Nanosatellite Microwave Radiometers	43.001	-5,184	-
NASA	NNX14AP38G	How sensitive are global climate forcing and surface air quality estimates to aerosol properties?	43.001	126,218	-
NASA	NNX14AQ03G	Geodetic Analysis Enhancements for Real-Time and Millimeter Accuracy Reference Frames	43.001	98,495	-
NASA	NNX14AT22A	Global Environmental Impact of Supersonic Cruise Aircraft in the Stratosphere	43.004	300,529	-
NASA	NNX15AC76G	MIT Participation in Calibration and Ground Software Development for Astro-H	43.001	182,479	-
NASA	NNX15AF85G	The Search for Extra-Terrestrial Genomes (SETG)	43.001	691,417	192,443
NASA	NNX15AG84G	Computer-Aided Discovery of Earth Surface Deformation Phenomena	43.001	-5,167	-
NASA	NNX15AH72G	Experimental and Theoretical Investigations of Solar Nebula Magnetic Fields	43.001	174,800	118,664
NASA	NNX15AK10G	Lunar Orbiter Laser Altimeter Investigation and Associated Science	43.001	246,241	-
NASA	NNX15AK23G	Probing the debris disk-planet connection with collisional cascades	43.001	14,928	-
NASA	NNX15AL14G	Continuing Progress in Soft X-ray Polarimetry	43.001	139,603	-
NASA	NNX15AL48G	ROSES: Cassini Data Analysis and Participating Scientists	43.001	80,257	66,172
NASA	NNX15AL62G	Investigating the Ancient Lunar Dynamo	43.001	38,432	8,545
NASA	NNX15AM35G	Investigating the history of destructive collisions in the asteroid and Kuiper belts	43.001	91,852	-
NASA	NNX15AM43G	Temporal Variations in the Particle Sizes of Martian Atmospheric Dust	43.001	47,399	-
NASA	NNX15AM91A	Aircraft and Technology Concepts for an N+3 Subsonic Transport-Phase 3	43.002	2,889	-
NASA	NNX15AQ50A	Search and Rescue under the Tree Canopy	43.002	208,355	-
NASA	NNX15AR20G	NRI: Exosuit System Design Parameters as Revealed by an Integrated, Human Musculoskeletal Computational Model	43.012	267,769	75,000
NASA	NNX15AU41A	Rapid Viscous Aerodynamic Analysis/Design Methodology Utilizing Inviscid Coupling with a 3D Integral Boundary Layer	43.002	225,550	-
NASA	NNX15AU66A	Swept time-space domain decomposition rule for breaking the latency barrier	43.002	183,605	135,554
NASA	NNX15AU90G	Tradespace Analysis Tool for Designing Earth Science Distributed Missions	43.001	12,838	-
NASA	NNX15AW03A	BASALT: Biologic Analog Science Associated with Lava Terrains	43.001	34,959	-

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Federal Agency	Government Contract Number	Master Project Name	CFDA #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NASA	NNX15AW35G	Design and Evaluation of Automated Electronic Checklists for Robotics Operations	43.003	147,144	-
NASA	NNX15AW94G	MIT Participation in Scientific Analysis and Interpretation Astro-H Data	43.001	32,338	-
NASA	NNX16AC49A	Robust Autonomy for Extreme Space Environments: Hosting R5 at MIT	43.012	254,498	-
NASA	NNX16AC98G	Advanced Global Atmospheric Gases Experiment [AGAGE] Collaborative Project: MIT Component	43.001	909,757	381,724
NASA	NNX16AD01G	High Precision Assembly of Thin Mirror X-ray Telescopes	43.001	279,735	-
NASA	NNX16AD29G	Experimental and Petrologic Investigations of Chemical Differentiation on the Ureilite Parent Body	43.001	125,495	-
NASA	NNX16AE93G	Raising the Technology Readiness Level of 4.7-THz local oscillators	43.001	142,569	-
NASA	NNX16AF61A	Autonomy- and Autonomicity-Enhanced Air Traffic Management	43.002	38,348	-
NASA	NNX16AG82G	Electron Hole Instabilities in the Plasma Wake of Moons, Asteroids and Comets	43.001	182,527	38,148
NASA	NNX16AH07G	Modeling and Simulation for Strategic Development of a Profitable In-Space Manufacturing Economy	43.012	10,500	-
NASA	NNX16AH25G	Cooling of the super-heated neutron star in MAXI J0556-332 (XMM 76275)	43.001	10,526	-
NASA	NNX16AK25A	Feasibility of Hybrid-Electric Propulsion for Ultra-Efficient Commercial Aircraft	43.002	422,715	167,114
NASA	NNX16AK97G	Applications Lead for the NASA ISRO Synthetic Aperture Radar Mission Science Definition Team	43.001	129,290	-
NASA	NNX16AN15G	Use of Soil-Moisture Retrievals to Refine Global Land Trace Gases Emissions and their Climate Feedbacks	43.001	202,621	88,072
NASA	NNX16AR47G	Assessing Ecosystem Vulnerability to Climate Change through Optics, Imagery and Models	43.001	140,487	12,582
NASA	NNX16AT66A	Smoothing-Based Relative Navigation & Coded Aperture Imaging	43.012	88,539	-
NASA	NNX17AB11G	Quantifying and Preventing EVA Injury in Exploration Environments	43.003	133,413	45,018
NASA	NNX17AC25G	Revealing the Compact Object in NGC 300 X-1	43.001	-5,344	-
NASA	NNX17AD07G	Laser Guide Star for Large Aperture Segmented Space Telescopes	43.012	268,796	106,899
NASA	NNX17AD84G	Cooling of the super-heated neutron star in MAXI J0556-332 (XMM 78267)	43.001	-4	-
NASA	NNX17AE11G	Rocket Experiment Demonstration of a Soft X-ray Polarimeter	43.001	11,968	-
NASA	NNX17AE47G	Development of High Resolution X-ray Telescope Optics	43.001	462,779	-

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Federal Agency	Government Contract Number	Master Project Name	CFDA #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NASA	NNX17AG43G	Development of a Critical Angle Transmission Grating Spectrometer	43.001	921,264	-
NASA	NNX17AG98G	Improving positioning precision at geodetic core sites through exploration of atmospheric inter-technique synergies	43.001	84,537	24,947
NASA	NNX17AH71G	Solar eclipse-induced changes in the ionosphere over the continental US	43.001	58,533	-
NASA	NNX17AJ90G	Starshade Rendezvous Mission	43.001	48,622	-
NASA	NNX17AL45G	L3 Study Team / LISA Science Team participation	43.001	32,128	-
		Total for National Aeronautics and Space Administration		**23,630,520**	**4,190,148**
		TOTAL for National Aeronautics and Space Administration		**23,630,520**	**4,190,148**

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Federal Agency	Government Contract Number	Master Project Name	CFDA #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NATIONAL SCIENCE FOUNDATION					
NSF	ACI-1322254	VOSS: Collaborative Research: Is Larger Smarter? Investigating the Effect of Group Size on Collective Intelligence	47.070	18,467	-
NSF	ACI-1442997	CIF21 DIBBs: An Infrastructure for Computer-Aided Discovery in Geoscience	47.070	358,089	-
NSF	ACI-1550172	Collaborative Research: SI2-SSI: Jet Energy-loss Tomography with a Statistically and Computationally Advanced Program Envelope (JETSCAPE)	47.070	2,148	-
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	112,907	30,000
NSF	ACI-1640829	CIF21 DIBBs: PD: Metadata Toolkits for Building Multi-faceted Data-relationship Models	47.070	196,691	-
NSF	AGS-1042569	Climate Change in the Upper Atmosphere	47.050	17,055	-
NSF	AGS-1242204	The Millstone Hill Geospace Facility	47.050	2,094,167	131,382
NSF	AGS-1339264	Tropospheric Anthropogenic Aerosols and Climate	47.050	14,283	-
NSF	AGS-1343045	Collaborative Research: CEDAR--Study of Storm-time Large Scale Structures in the Subauroral Ionosphere with Coupled First-principles Model and Multi-instrument Observations	47.050	36,496	-
NSF	AGS-1343056	Collaborative Research: CEDAR -- Understanding the High-to-Mid Latitude Ionospheric Response to Stratospheric Warmings	47.050	38,190	-
NSF	AGS-1343967	INSPIRE Track 1: Mahali: Space Weather Monitoring Everywhere	47.050	80,396	30,666
NSF	AGS-1418508	Collaborative Research: Self-Aggregation of Moist Convection, Radiative-Convective Instability, and the Regulation of Tropical Climate	47.050	44,912	-
NSF	AGS-1419667	Linkages of Changes in Ozone to Arctic Climate Change in the Stratosphere and Troposphere	47.050	203,924	-
NSF	AGS-1461517	Trends and Variability of Temperatures near the Tropical Tropopause Layer and Implications for Tropical Cyclones	47.050	218,335	-
NSF	AGS-1520825	Hazards SEES: Uncovering the hidden skeleton of environmental flows: advanced Langrangian methods for hazards prediction, mitigation and response	47.050	549,167	420,117
NSF	AGS-1523305	Collaborative Research: Lightning Studies in a Polluted Atmosphere	47.050	38,159	-
NSF	AGS-1536551	Collaborative Research: Laboratory Investigations of Particle-Organic Vapor Interactions: Effects on Particle Formation, Growth, and Properties	47.050	36,703	-

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Federal Agency	Government Contract Number	Master Project Name	CFDA #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NSF	AGS-1539972	The Influence of Recent Volcanic Eruptions on Stratospheric Ozone Recovery: A Data Analysis and Modeling Study Including Estimated Uncertainties	47.050	72,440	-
NSF	AGS-1547733	Collaborative Research: Stratospheric Age in a Changing Climate: Connecting Theory, Models, and Observations	47.050	163,184	-
NSF	AGS-1552195	Improved understanding of the response of mean and extreme precipitation to climate change	47.050	122,423	5,321
NSF	AGS-1564495	Impacts of the biosphere on global tropospheric chemistry and climate	47.050	188,227	-
NSF	AGS-1623218	Collaborative Research: Using a hierarchy of models to constrain the temperature dependence of climate sensitivity	47.050	132,524	-
NSF	AGS-1638672	Collaborative Research: Comprehensive Characterization of Atmospheric Organic Carbon over Multiple Generations of Oxidation	47.050	158,909	-
NSF	AGS-1702691	Collaborative Research: Madagascar Caves and Paleoclimate (MADCAP): Investigating climate variability in the Southern Hemisphere of the Western Indian Ocean	47.050	32,951	-
NSF	AGS-1727575	2017 Graduate Climate Conference	47.050	20,000	-
NSF	AGS-1740533	Collaborative Research: Convection and rainfall enhancement over mountainous tropical islands	47.050	6,780	-
NSF	AGS-1749986	Improved understanding of changes in convective available potential energy and links to the large-scale circulation	47.050	13,800	-
NSF	AST-0907766	SMASS- Next: Next Generation Asteroid Spectroscopic Survey	47.049	99,815	-
NSF	AST-1156504	REU Site: Astronomy and Atmospheric Science at MIT Haystack Observatory	47.049	2,927	-
NSF	AST-1255160	CAREER: The origin of the metal-poor halo of the Milky Way	47.049	128,852	-
NSF	AST-1310930	The HI 21-cm Line as a Probe of Stellar Mass Loss and Evolution	47.049	2,656	-
NSF	AST-1343336	Realtime GHz-Wide Spectrum Sensing and Acquisition Using the Sparse FFT	47.049	133,559	-
NSF	AST-1411622	Collaborative Research: Observing the Epoch of Reionization with the Murchison Widefield Array	47.049	13,215	-
NSF	AST-1516106	Imaging the Radio Photospheres of Long-Period Variable Stars	47.049	8,964	-
NSF	AST-1547265	Collaborative Research:Dynamic Exclusion Zones: Balancing Incumbent Protection and Spectrum Utilization Efficiency	47.049	118,700	-
NSF	AST-1547331	Collaborative Research: Enhancing Access to Radio Spectrum for Real-Time Monitoring and Control	47.049	130,005	-
NSF	AST-1609547	Collaborative Research: EDGES: Detecting First Light and Reionization through the Global 21 cm Signature	47.049	23,192	-
NSF	AST-1614868	Shaping the Narrow Jets of Material from Supermassive Black Holes	47.049	71,756	-

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Federal Agency	Government Contract Number	Master Project Name	CFDA #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NSF	AST-1659420	REU Site: Astronomy and Informatics at the MIT Haystack Observatory	47.049	90,253	-
NSF	AST-1743708	Radio Stars From kHz to THz	47.049	19,669	-
NSF	AST-1751096	CAREER: Tracing the Birth and Growth of Galaxy Clusters with the South Pole Telescope 3rd Generation Survey	47.049	6,724	-
NSF	AST-1824644	Discovery of New Small, Cool Planets Orbiting M-Dwarf Stars	47.049	3,821	-
NSF	BCS-1429216	Lookit: Online interface for large-scale developmental studies	47.075	40,787	43,842
NSF	BCS-1534318	The role of noise in information-theoretic models of sentence comprehension and production	47.075	173,588	-
NSF	BCS-1551543	Doctoral Dissertation Research: A Communicative Perspective on Quantitative Syntax	47.075	98	-
NSF	BCS-1551866	CompCog: The edge of the lexicon: Productive knowledge and direct experience in the acquisition and processing of multiword expressions	47.075	71,671	-
NSF	BCS-1627068	Neural measures of social reward and information value in infants	47.075	201,396	-
NSF	BCS-1627861	Doctoral Dissertation Research: Designing Voice Analysis Technologies for Mental Health Applications in the United States	47.075	3,992	-
NSF	BCS-1629983	Workshop on Language Processing and Language Evolution: Special Session at the 2017 CUNY Conference on Human Sentence Processing	47.075	15,118	-
NSF	BCS-1634050	Computational neuroimaging of human auditory cortex	47.075	251,820	-
NSF	BCS-1724135	CRCNS US-German-Israeli Collaborative Research Proposal: Hierarchical Coordination of Complex Actions	47.075	42,967	-
NSF	BCS-1728970	Doctoral Dissertation Research: Pronominal System and Ergativity in Eastern Canadian Inuktitut	47.075	10,053	-
NSF	BCS-1829350	Collaborative Research: CompCog: Broad-coverage probabilistic models of communication in context	47.075	21,526	-
NSF	CBET-0939511	NSF Science and Technology Center: Emergent Behaviors of Integrated Cellular Systems	47.041	-13,817	-12,309
NSF	CBET-0939511	Science and Technology Center: Emergent Behavior of Integrated Cellular Systems (EBICS)	47.041	4,068,907	2,723,154
NSF	CBET-1253228	CAREER: Predicting granular flows: Amorphous continuum modeling with a length-scale	47.041	68,848	-
NSF	CBET-1253890	CAREER: Optoelectronic neural scaffolds: materials platform for investigation and control of neuronal activity and development	47.041	74,944	-
NSF	CBET-1335938	Dynamics of self-entangled DNA molecules	47.041	1,806	-
NSF	CBET-1454299	CAREER: Molecular Catalysis for Waste Valorization	47.041	63,393	-

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NSF	CBET-1507488	CDS&E: Collaborative Research: A Bayesian inference/prediction/control framework for optimal management of CO2 sequestration	47.041	90,488	-
NSF	CBET-1510768	Collaborative Research: Transport and Chemotaxis of Swimming Cells in Porous Media Flows	47.041	121,755	-
NSF	CBET-1511526	UNS: Modeling and Experimental Studies of the Interactions of 2D Materials with Solvents and Surfactants: Exfoliation, Self-Assembly of Composites, and Wetting.	47.041	130,364	-
NSF	CBET-1546990	EAGER: HOW DOES MUCOSALIVARY FLUID EVAPORATION SHAPE DISEASE TRANSMISSION FROM VIOLENT EXPIRATIONS?	47.041	406	-
NSF	CBET-1554398	CAREER: NANO-PARTICLE SELF-ASSEMBLY OUT OF EQUILIBRIUM	47.041	96,189	-
NSF	CBET-1602406	Polymer Dynamics of Knotted DNA	47.041	67,998	-
NSF	CBET-1605050	Collaborative Research: Dynamic simulation approaches to consequential life cycle assessment to evaluate recycling and substitution in metal and paper	47.041	48,249	-
NSF	CBET-1605406	NSF/CBET-BSF: Effect of Sunlight Intensity on Functional Inhomogeneity and Stability of Organic-Inorganic Perovskite Solar Cells	47.041	85,735	-
NSF	CBET-1605547	Collaborative Research: SusChEM: Air-stable, high-lifetime bismuth compounds as solar absorbers with perovskite-like band structures	47.041	56,876	-
NSF	CBET-1605943	Collaborative Research: Understanding and Controlling Chemo-Mechanical Properties of Metal Coordinating Polymer and Inorganic Nanoparticle Composites	47.041	85,912	-
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	91,311	14,553
NSF	CBET-1703978	Multi-propulsor Hydrodynamics for Water-Air Transition in Archer Fish	47.041	74,740	-
NSF	CBET-1704266	Enabling high-throughput computational discovery of stable and active single-site oxidation catalysts	47.041	52,287	-
NSF	CBET-1705923	Engineering a new family of consensus repeat proteins based on nucleopor	47.041	8,632	-
NSF	CBET-1706193	Collaborative Research: Hybrid Discrete-Continuum Numerical Simulation of Granular Materials	47.041	38,381	-
NSF	CBET-1729397	DMREF: Computational Design of Next-generation Nanoscale DNA-based Materials	47.041	59,738	39,606
NSF	CCF-1111109	AF: Large: Collaborative Research: Algebraic Graph Algorithms: The Laplacian and Beyond	47.070	46,106	-

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Federal Agency	Government Contract Number	Master Project Name	CFDA #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NSF	CCF-1111337	AF:Large:Collaborative Research: Reliable Quantum Communication and Computation in the Presence of Noise	47.070	8,645	-
NSF	CCF-1138986	Collaborative Research: Socially Assistive Robots	47.070	225,471	-
NSF	CCF-1161626	AF: Medium Collaborative Research General Frameworks for Approximation and Fixed Parameter Algorithms	47.070	86,431	-
NSF	CCF-1217506	AF: Small: Bounded-Contention Coding for Wireless Networks	47.070	17,111	-
NSF	CCF-1231216	A Center for Brains, Minds, and Machines: The Science and the Technology of Intelligence	47.070	5,003,360	1,256,447
NSF	CCF-1253205	CAREER: Information Theory Beyond Capacity	47.070	97,727	-
NSF	CCF-1253229	CAREER: A Formal Verification Platform Focused on Programmer Productivity	47.070	104,894	-
NSF	CCF-1314547	SHF: AF: Large: Collaborative Research: Parallelism without Concurrency	47.070	119,073	-
NSF	CCF-1317348	Collaborative Research: Visual Cortex on Silicon	47.070	162,985	-
NSF	CCF-1318384	SHF:Small: Scalable Memory Hierarchies with Fine-Grained QoS Guarantees	47.070	-410	-
NSF	CCF-1318620	CIF: Small: Collaborative Research: Combinatorial Joint Source-Channel Coding	47.070	-114	-
NSF	CCF-1319828	CIF:Small: Theory, Algorithms, and Applications of Super-Nyquist Coding	47.070	-4,386	-
NSF	CCF-1409228	CIF: Medium: Collaborative Research: Content Delivery over Heterogeneous Networks:Fundamental Limits and Distributed Algorithms	47.070	-926	-
NSF	CCF-1420692	AF: Small: New directions in the design of local computation algorithms	47.070	-9,710	-
NSF	CCF-1438967	XPS: FULL: DSD: Collaborative Research: Moving the Abyss: Database Management on Future 1000-core Processor	47.070	55,479	-
NSF	CCF-1438969	XPS: FULL: FP: Collaborative Research: Model-based, Event Driven Scalable Programming for the Mobile Cloud	47.070	47,896	-
NSF	CCF-1442887	CyberSEES:Type 2: Collaborative Research: Combining Experts and Crowds to Address Challenging Societal Problems	47.070	27,702	-
NSF	CCF-1452616	[Revised Budget] CAREER: Applications of Quantum Information Theory	47.070	89,384	-
NSF	CCF-1452994	CAREER: A Hardware and Software Architecture for Data-Centric Parallel Computing	47.070	219,733	-
NSF	CCF-1453126	CAREER: Resilient Design of Networked Infrastructure Systems: Models, Validation, and Synthesis	47.070	155,635	-
NSF	CCF-1453261	CAREER: Algorithmic Aspects of Machine Learning	47.070	60,941	-

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Federal Agency	Government Contract Number	Master Project Name	CFDA #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NSF	CCF-1461559	AF: Medium: Distributed Algorithms for Resource-Constrained and Dynamic Settings	47.070	224,452	-
NSF	CCF-1512611	SHF: Medium: Fiat: Correct-by-Construction and Mostly Automated Derivation of Programs with an Interactive Theorem Prover	47.070	192,196	-
NSF	CCF-1521584	Collaborative Research: Expeditions in Computing: The Science of Deep Specification	47.070	371,469	-
NSF	CCF-1521925	Collaborative Research: Evolable Living Computing: Understanding and Quantifying Synthetic Biological Systems' Applicability, Performance and Limits	47.070	1,177,099	-
NSF	CCF-1525130	AF: Small: Quantum Algorithms Arising from Ideas in Physics	47.070	90,198	-
NSF	CCF-1525705	CIF:Small: Cooperative Interference Engineering for Network Secrecy	47.070	28,453	-
NSF	CCF-1527270	CIF: Small: Collaborative Research:Towards more Secure Systems: Uniformization for Secrecy	47.070	87,928	-
NSF	CCF-1533644	XPS: FULL: FP: A profile-centric IDE for science-based performance engineering in the cloud	47.070	356,099	-
NSF	CCF-1533753	XPS: FULL: DSD: Scalable High Performance with Halide and Simit Domain Specific Languages	47.070	140,471	-
NSF	CCF-1535851	AitF: FULL: Sparse Fourier Transform: From Theory to Practice	47.070	175,869	-
NSF	CCF-1547999	EAGER: Collaborative Research: Algorithmic design principles for programmed DNA nanocages	47.070	-4,912	-
NSF	CCF-1553428	CAREER: Fast Graph Algorithms and Continuous Optimization	47.070	106,302	-
NSF	CCF-1563880	Title: SHF: Medium: Collaborative Research: Run-Time Support for Scalable Concurrent Programming	47.070	254,529	-
NSF	CCF-1564025	AF: Medium: Collaborative Research: Top-down algorithmic design of structured nucleic acid assemblies	47.070	173,229	-
NSF	CCF-1565235	AF:Large:Collaborative Research: Algebraic Proof Systems, Convexity, and Algorithms	47.070	632,843	-
NSF	CCF-1565516	CRII: CIF: Fast Algorithms for Learning Graphical Models from Scarce Data	47.070	35,918	-
NSF	CCF-1617730	AF: SMALL: Frontiers in Algorithmic Game Theory	47.070	54,053	-
NSF	CCF-1629809	AF: Large: Collaborative Research: Reliable Quantum Communication and Computation in the Presence of Noise	47.070	-667	-
NSF	CCF-1640012	E2CDA: Type I: Collaborative Research: Energy Efficient Computing with Chip-Based Photonics	47.070	226,630	-
NSF	CCF-1650733	Testing Pseudorandom Distributions	47.070	192,589	-
NSF	CCF-1651838	CAREER:Matrix Products: Algorithms and Applications	47.070	61,626	-

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Federal Agency	Government Contract Number	Master Project Name	CFDA #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NSF	CCF-1665252	AF: Small: Boolean Functions: Inequalities, Structure, Algorithms & Hardness	47.070	208,833	-
NSF	CCF-1665282	InTrans:TRI-MIT Collaboration on Formal Verification Meets Big Data Intelligence in the Trillion Miles Challange	47.070	129,436	-
NSF	CCF-1717610	CIF:Small:Submodular Optimization Techniques for Sensor and Signal Processing	47.070	43,501	-
NSF	CCF-1717842	CIF: Small: Fundamental limits and coding for massive wireless random-access	47.070	38,958	-
NSF	CCF-1723344	AitF: Collaborative Research: Algorithms for Probabilistic Inference in the Real World	47.070	71,900	-
NSF	CCF-1725303	SPX: Collaborative Research: Mongo Graph Machine (MGM): A flash-based appliance for large graph analytics	47.070	82,161	-
NSF	CCF-1729369	Collaborative Research: EPiQC: Enabling Practical-Scale Quantum Computation	47.070	32,404	-
NSF	CCF-1733808	AitF: Collaborative Research: Fast, Accurate, and Practical: Adaptive Sublinear Algorithms for Scalable Visualization	47.070	26,765	-
NSF	CCF-1740184	E2CDA: Type I: Collaborative Research: Energy-Efficient Artificial Intelligence with Binary RRAM and Analog Epitaxial Synaptic Arrays	47.070	145,841	-
NSF	CCF-1740501	BSF:2012338: Shortest Paths: Upper and lower bounds	47.070	2,414	-
NSF	CCF-1740519	AF: Medium: Collaborative Research: Hardness in Polynomial Time	47.070	10,643	-
NSF	CCF-1740525	AF: Small: Graphs and structures for distance estimation	47.070	132,812	-
NSF	CCF-1740751	MIT Institute for Foundations of Data Science	47.070	38,108	-
NSF	CCF-1741615	CAREER: Common Links in Algorithms and Complexity	47.070	136,129	-
NSF	CCF-1741638	AF: Small: Limitations on Algebraic Methods via Boolean Complexity Theory	47.070	3,460	-
NSF	CHE-1351646	CAREER: Stable Carbenes as Surface Anchoring Groups	47.049	130,039	-
NSF	CHE-1351807	CAREER: Using chemistry to probe anthrax toxin protein translocation	47.049	81,907	-
NSF	CHE-1352132	CAREER: Coordination Chemistry of Zinc-Chelating S100 Proteins and Biochemistry Partnership with a Regional University	47.049	95,080	-
NSF	CHE-1361865	Mechanisms for the Exchange of Energy between a Rydberg Electron and Its Ion-Core: Free Induction Decay Detected Pure Electronic Spectroscopy	47.049	147,063	-
NSF	CHE-1362118	Synthesis of d- and p-Block Element Molecules, Reagents, and Precursors (revised budget)	47.049	-73,670	-
NSF	CHE-1452857	CAREER: Ligand-Mediated Photothermal Energy Dissipation in Semiconductor Nanocrystals	47.049	143,473	-

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Federal Agency	Government Contract Number	Master Project Name	CFDA #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NSF	CHE-1454060	CAREER: Oxygen Reduction Catalysis at Tunable Metal Sulfide Nanofilms	47.049	163,642	-
NSF	CHE-1463707	Multiple Metal-Carbon Bonds, Metallacycles and Catalytic Olefin Metathesis Reactions	47.049	198,785	-
NSF	CHE-1464799	New Cycloaddition and Annulation Strategies for Organic Synthesis	47.049	55,700	-
NSF	CHE-1464804	Tools for Accurate Photoelectrochemistry in Complex Environments	47.049	15,251	-
NSF	CHE-1565649	Metal Coordination Compounds as Reporters for Biological NO, HNO, and S□Nitrosothiols	47.049	189,771	-
NSF	CHE-1629358	DMREF: Analysis and Optimization of Polymer Networks for Emerging Applications	47.049	288,022	-
NSF	CHE-1653289	CAREER: Nanocomposite Structure Control via Nanoparticle Self-Assembly	47.049	205,163	-
NSF	CHE-1654415	CAREER: Characterizing Water's Response to Hydrophilic Surfaces	47.049	97,306	-
NSF	CHE-1664799	Synthesis of d- and p-Block Element Molecules, Reagents, and Precursors	47.049	270,188	-
NSF	CHE-1665383	Coherent Spectroscopy and Coherent Control of Molecules and Materials	47.049	282,359	-
NSF	CHE-1709364	Chemical and biochemical determinants of phosphorothioate stability and location in bacterial genomes	47.049	102,373	-
NSF	CHE-1709993	Collaborative Research: Multiphase Reactivity of Atmospheric Organic Radicals: Gas- vs. Liquid- vs. Particle-phase Chemistry	47.049	82,124	-
NSF	CHE-1724505	CAREER: Nonmetal Phosphorus Catalysts for Hydrogen Transfer Reactivity	47.049	113,778	-
NSF	CMMI-1246740	SNM: Inverse Design of Nanostructured Heterogeneous Materials	47.041	-398	-
NSF	CMMI-1332789	Computation of grain boundary energy landscapes as a tool for grain boundary engineering	47.041	353	-
NSF	CMMI-1333242	Pilot-wave Hydrodynamics	47.041	12,720	-
NSF	CMMI-1334109	DMREF: Computational Design Principles for Functional DNA-based Materials	47.041	431,884	192,602
NSF	CMMI-1334267	Collaborative Research: TheDesignExchange, an interactive portal for the design community of practice	47.041	-719	-
NSF	CMMI-1351449	CAREER: Smart Morphable Surfaces for Aerodynamic Drag Control	47.041	185,750	-
NSF	CMMI-1351512	CAREER: Simulation-based optimization techniques for urban transportation problems	47.041	85,637	-
NSF	CMMI-1351619	CAREER: Advanced Mixed Integer Programming Formulations	47.041	90,571	-

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Federal Agency	Government Contract Number	Master Project Name	CFDA #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NSF	CMMI-1363167	Collaborative Research: Increasing Solar Panel Adoption by Modeling the Interrelated Impacts of Design Decisions, Industry Incentives, Public Policies, and Market Response	47.041	46,441	-
NSF	CMMI-1363391	Control-Configured Underwater Robots for Precision Multi-Axis Maneuvering	47.041	-20	-
NSF	CMMI-1426799	NRI: Collaborative Research: Models and Instruments for Integrating Effective Human-Robot Teams into Manufacturing	47.041	164,409	-
NSF	CMMI-1452875	CAREER: A Closed Loop Methodology for Investigating Trust, Culture, and Information Sharing in Global Supply Chains	47.041	116,562	-
NSF	CMMI-1462158	Learning Graphical Models: Hardness and Tractability	47.041	28,860	-
NSF	CMMI-1463181	GOALI: Collaborative Research: Nanomanufacturing of Integrated Metal-Carbon Nanotube Contacts for High-Performance MEMS Switches	47.041	10,745	-
NSF	CMMI-1532136	CAREER: Electroactive Graphene-Polymer System with Extreme Actuation and Tunable Properties	47.041	85,957	-
NSF	CMMI-1536233	The Role of Genetic Modifications, Age and Exercise on Cartilage Biomechanics using Genetically Engineered Mice	47.041	83,499	-
NSF	CMMI-1537536	An Innovative Optimization and Computational Framework for Assortment Problems Under Consider-Then-Rank Choice Models	47.041	76,291	-
NSF	CMMI-1547130	EAGER: Cybermanufacturing: A Cybermanufacturing System for the Design and Fabrication of Manufacturing Equipment	47.041	33,876	-
NSF	CMMI-1547154	EAGER: Cybermanufacturing: A WYSIWYG Middleware for Additive Manufacturing	47.041	19,544	-
NSF	CMMI-1548501	EAGER: Collaborative Research: Challenging the Cognitive-Control Divide	47.041	66,817	-
NSF	CMMI-1562567	Collaborative Research: Ultrasound, oxide, and oxygen: Microscale mechanisms for next-generation alloy casting	47.041	90,579	-
NSF	CMMI-1562912	Analytical probabilistic traffic models for large-scale network optimization	47.041	47,317	-
NSF	CMMI-1563343	A Data-Driven and Real-time Approach to Personalized Bundle Recommendation and Pricing; from Theory to Practice	47.041	75,558	-
NSF	CMMI-1634259	Revenue Management For Enterprise Users of Cloud Infrastructure	47.041	100,143	-
NSF	CMMI-1644558	CM/Collaborative Research: A Computational Approach to Customizing Design	47.041	100,752	-
NSF	CMMI-1661627	Designing Extremely Robust Soft Wet Adhesives by Exploiting Molecular-Scale Reversible Crosslinks and Macro-Scale Instabilities	47.041	170,751	-
NSF	CMMI-1700582	IFAC Conference on Cyber-Physical & Human-Systems-CPHS	47.041	-1,643	-

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Federal Agency	Government Contract Number	Master Project Name	CFDA #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NSF	CMMI-1702689	Collaborative Research: Multiscale modeling and measurement of clay aggregate behavior	47.041	78,437	-
NSF	CMMI-1727189	Quasi-integral control for robustness to perturbations of integrated genetic devices in living cells for biotechnology	47.041	79,060	-
NSF	CMMI-1727239	An Optimization Framework for Optimal A-B Testing	47.041	76,437	-
NSF	CMMI-1727565	Boundary interactions in pilot-wave hydrodynamics	47.041	67,648	-
NSF	CMMI-1729304	DMREF:GOALI: Discovery and Design of Additives for Novel Polymer Morphology and Performance	47.041	59,588	-
NSF	CMMI-1752172	CAREER: Directed Epitaxial Assembly of Structural Biopolymers in Hierarchical Mesostructures for Enhanced Mechanical Behavior, Mass Transport and Heat Transfer.	47.041	4,630	-
NSF	CNS-1138967	Collaborative Research: An Expedition in Computing for Compiling Functional Physical Machines	47.070	453,521	-
NSF	CNS-1228687	TWC: Medium: Collaborative Research: Policy Compliant Integration of Linked Data	47.070	73,307	-
NSF	CNS-1239054	CPS: Frontiers: Collaborative Research: Foundations of Resillent Cyber-physical Systems (FORCES)	47.070	349,940	-
NSF	CNS-1317763	TWC: Small: Ascend: Architecture for Secure Computation on Encrypted Data	47.070	20,159	-
NSF	CNS-1347267	MIT VMS I-Corps Site	47.070	81,833	-
NSF	CNS-1350619	CAREER: Computing on Encrypted Data	47.070	283,824	-
NSF	CNS-1350685	CAREER: Practical Algorithms and Fundamental Limits for Complex Cyber-Physical Systems	47.070	112,590	-
NSF	CNS-1407470	NeTS:Medium:Collaborative Research:An App-Centric Transport Architecture for the Internet	47.070	169,695	-
NSF	CNS-1409238	CSR: Medium: Collaborative Research: FTFS: A Read/Write-optimized Fractal Tree File System	47.070	-78	-
NSF	CNS-1413905	NeTS:Large:Collaborative Research:Mapping Interconnection in the Internet: Colocation, Connectivity and Congestion	47.070	190,008	61,005
NSF	CNS-1413920	TWC: TTP Option: Frontier: Collaborative: MACS: A Modular Approach to Cloud Security	47.070	705,514	-
NSF	CNS-1413973	NeTS Large: Collaborative Research: Location-Independent Networks: Evaluation Strategies and Studies	47.070	289,236	-
NSF	CNS-1446474	CPS: Frontier: Collaborative Research: BioCPS for Engineering Living Cells	47.070	315,113	-
NSF	CNS-1513447	CSR: Medium: Collaborative Research: Fast and Simple Concurrency Through Data-Abstraction Transactions	47.070	48,917	-
NSF	CNS-1519135	EAGER:Self-Uncertainty in Mechanism Design	47.070	70,306	-

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Federal Agency	Government Contract Number	Master Project Name	CFDA #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NSF	CNS-1523546	NeTS:Small: Low Latency Scheduling for Data Centers	47.070	54,397	-
NSF	CNS-1523572	STARSS: SMALL: Trapdoor Computational Fuzzy Extractors	47.070	125,293	-
NSF	CNS-1524317	NeTS: Small: A Migration Approach to Optimal Control of Wireless Networks	47.070	133,821	-
NSF	CNS-1526791	NeTS: Small: A Programmable Network Data Plane for Resource Management in Datacenters	47.070	151,503	-
NSF	CNS-1526815	NSFSaTC-BSF: TWC: Small: Enabling Secure and Private Cloud Computing using Coresets	47.070	49,268	-
NSF	CNS-1542970	Track 2 EBP: Toward Using Virtual Identities in Computer Science Learning for Broadening Participation	47.070	212,026	-
NSF	CNS-1544413	CPS: Synergy: Collaborative Research: Design and Control of High-performance Provably-safe Autonomy-enabled Dynamic Transportation Networks	47.070	153,518	-
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	141,257	-
NSF	CNS-1563763	CSR:Medium: A high-performance certified file system and applications	47.070	247,055	-
NSF	CNS-1563826	NeTS: Medium: Collaborative Research: Language and Hardware Primitives for Programming the Data Plane in High-Speed Networks	47.070	54,584	-
NSF	CNS-1608691	Future Internet Architecture Fall 2015 Investigator Workshop	47.070	-85	-
NSF	CNS-1617487	CSR: Small: Operating Systems Kernels in High-Level Languages	47.070	158,824	-
NSF	CNS-1617702	NeTS:Small:Collaborative Research: A Fast and Flexible Transport Architecture for High Speed Networks	47.070	84,386	-
NSF	CNS-1639994	Transparency Bridges: Exploring Transparency Requirements in Smartphone Ecosystems	47.070	25,955	-
NSF	CNS-1644877	CPS: Breakthrough: Collaborative Research: . Transactive control of smart railway grid.	47.070	37,729	-
NSF	CNS-1650276	EAGER: Securing ICS Systems in the IIoT	47.070	27,069	-
NSF	CNS-1657303	CRII: CSR: End-to-End Approach to Ultra-Low Power IoT: From New Nanotechnologies to New System Architectures	47.070	139,565	-
NSF	CNS-1704172	CSR: Medium: Collaborative Research: Soup: Flexible Storage and Processing for On-Line Applications	47.070	104,529	-
NSF	CNS-1717199	NeTS: Small: Cognitive Management and Control of Agile Dynamic Optical Networks	47.070	140,991	-
NSF	CNS-1718161	NSF-BSF: Foundations of Lattice-based Cryptography	47.070	55,361	-
NSF	CNS-1730389	CI-New: Collaborative Research: Modeling the Next-Generation Hybrid Cooling Systems for High-Performance Processors	47.070	74,873	-

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Federal Agency	Government Contract Number	Master Project Name	CFDA #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NSF	CNS-1735463	CRISP Type 2: Collaborative Research: Understanding the benefits and mitigating the risks of interdependence in critical infrastructure systems	47.070	74,188	-
NSF	CNS-1739505	CPS: Small: Recover Algorithms for Dynamic Infrastructure Networks	47.RD	98,779	-
NSF	CNS-1739723	CPS: Small: Scaling Cyber-Physical Systems to the Low-Power Internet of Things	47.070	81,722	-
NSF	CNS-1743605	Free space optical network Workshop	47.070	72,018	-
NSF	DBI-1356260	Collaborative Research: ABI Innovation: BCSP: Understanding the design and usage of distributed biological networks	47.074	22,905	-
NSF	DEB-1655983	NSFDEB-BSF: Ecological networks and ecosystem function in the cow rumen microbiome: a multi-scale approach	47.074	280,004	-
NSF	DGE-1122374	Graduate Research Fellowship Program	47.076	12,980,359	-
NSF	DGE-1544234	Collaborative Research: The Role of Instructor and Peer Feedback in Improving the Cognitive, Interpersonal, and Intrapersonal Competencies of Student	47.076	7,553	-
NSF	DGE-1736899	Cambridge to Cambridge Competition Support	47.076	7,468	-
NSF	DGE-1807086	Collaborative Research: NRT-IGE: Employing Model-Based Reasoning in Environmental Science (EMBeRS)	47.076	21,684	-
NSF	DMR-1206323	Perturbed Fluctuations & Patterns	47.049	22,066	-
NSF	DMR-1207469	Investigating Two-Dimensional Systems and Surface States Under the Influence of an Internal Exchange Field and Spin-Filtering	47.049	-109	-
NSF	DMR-1253306	CAREER: Self-Assembly of Fusion Proteins to Form Biofunctional Materials	47.049	100,492	-
NSF	DMR-1307064	Structured Rigid Rod Framework Gels from Clickable Synthetic Polypeptides	47.049	22,116	-
NSF	DMR-1405221	Quantum Transport in twisted van der Waals Heterostructures	47.049	-15,032	-
NSF	DMR-1410636	Collaborative Research: Design of Low-Hysteresis High-Susceptibility Materials by Nanodomain Engineering	47.049	41,353	-
NSF	DMR-1410718	Shape Persistent, Dynamic, and Liquid Crystalline Materials for Sensor and Electronic Devices	47.049	111,001	-
NSF	DMR-1419807	NSF Materials Research Science and Engineering Centers (MRSEC) - Full Proposal	47.049	2,465,205	78,722
NSF	DMR-1452612	CAREER: Small Molecule Redox Reactivity at MOF Secondary Building Units	47.049	87,928	-
NSF	DMR-1505947	Solid-State Dewetting of Metallic Thin Films	47.049	118,370	-
NSF	DMR-1506475	Entanglement and emergence in new quantum states of matter	47.049	199,182	-

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Federal Agency	Government Contract Number	Master Project Name	CFDA #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NSF	DMR-1506605	Collaborative Research: Thin film chalcogenide glass materials for high-quality integrated photonics	47.049	66,343	-
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	152,299	-
NSF	DMR-1507806	Spectroscopic Studies on Layered Materials	47.049	180,988	-
NSF	DMR-1508072	SusChEM: Material and Morphometric Control of Bacterial Cellulose via Genetic Engineering, Post-Processing and 3D-Printed Molding	47.049	99,965	-
NSF	DMR-1509197	Collaborative Research: Nanostructured Conductive Tin Oxide for High-Efficiency Light Trapping in Thin Films and Photonic Devices	47.049	140,672	-
NSF	DMR-1522575	Physics of Strong Disorder and Correlation	47.049	80,072	-
NSF	DMR-1534340	DMREF: Collaborative Research: The Synthesis Genome: Data Mining for Synthesis of New Materials	47.049	192,023	133,540
NSF	DMR-1554891	CAREER: Geometrical Frustration in Spin Orbit Systems	47.049	82,697	-
NSF	DMR-1606911	Directed Self Assembly of Triblock Terpolymer Films	47.049	315,889	-
NSF	DMR-1606914	"Accelerated Sintering in "Nano-Duplex" Dual Phase Nanostructured Alloys	47.049	377,675	-
NSF	DMR-1608505	Novel phases of electronic insulators and quantum Hall systems	47.049	67,908	-
NSF	DMR-1645232	2016 Alan T. Waterman Award	47.049	83,778	-
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	203,656	-
NSF	DMR-1654548	CAREER: Quantifying Radiation Damage in Metals with Wigner Energy Spectral Fingerprints	47.049	218,123	-
NSF	DMR-1700137	Surface/Interface Phenomena and Topological Order in Emerging Quantum Materials	47.049	165,929	-
NSF	DMR-1708280	FORCES & FLUCTUATIONS OUT OF EQUILIBRIUM	47.049	53,796	-
NSF	DMR-1709315	Dynamics of Associative Polymers Revealed by Self-Diffusion	47.049	11,777	-
NSF	DMR-1743059	Convergence QL: NSF/DOE Quantum Science Summer School	47.049	61,668	-
NSF	DMR-1751736	CAREER: Fundamentals of complex chalcogenide electronic materials	47.049	2,786	-
NSF	DMR-1751739	CAREER: FRACTAL ELECTRONIC TEXTURES IN QUANTUM CRITICAL SOLIDS	47.049	47,625	-
NSF	DMR-1809740	Synthesis and Applications of Functional Carbon Nanomaterials	47.049	316	-
NSF	DMR-1809815	Probing Chiral Fermion Dynamics in Topological Semimetals	47.049	4,192	-
NSF	DMS-1209044	Liouville quantum gravity and conformal probability	47.049	121,467	-
NSF	DMS-1255203	CAREER: Super-Resolution and Subwavelength Imaging	47.049	85,599	-

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NSF	DMS-1312831	Applied Free Probability Theory	47.049	483,448	-
NSF	DMS-1318942	Collaborative Research: Gradient-augmented level set methods and jet schemes	47.049	606	-
NSF	DMS-1350472	CAREER: Motives: Voevodsky versus Kontsevich	47.049	72,531	-
NSF	DMS-1362326	Random and pseudorandom structures and their applications	47.049	34,442	-
NSF	DMS-1362336	Algebraic Combinatorics and its Applications	47.049	31,116	-
NSF	DMS-1362509	Dispersive partial differential equations: between a deterministic and a probabilistic approach	47.049	3,050	-
NSF	DMS-1400967	Algebraic theory of integrable systems. Representations of affine superalgebras and mock theta functions	47.049	29,850	-
NSF	DMS-1404540	Generic flows, Ricci curvature; Heegaard splittings and nodal sets	47.049	111,409	-
NSF	DMS-1406348	Instantons, low dimensional topology and knotted graphs	47.049	100,738	-
NSF	DMS-1406411	Gaussian Free Field and Conformal Loop Ensemble	47.049	6,005	-
NSF	DMS-1407562	Integrable probability and random matrices: 2d structures, limit theorems	47.049	-24	-
NSF	DMS-1408398	Mean curvature flow and geometric analysis	47.049	37,541	-
NSF	DMS-1454419	CAREER: Geometric Methods in Hyperbolic PDEs	47.049	51,071	-
NSF	DMS-1462401	FRG: Collaborative Research: Long-term dynamics of nonlinear dispersive and hyperbolic equations: deterministic and probabilistic methods	47.049	62,638	-
NSF	DMS-1500219	Extremal graph theory, graph limits, and algebraic invariants	47.049	31,159	-
NSF	DMS-1500771	Free boundaries and extremal inequalities	47.049	48,434	-
NSF	DMS-1500954	Lefschetz Fibrations, Mapping Tori, and Dynamics on Moduli Spaces of Objects	47.049	106,988	-
NSF	DMS-1502244	Tensor categories and representation theory	47.049	119,152	-
NSF	DMS-1510305	Flexibility in symplectic and contact geometry	47.049	16,067	-
NSF	DMS-1512925	Three-Dimensional Nonlinear Internal Wave Beams: Mathematical Models and Laboratory Experiments	47.049	200,503	-
NSF	DMS-1517842	Collaborative Research: From Biology to Mechanism: Harnessing Compliance in Locomoting Systems	47.049	66,811	-
NSF	DMS-1519580	PRIMES: Program for Research In Mathematics, Engineering, and Science for high school Students	47.049	82,965	-
NSF	DMS-1521765	Collaborative Research: Computational methods for ultra-high sensitivity magnetometry of geological samples	47.049	29,577	-
NSF	DMS-1522526	Computational methods in arithmetic geometry	47.049	40,241	-
NSF	DMS-1541100	Statistical and Computational Tradeoffs in High Dimensional Learning	47.049	83,259	-

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NSF	DMS-1564458	FRG: COLLABORATIVE RESEARCH: CROSSING THE WALLS IN ENUMERATIVE GEOMETRY	47.049	102,217	-
NSF	DMS-1566618	Mathematical Sciences: Geometric methods in the representation theory of affine Hecke algebras, finite reductive groups and character sheaves	47.049	29,447	-
NSF	DMS-1600375	Quantum algebras, quiver varieties and applications	47.049	63,791	-
NSF	DMS-1601946	Topics in arithmetic geometry	47.049	64,578	-
NSF	DMS-1601953	Wall-crossing and dualities in representation theory	47.049	136,519	-
NSF	DMS-1607901	Integrable probability	47.049	95,224	-
NSF	DMS-1608018	Constructions in higher-dimensional contact topology	47.049	37,312	-
NSF	DMS-1614043	Collaborative Research: Walking droplet interactions and stability	47.049	113,710	-
NSF	DMS-1645082	Enumerative geometry of moduli spaces and applications	47.049	-686	-
NSF	DMS-1651995	CAREER: Gaussian Graphical Models: Theory, Computation, and Applications	47.049	100,583	-
NSF	DMS-1664317	Geometry and representation theory	47.049	2,073	-
NSF	DMS-1664412	FRG: cQIS: Collaborative Research: Mathematical Foundations of Topological Quantum Computation and its applications	47.049	1,544	-
NSF	DMS-1664619	FRG: Collaborative Research: Integrable Probability	47.049	141,659	-
NSF	DMS-1700127	Dynamics of nonlinear wave equations	47.049	72,935	-
NSF	DMS-1700338	The Probabilistic Method in Combinatorics	47.049	44,666	-
NSF	DMS-1707270	Mean Curvature Flow and Nonlinear Heat Equations	47.049	58,513	-
NSF	DMS-1707857	Gauge theory, Floer homology and invariants of low-dimensional manifolds	47.049	63,693	-
NSF	DMS-1711053	Min-max problems for families of cycles in Riemannian manifolds	47.049	36,736	-
NSF	DMS-1712596	Collaborative Research: Statistical Estimation with Algebraic Structure	47.049	58,690	-
NSF	DMS-1712862	Universal randomness in 2D	47.049	26,888	-
NSF	DMS-1719637	Collaborative Research: Overcoming order reduction and stability restrictions in high-order time-stepping	47.049	17,400	-
NSF	DMS-1723011	Collaborative Research: CDS&E-MSS: Stochastic Approximations for the Solution and Uncertainty Analysis of Data-Intensive Inverse Problems	47.049	41,252	-
NSF	DMS-1727545	Symplectic Geometry Workshop at the Isaac Newton Institute	47.049	29,418	-
NSF	DMS-1737944	Algorithms for anomaly detection using graphical models	47.049	16,000	-
NSF	DMS-1764454	Problems related to Fourier restriction estimates	47.049	16,136	-
NSF	DMS-1810638	Motivic homotopy theory, stable homotopy groups of spheres and the Kervaire invariant	47.049	3,129	-

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Federal Agency	Government Contract Number	Master Project Name	CFDA #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NSF	DMS-1811267	Non-compact solutions to geometric flows	47.049	12,131	-
NSF	DMS-1821177	Graduate Workshop in Algebraic Geometry for Women and Mathematicians of Minority Genders	47.049	7,623	-
NSF	DRL-1223256	Collaborative Research: Broad Implementation of Science Festival Alliance	47.076	-5,842	-
NSF	DRL-1418122	Collaborative Research: Revealing the Invisible: Data-Intensive Research Using Cognitive, Psychological, and Physiological Measures to Optimize STEM Learning	47.076	50,079	-
NSF	DRL-1508911	Collaborative Research: Building Enhanced Scientific Thinking through Modeling Ecosystems	47.076	140,336	-
NSF	DRL-1614548	Collaborative Research: WAVES: A STEM-Powered Youth News Network for the Nation	47.076	178,174	-
NSF	DRL-1639069	DRK-12 Teachers with GUTS (PI Irene Lee)	47.076	695,821	4,475
NSF	DRL-1644540	Neurocognitive underpinnings of dyslexia and dyscalculia	47.076	318,770	126,814
NSF	DRL-1723459	EAGER: MAKER: Collaborative: Beyond Rubrics: Moving Towards Embedded Assessment in Maker Education	47.076	108,603	27,754
NSF	DUE-1122616	Development and evaluation of StarCellBio: a cell biology experiment simulator for science education	47.076	43,800	-
NSF	DUE-1503793	Discovery-Based Student Learning with the Haystack 37-m Radio Telescope	47.076	49,272	13,562
NSF	DUE-1505007	Collaborative Research: Liberal Studies in Engineering - Broadening the Path to the Profession: Feasibility Study	47.076	3,120	-
NSF	DUE-1644533	I-Corps L to discover a sustainable model that will support and scale BioBuilder's curriculum and teacher professional development activities	47.076	-928	-
NSF	DUE-1646976	Collaborative Research: Framing Learning for MOOC Student Success	47.076	86,340	-
NSF	DUE-1709359	Collaborative Research: Student Produced Audio Narratives (SPAN)	47.076	22,183	-
NSF	DUE-1734870	NCS-FO: Collaborative Research: Ground-Truth Analysis and Modeling of Entire Individual C. elegans Nervous Systems	47.076	213,634	-
NSF	DUE-1740143	Collaborative Proposal: Directed Reading Program Network	47.076	6,368	-
NSF	EAR-1321889	Influence of Titanium on Water Incorporation, Rheology and Seismic Properties of Olivine	47.050	-1	-
NSF	EAR-1321952	Collaborative Research: Early earth evolution: Hf and Nd isotopic constraints from the ca 3.4--4.0 Ga Acasta Gneisses	47.050	-1,416	-
NSF	EAR-1322032	A field study of the liquid line of descent of hydrous alkaline-rich magmas at elevated pressures (0.5-1.0 GPa): the Dariv alkaline intrusive complex	47.050	-1,880	-

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Federal Agency	Government Contract Number	Master Project Name	CFDA #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NSF	EAR-1361319	CSEDI Collaborative Research: Grand Challenge for Experimental Study of Plastic Deformation Under Deep Earth Conditions	47.050	69,671	-
NSF	EAR-1404414	Collaborative Research: Deep Drilling of Lake Junin, Peru: Continuous Tropical Records of Glaciation, Climate Change and Magnetic Field Variations Spanning the Late Quaternary	47.050	18,828	-
NSF	EAR-1411552	Collaborative Research: Toward a global timeline of biological and ocean geochemical change during the early Cambrian	47.050	142,768	-
NSF	EAR-1414499	Sediment Transport in Vegetated Channels: Evaluating the Roles of Mean Bed Stress and Turbulent Impulse	47.050	133,786	-
NSF	EAR-1419822	Collaborative Research: Quantifying Laurentia's Motion, Advancing Paleogeography and Constraining Rifting with New Paired Dates and Paleomagnetic Data from the Midcontinent Rift	47.050	1,872	-
NSF	EAR-1424892	High-precision U-Pb zircon geochronology and intracontinental correlation of terrestrial ecosystems during the zenith of dinosaur diversity in the Late Campanian of North America	47.050	57,699	-
NSF	EAR-1434138	Collaborative Research: Reconstructing interactions between the East Asian Monsoon and Westerly Jet at multiple timescales via the flux and provenance of eolian and fluvial supply	47.050	11,512	-
NSF	EAR-1439559	Early Career: Technical support for a uranium-series isotope geochemistry laboratory focused on Earth's climate and surface processes	47.050	72,724	-
NSF	EAR-1450922	New GPS Constraints on Africa-Arabia-Eurasia Plate Kinematics	47.050	3,713	-
NSF	EAR-1451022	Evolution of Microstructure and Creep Strength of Marble	47.050	116,317	-
NSF	EAR-1464024	Colaborative Research: Anelastic properties of the Earth from seismic to tidal timescales	47.050	89,102	-
NSF	EAR-1520762	Collaborative Research: Changes in river-aquifer exchange induced by groundwater pumping, and their effect on arsenic contamination in the Red River Delta, Vietnam	47.050	68,593	-
NSF	EAR-1520825	Hazards SEES: Uncovering the hidden skeleton of environmental flows: advanced Langrangian methods for hazards prediction, mitigation and response	47.050	121,491	-
NSF	EAR-1521534	Robust earthquake source scaling and seismic efficiency for intermediate-depth and deep earthquakes at global and regional scales.	47.050	35,278	-
NSF	EAR-1551321	ABR: Experimental Studies of Hydrous Mantle Melting	47.050	69,538	-
NSF	EAR-1551753	Collaborative Research: A Community Velocity Field for East Africa	47.050	37,485	-
NSF	EAR-1552202	Processes and Rates of Arc Crust Growth and Differentiation in the Southern Sierra Nevada Crustal Section	47.050	115,990	-

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Federal Agency	Government Contract Number	Master Project Name	CFDA #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NSF	EAR-1615426	Collaborative Research: Integrating the geological and genomic records: time-calibrating Earth's dynamic biogeochemical history	47.050	323,685	-
NSF	EAR-1622560	Collaborative Research: GeoGONAF: Analysis of active deformation and strain transfer along the Izmit Bay-Marmara Sea segment of the North Anatolian Fault	47.050	53,776	-
NSF	EAR-1647504	INSPIRE: Search for Records of the Hadean Dynamo in Detrital Zircons	47.050	423,004	212,391
NSF	EAR-1659923	Predictive Models for Wave Damping by Flexible Aquatic Vegetation	47.050	104,458	-
NSF	EAR-1702588	Collaborative Research: Quantifying precipitation changes in the South American subtropics over the late Pleistocene	47.050	52,274	-
NSF	EAR-1722935	Collaborative Research: Relating bulk composition to seismic properties in crustal rocks	47.050	74,132	-
NSF	ECCS-1135843	CPS:Medium:Collaborative Research:Smart Power Systems of the Future:Foundations for Understanding Volatility and Improving Operational Reliability	47.041	48,669	-
NSF	ECCS-1408172	Spin-Orbitronics: Interfacial Design of Spintronic Materials and Devices	47.041	-77,081	-
NSF	ECCS-1408495	Integrated Photonics for Trapped Ion Quantum Information Processing	47.041	-46,477	-
NSF	ECCS-1449291	SNM: Knowledge-based Continuous and Scalable Manufacture of Quantum Dots	47.041	267,807	-
NSF	ECCS-1453218	CAREER: Glass-Based Fexible Integrated Photonic Devices	47.041	159,266	-
NSF	ECCS-1505733	Development of THz laser frequency combs	47.041	7,118	-
NSF	ECCS-1509486	Collaborative Research: Understanding and Engineering Timing Jitter of Superconducting-Nanowire Single Photon Detectors	47.041	55,849	-
NSF	ECCS-1532591	NCS-FO: Algorithmically explicit neural representation of visual memorability	47.041	233,579	-
NSF	ECCS-1550015	EAGER: Renewables: Market Designs for Distribution Systems with High Renewable Penetration	47.041	25,080	-
NSF	ECCS-1554171	CAREER: Computational toolbox for improved security of power systems	47.041	142,600	-
NSF	ECCS-1607865	Monolithic magneto-optical isolators for on-chip photonic integration	47.041	201,607	-
NSF	ECCS-1609240	Collaborative Research: Advances in High-Frequency Magnetics for High-Efficiency, High-Density Power Electronic Systems	47.041	78,216	-
NSF	ECCS-1610806	Collaborative Research: Electrochemically driven Mechanical Energy Harvesting	47.041	50,023	-
NSF	ECCS-1639921	E2CDA: Type II: Memory, Logic, and Logic in Memory Using Three Terminal Magnetic Tunnel Junctions	47.041	213,453	-

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Federal Agency	Government Contract Number	Master Project Name	CFDA #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NSF	ECCS-1644588	EAGER: Theoretic Structures of High Dimensional Data Decomposition	47.041	111,242	-
NSF	ECCS-1653100	CAREER: On-Chip Terahertz Electronic Frequency Combs	47.041	122,330	-
NSF	ECCS-1653553	CAREER: Spin-Orbit Interaction based Spintronics in Superconductors	47.041	115,987	-
NSF	ECCS-1702716	Spectroscopy with Quantum Sensors at the Nanoscale	47.041	72,063	-
NSF	ECCS-1709212	Collaborative Research: Conformal and robust integrated infrared spectroscopic sensors	47.041	47,843	-
NSF	ECCS-1711027	CCSS: Small : Universal Feature Selection in Integrated Monitoring of Large Networks	47.041	133,378	-
NSF	ECCS-1742069	LIDS/IDSS Workshop on Smart URban Infrastructures (SURI)	47.041	20,362	-
NSF	ECCS-1743938	EAGER: Feedback optimization of dynamic nonlinear signal processing systems	47.041	82,701	-
NSF	ECCS-1745547	Spatially Continuous Modeling of Power System Oscillations with Renewable Energy Penetration	47.041	61,030	-
NSF	ECCS-1808828	Electrical switching of magnetic devices by voltage-controlled proton insertion for low-power, high-performance data storage and computing	47.041	42,360	-
NSF	EF-1137306	Type 2: The Future of Ecosystems and Extremes: Using Diverse Environmental Data Sets in Support of Regional to Global Earth□System Models and Predictions	47.074	525,673	451,013
NSF	EFMA-1641064	EFRI ACQUIRE: Scalable Quantum Communications with Error-Corrected Semiconductor Qubits	47.041	1,081,759	698,566
NSF	EFRI-1240383	EFRI-ODISSEI: Programmable Origami for Integration of Self-Assembling Systems in Engineered Structures	47.041	136,465	2,966
NSF	EFRI-1441301	RIPS Type 2: Collaborative Research: Towards resilient computational models of electricity-gas ICI	47.041	236,131	-
NSF	IIP-1640678	A Platform for High Throughput Genetic Transformation of Bacteri	47.041	59,151	-
NSF	IIP-1644771	Microfluidic device for investigation of mineral/liquid interactions	47.041	1,899	-
NSF	IIP-1646947	I-Corps: Improving Acoustophoretic-based Cell Sorting Technologies	47.041	29,211	-
NSF	IIP-1649058	I-Corps: Application Development for Graphene Oxide Nanofiltration Membranes	47.041	1,182	-
NSF	IIP-1661441	I-Corps: An Accurate and Accessible Indoor Positioning Technology	47.041	112	-
NSF	IIP-1717362	PFI:BIC - Development, Deployment and Evaluation of an Intelligent Service System for Personalized Early Literacy Learning Using Mobile Devices	47.041	17,833	-
NSF	IIP-1735671	Type II: MIT Innovation Corps Site	47.041	29,484	-

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Federal Agency	Government Contract Number	Master Project Name	CFDA #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NSF	IIP-1738283	I-Corps: Mobile Augmented Reality	47.041	23,387	-
NSF	IIP-1741052	I-Corps : Point-of-Care Physiological Assessment via Exhaled Air Analysis	47.041	21,644	-
NSF	IIP-1741564	I-corps: An Objective Clinical Machine Learning Imaging Technology	47.041	24,078	-
NSF	IIP-1818795	I-Corps Teams: Improving the Energy Efficiency of Transport Refrigeration Units	47.041	29,459	-
NSF	IIP-1820773	I-Corps Teams: Machine Learning Algorithms and Tools for Analysis and Optimization of Infrastructure	47.041	40,265	-
NSF	IIP-1821020	I-Corps Team: A Photonic Crystal Enabled Thermophotovoltaic Portable Power Generator	47.041	20,334	-
NSF	IIP-1821856	I-Corps: Organ-on-a-Chip Technology for Pharmaceutical Testing	47.041	34,686	-
NSF	IIS-1053398	CAREER Digital Privacy and Regulation	47.070	3,263	-
NSF	IIS-1161731	CGV: Medium: Collaborative Research: Understanding Translucency: Physics, Perception, and Computation	47.070	28,558	-
NSF	IIS-1161909	RI: Medium: Collaborative Research: Hybrid Unmanned Aerial Vehicles that Interact with Surfaces	47.070	22,049	-
NSF	IIS-1212849	RI: Large: Collaborative Research: Reconstructive recognition: Uniting statistical scene understanding and physics-based visual reasoning	47.070	28,290	-
NSF	IIS-1226883	NRI-Large: Collaborative Research: Soft Compliant Robotic Augmentation for Human-Robot Teams	47.070	274,206	-
NSF	IIS-1227504	Collaborative Research: NRI-Large: Purposeful Prediction: Co-robot Interaction via Understanding Intent and Goals	47.070	14,734	-
NSF	IIS-1237136	SHB:Type II (INT): Collaborative Research: Algorithmic Approaches to Personalized Health Care	47.070	53,479	-
NSF	IIS-1248066	INSPIRE: Kreyol-based Cyberlearning for a New Perspective on the Teaching of STEM in local Languages	47.070	60,147	-
NSF	IIS-1317445	NRI:Small:Collaborative Research: Adaptive Motion Planning and Decision-Making for Human-Robot Collaboration in Manufacturing	47.070	3,730	-
NSF	IIS-1318215	HCC:Small:Thermal Displays in Human Computer Interactions	47.070	8,836	-
NSF	IIS-1348911	INDP: Collaborative Research: Coding for All: Interest-Driven Trajectories to Computational Fluency	47.070	-1,046	-
NSF	IIS-1350160	CAREER: Human-Aware Autonomy for Team-Oriented Environments	47.070	14,304	-
NSF	IIS-1350879	CAREER: Gait Transition Principles in Quadruped Robots	47.070	-69,235	-
NSF	IIS-1404494	SCH: EXP: Collaborative Research: THink - Inferring Cognitive State From Subtle Behaviors	47.070	168,622	5,383

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Federal Agency	Government Contract Number	Master Project Name	CFDA #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NSF	IIS-1405259	NRI-Small: Improved safety and reliability of robotic systems by faults/anomalies detection from uninterpreted signals of computation graphs	47.070	0	-
NSF	IIS-1409310	CHS: Medium: Collaborative Research: Computational Design and 3D Printing of Textiles	47.070	17,392	-
NSF	IIS-1420316	RI: Small: A Systematic Approach to Robot Task and Motion Planning in Belief Space	47.070	305,992	-
NSF	IIS-1421065	RI: Small: Enabling robust visual intelligence using propagators to model human competence	47.070	75,113	-
NSF	IIS-1427050	NRI: Collaborative: Efficient Algorithms for Contact-Aware State Estimation	47.070	188,540	-
NSF	IIS-1427547	NRI: Collaborative: Modeling and Verification of Language-based Interaction	47.070	49,997	17,792
NSF	IIS-1447476	BIGDATA: F: DKA: Collaborative Research: Structured Nearest Neighbor Search in High Dimensions	47.070	9,216	-
NSF	IIS-1447786	BIGDATA: IA: DKA: Collaborative Research: High-Thoughput Connectomics	47.070	127,760	-
NSF	IIS-1453141	CAREER: Advances in Monitoring Human Performance: Moving Wearable Technology from the Expert to Nonexpert User	47.070	98,334	-
NSF	IIS-1513443	III: Medium: Collaborative Research:DataHub - A Collaborative Dataset Management Platform for Data Science	47.070	103,303	-
NSF	IIS-1523118	EXP: Collaborative Research: A Personalized Storyteller Companion to Promote Preschooler Language Skills	47.070	218,961	-
NSF	IIS-1523767	NRI: Learning to Plan for New Robot Manipulation Tasks	47.070	300,031	-
NSF	IIS-1524427	RI: Small: Theory and Algorithms for Learning Perturbation Model	47.050	153,016	-
NSF	IIS-1524817	RI: Small: Advancing Visual Recognition with Feature Visualizations	47.070	68,976	-
NSF	IIS-1527181	RI: Small: Time Resolved Imaging: New Methods for Capture, Analysis and Applications	47.070	103,736	-
NSF	IIS-1546290	BIGDATA: Collaborative Research: F: Making Big Data Accessible on Personal Computers: Big Network Algorithms and Data Streams	47.070	139,229	-
NSF	IIS-1551535	EAGER: Inferring Mechanical Explanations from Manipulation Demonstrations	47.070	9,412	-
NSF	IIS-1553284	CAREER: Scalable learning with combinatorial structure	47.070	97,023	-
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	190,325	-

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Federal Agency	Government Contract Number	Master Project Name	CFDA #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NSF	IIS-1607486	US-German Research Proposal: Neurocomputation in the Visual Periphery: Experiments and Models	47.070	175,216	-
NSF	IIS-1617403	CHS : Small: Creating versatile vibrotactile displays	47.070	231,498	-
NSF	IIS-1636766	BD Spokes: SPOKE: NORTHEAST: Collaborative: A Licensing Model and Ecosystem for Data Sharing	47.070	132,431	-
NSF	IIS-1637753	NRI: Collaborative Research: Accelerating Robotic Manipulation with Data-Enhanced Contact Mechanics	47.070	161,731	-
NSF	IIS-1637824	NRI: Collaborative Research: Towards Robots with Human Dexterity	47.070	168,880	-
NSF	IIS-1651190	EAGER: Linguistic Event Extraction and Integration (LEXI): A New Approach to Speech Analysis	47.070	105,398	-
NSF	IIS-1716413	CHS: Small: An Integrated Editing Environment for 3D Printing	47.070	109,432	-
NSF	IIS-1718258	III:Small:A New Perspective on Grouped Variable Selection via Modern Optimization	47.070	13,952	-
NSF	IIS-1723381	S&AS:INT: Integrated Reasoning, Planning and Acting for Household Robots	47.070	9,000	-
NSF	IIS-1723943	S&AS: INT: COLLAB: Autonomy as a Service	47.070	27,132	-
NSF	IIS-1729931	Collaborative Research: Computational Photo-Scatterography: Unraveling Scattered Photons for Bio-imaging	47.070	7,057	-
NSF	IIS-1733809	Summer School on Cognitive Robotics	47.070	4,354	-
NSF	IIS-1734443	NRI: INT: COLLAB: Development, Deployment and Evaluation of Personalized Learning Companion Robots for Early Literacy and Language Learning	47.070	22,474	-
NSF	IIS-1738247	III: NSF Student Travel Grant for 2017 International Semantic Web Conference (ISWC 2017)	47.070	25,524	-
NSF	IIS-1741137	BIGDATA: F: Testing high dimensional distributions without the curse of dimensionality	47.070	382,417	-
NSF	IIS-1741341	BIGDATA: F: Collaborative Research: Towards automating data analysis: interpretable, interactive, and scalable learning via discrete probability	47.070	56,961	-
NSF	IIS-1744809	Collaborative Research: The cognitive and neural mechanisms of computer programming in young children: storytelling or solving puzzles?	47.070	95,541	-
NSF	IIS-1745122	NSF NRI 2017 PI Meeting	47.070	115,153	-
NSF	IIS-1745125	CAREER: Exact Algorithms for Learning Latent Structure	47.070	54,371	-
NSF	IIS-1750286	CAREER: Robust, scalable, reliable machine learning	47.070	8,966	-
NSF	IOS-1451202	BRAIN EAGER: Cell-type-specific optogenetics in wild-type animals	47.074	10,805	-

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Federal Agency	Government Contract Number	Master Project Name	CFDA #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NSF	IOS-1645061	IOS EDGE: Development of genetic tools for the dominant phototroph in the sea	47.074	281,989	-
NSF	MCB-1350625	CAREER: Deciphering and Engineering Biological State Machines with Synthetic Biology	47.074	104,786	-
NSF	MCB-1517913	Development and Analysis of Autonomous Metabolite Valves	47.074	88,929	-
NSF	MCB-1615252	Collaborative research: Development of a platform enabling analysis of membrane protein interactions	47.074	4,157	-
NSF	MCB-1652390	CAREER: Integrating Chem. Biology Methods & RNA Virus Models to Elucidate How the Metazoan Proteostasis Ntwk Modulates Protein Evolutionary Landscapes	47.074	195,305	-
NSF	MCB-1715859	Breaking the Histone Code: Predicting Genome Organization with Chromatin States	47.074	155,893	-
NSF	MCB-1745645	Collaborative Research: EAGER: Dynamically Customized Cancer Immunotherapy Guided by Live Cell, Genetically Encoded, Tumor Sensors	47.074	61,837	-
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	79,722	-
NSF	OCE-1048926	Collaborative Research Type 2 - MOBY: Modeling Ocean Variability and Biogeochemical Cycles	47.050	90,810	-
NSF	OCE-1153588	Nitrate assimilation and the ecology of Prochlorococcus: Features and implications of intraspecific diversity in a model marine phototroph	47.050	55,515	-
NSF	OCE-1233832	Collaborative Research: Diagnosing Eddy mixing in DIMES	47.050	33,410	-
NSF	OCE-1315201	Collaborative Research: Ocean Acidification: Impacts of Evolution on the Response of Phytoplankton Populations Rising CO2	47.050	175,912	-
NSF	OCE-1338814	FESD Type 1:The impact of the ozone hole on the climate of the Southern Hemisphere	47.050	757,720	489,710
NSF	OCE-1356460	Membrane vesicles produced by marine bacteria: origins, distributions, and functions	47.050	121,491	-
NSF	OCE-1434007	Size structure and function of phytoplankton communities in a changing ocean	47.050	147,582	-
NSF	OCE-1435993	Collaborative Research: How can bacterial viruses succeed in the marine environment?	47.050	-36	-
NSF	OCE-1457916	Collaborative Research: Developing a New Model to Investigate the Dynamics of Melt Generation beneath Mid-Ocean Ridges	47.050	875	-
NSF	OCE-1459287	Collaborative Research: GEOTRACES Arctic section: Spatial variability of lead concentrations and isotopic compositions in the western Arctic basins	47.050	128,578	-
NSF	OCE-1459702	Theoretical studies of eddy mixing	47.050	125,241	-

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Federal Agency	Government Contract Number	Master Project Name	CFDA #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
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	3,276	-
NSF	OCE-1536515	Collaborative Research: An Ocean Tale of Two Climates: Modern and Last Glacial Maximum	47.050	101,899	-
NSF	OCE-1536521	Collaborative Research: Elucidating Algal Host-virus Dynamics in Different Nutrient Regimes-Mechanistic Interactions and Biogeochemical Impact	47.050	85,981	-
NSF	OCE-1558702	Collaborative Research: Predicting the Spatiotemporal Distribution of Metabolic Function in the Global Ocean	47.050	34,611	-
NSF	OCE-1658451	Microbial interactions on particulate organic matter: from community structure to function.	47.050	218,457	-
NSF	OCE-1736109	Collaborative Research: Deep Circulation over the Flanks of a Mid-Ocean Ridge	47.050	87,203	-
NSF	OCE-1736996	Collaborative Research: US GEOTRACES PMT: Pb and Cr isotopes	47.050	143,717	-
NSF	OCI-1147503	SI2-SSI Collaborative Research: A Computational Materials Data and Design Environment.	47.080	-7,041	-
NSF	OIA-1231216	A Center for Brains, Minds, and Machines: The Science and the Technology of Intelligence	47.070	42,511	-
NSF	OPP-1542950	Development of an air-droppable geodetic-seismic ice penetrator for response studies of Antarctic ice shelves and icebergs to ocean forcings	47.050	27,890	-
NSF	PHY-1125846	Center for Ultracold Atoms	47.049	679,296	403,698
NSF	PHY-1201896	Collaborative Research: Understanding Turbulent Mixing in Laboratory Magnetospheres	47.049	813	-
NSF	PHY-1205554	Atomic Ensembles Entangled by Light for Measurements Below the Standard Quantum Limit	47.049	-34	-
NSF	PHY-1305537	Inferring the Physics of Living Systems from Dynamic Light Microscopy Data	47.049	53,695	-
NSF	PHY-1403261	Strong-gravity binary phenomenology and gravitational-wave astronomy	47.049	3,740	-
NSF	PHY-1404245	Quantum Optomechanics on Multiple Mass Scales	47.049	81,290	-
NSF	PHY-1415345	Spin Polarization and Transport at the Nanoscale	47.049	48,698	-
NSF	PHY-1415514	Dynamic Decoupling and Noise Characterization in Superconducting Qubits	47.049	72,626	-
NSF	PHY-1433156	Collaborative Research: Construction of the Upstream Tracker for the LHCb Upgrade	47.049	-20,935	-
NSF	PHY-1437402	MRI Consortium: Collaborative Research: Development of the Phase-I DarkLight Experiment at Jefferson Laboratory	47.049	10,637	7,750

Appendix A1
Massachusetts Institute of Technology
Federal Research Support - On Campus
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Federal Agency	Government Contract Number	Master Project Name	CFDA #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NSF	PHY-1454673	CAREER: SELECTIVE TRANSPORT IN BIOLOGICAL HYDROGELS - FROM DESIGN PRINCIPLES TO MECHANISMS	47.049	179,971	-
NSF	PHY-1504942	Physics of Chromosomes	47.049	214,885	-
NSF	PHY-1505678	New Experimental Techniques for Neutrino Experiments	47.049	106,051	-
NSF	PHY-1505855	The EPP-Supported Neutrino Program at MIT	47.049	258,641	-
NSF	PHY-1505858	The PA-Supported Neutrino Program at MIT	47.049	292,272	-
NSF	PHY-1505862	Entangled States of Light and Atoms for Measurements Below the Standard Quantum Limit	47.049	122,362	-
NSF	PHY-1506019	Strongly Interacting Fermi Gases of Ultracold Atoms	47.049	75,642	-
NSF	PHY-1506369	A Program in Ultralow-Temperature Atomic Physics	47.049	431,959	-
NSF	PHY-1541160	INSPIRE: Testing Bell's Inequality with Astrophysical Observations	47.049	173,087	149,002
NSF	PHY-1554875	Career: Next-Generation Liquid Scintillator Detectors: Picosecond Timing and Quantum-Dot-Doped Scintillator	47.049	198,474	105,334
NSF	PHY-1607225	Searching for physics beyond the Standard Model at the LHCb Experiment	47.049	128,083	-
NSF	PHY-1620045	Research in Theoretical Elementary Particle Physics	47.049	8,671	-
NSF	PHY-1626069	MRI: Development of the IsoDAR Front-End	47.049	84,883	-
NSF	PHY-1654168	CAREER: Magnetogenesis Revisited: The First Self-consistent Plasma Dynamo	47.049	109,774	-
NSF	PHY-1658693	EAGER: A Broadband Approach to Cosmic Axion Detection	47.049	71,363	-
NSF	PHY-1707549	Studies of strong-gravity binaries and their gravitational waves	47.049	74,218	-
NSF	PHY-1707700	Proposal for funding to cover travel costs for participants in the "Table Top Experiments with Skyscraper Reach" workshop at MIT in the summer of 2017	47.049	4,480	-
NSF	PHY-1707840	Quantum Optomechanics on Multiple Mass Scales	47.049	164,600	-
NSF	PHY-1707999	Inferring the Physics of mRNA Trafficking in Neuronal Systems	47.049	4,024	-
NSF	PHY-1720311	Dynamical decoupling, error mitigation and noise correlations in multi-qubit systems	47.049	48,364	-
NSF	PHY-1734011	Center for Ultracold Atoms	47.049	2,021,473	1,182,001
NSF	PHY-1743900	RAISE: A phase separation model for transcriptional control in mammals	47.049	185,201	151,941
NSF	PHY-1801996	The EPP-Supported Neutrino Program at MIT	47.049	55,798	-
NSF	PHY-1806684	Support for the 'Beyond Standard Model Physics with Driven Neutrino Sources' Workshop at MIT	47.049	4,831	-
NSF	PLR-1503966	Collaborative Research: The combined influence of sea ice and snow cover on Northern Hemisphere atmospheric climate variability	47.050	53,322	-

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Massachusetts Institute of Technology
Federal Research Support - On Campus
FY 2018 Expenditures

Federal Agency	Government Contract Number	Master Project Name	CFDA #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NSF	PLR-1542950	Development of an air-droppable geodetic-seismic ice penetrator for response studies of Antarctic ice shelves and icebergs to ocean forcings	47.050	46,631	-
NSF	PLR-1543366	Dynamics of the Antarctic Seasonal Ice Zone	47.050	253,271	-
NSF	PLR-1603557	Collaborative Research: Quantifying the Residual Circulation of the Arctic Ocean	47.050	176,665	-
NSF	PLR-1607968	Collaborative Research: Speleothem records of permafrost thaw and paleoclimate in the North American Arctic	47.050	16,807	-
NSF	PLR-1643761	Collaborative Research: Monitoring Antarctic Ice Sheet Changes with Ambient Seismic Noise Methods	47.050	141,652	-
NSF	SES-1155143	Collaborative Research: The American Mass Public in the Early Cold War Years	47.075	35,570	-
NSF	SES-1260744	Intermediation, Information, and Diversity In Networks	47.075	-214	-
NSF	SES-1427231	Demand Analysis for Matching Markets	47.075	38,066	-
NSF	SES-1528487	Collaborative Research: A New Design for Identifying Persuasion Effects and Selection in Media Exposure Experiments via Patient Preference Trials	47.075	140,551	-
NSF	SES-1555071	CAREER: Dynamic Games and Institutions	47.075	50,945	-
NSF	SES-1558205	Choice, Learning and Equillibrium	47.075	38,843	-
NSF	SES-1559172	Collaborative Research: Inference Methods for Machine Learning and High-Dimensional Data in Policy Evaluation and Structural Economic Models	47.075	18,282	-
NSF	SES-1559367	Experimental Evidence of the Effectiveness of Mechanisms Designed to Increase Tax Compliance	47.075	921	-
NSF	SES-1643517	Dynamic Choice in an Uncertain World	47.075	751	-
NSF	SES-1655060	Doctoral Dissertation Research: Making a Digital Working Class: A Multi-Method Comparative Study of Uber Drivers	47.075	6,024	-
NSF	SES-1655089	Doctoral Dissertation Research: Mathematics, Aesthetics, and Modernism in America	47.075	3,501	-
NSF	SES-1655605	Doctoral Dissertation Research: A Portrayal of the Pedagogy and Practice of Field Schools in American Anthropology as Anthropological Laboratories	47.075	4,596	-
NSF	SES-1725235	Policy as a Private Good: Firm-Lobbyist-Politician Networks in the Legislative Process	47.075	77,755	-
NSF	SES-1757198	Information, Attention, and Coordination in Macroeconomics	47.075	9,010	-
NSF	SES-1757199	Inferences in Factor Pricing Models with Many Assets	47.075	23,932	-
NSF	SMA-1415129	SEES Fellowship - PDF - S. Pattinson	47.075	38,610	-
NSF	SMA-1733545	Workshop: Innovation, Cities, and the Future of Work	47.075	26,009	-

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Massachusetts Institute of Technology
Federal Research Support - On Campus
FY 2018 Expenditures

Federal Agency	Government Contract Number	Master Project Name	CFDA #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NSF	SMA-1740363	Science Policy Research Report: Employee Non-compete Agreements	47.075	1,157	-
NSF	SMA-1757344	Mapping the Inventor Gender Gap: Analyzing Regional & Organization Variation in the Inclusivity of the Innovation Economy	47.075	16,322	-
NSF	SMMI-1346638	CAREER: High-Speed Continuous Assembly of Nanoparticle Monolayers and Discrete Cluster Arrays	47.041	24,458	-
		Total for National Science Foundation		**81,406,863**	**9,198,801**
		TOTAL for National Science Foundation		**81,406,863**	**9,198,801**
		TOTAL Federal Research Support - On Campus		**378,358,462**	**51,179,792**

Appendix A-2
Massachusetts Institue of Technology
Schedule of Expenditures of Federal Awards - Lincoln Laboratory
By Sponsor & Contract - FY 2018

Sponsor	Contract Number	Program Name	CFDA #	Total $ Amount Expended	$ Amount Passed to Subrecipients
DEPARTMENT OF DEFENSE					
AIR FORCE	FA8721-05-C-0002		12.RD	$ 19,167,091	$ 5,178,677
	FA8702-15-D-0001		12.RD	260,206,668	19,253,278
ARMY	FA8721-05-C-0002		12.RD	5,913,446	1,698,649
	FA8702-15-D-0001		12.RD	39,814,026	1,065,144
CLASSIFIED	FA8721-05-C-0002		12.RD	4,803,203	351,096
	FA8702-15-D-0001		12.RD	176,532,728	23,692,791
DEFENSE ADVANCED RESEARCH PROJECT AGENCY	FA8721-05-C-0002		12.RD	4,671,337	72,045
	FA8702-15-D-0001		12.RD	20,020,759	249,401
MISSILE DEFENSE AGENCY	FA8721-05-C-0002		12.RD	1,771,518	1,178,119
	FA8702-15-D-0001		12.RD	71,856,324	2,843,739
NATIONAL SECURITY AGENCY	FA8721-05-C-0002		12.RD	39,209	32,946
	FA8702-15-D-0001		12.RD	7,753,313	182,373
NAVY	FA8721-05-C-0002		12.RD	7,360,837	1,889,097
	FA8702-15-D-0001		12.RD	52,272,840	3,870,729
OTHER DEPARTMENT OF DEFENSE	FA8721-05-C-0002		12.RD	18,058,568	2,311,652
	FA8702-15-D-0001		12.RD	182,580,035	8,741,143
TOTAL DEPARTMENT OF DEFENSE				**$ 872,821,902**	**$ 72,610,879**
NON-DEPARTMENT OF DEFENSE					
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION	FA8721-05-C-0002		11.RD	$ 880,045	$ -
	FA8702-15-D-0001		11.RD	6,071,530	-
DEPARTMENT OF ENERGY	FA8721-05-C-0002		81.RD	141,012	-
	FA8702-15-D-0001		81.RD	1,466,897	-
DEPARTMENT OF HOMELAND SECURITY	FA8721-05-C-0002		97.RD	850,797	49,346
	FA8702-15-D-0001		97.RD	27,094,177	537,232
DEPARTMENT OF TRANSPORTATION	FA8721-05-C-0002		20.RD	347,730	129,844
	FA8702-15-D-0001		20.RD	25,511,638	589,973
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	FA8721-05-C-0002		43.RD	2,222,145	178,264
	FA8702-15-D-0001		43.RD	24,233,843	2,305,806

Appendix A-2
Massachusetts Institue of Technology
Schedule of Expenditures of Federal Awards - Lincoln Laboratory
By Sponsor & Contract - FY 2018 Continued

Sponsor	Contract Number	Program Name	CFDA #	Total $ Amount Expended	$ Amount Passed to Subrecipients
OTHER NON DOD	FA8721-05-C-0002		99.RD	$ 155,732	$ -
	FA8702-15-D-0001		99.RD	4,111,287	-
TOTAL NON-DEPARTMENT OF DEFENSE				**$ 93,086,833**	**$ 3,790,465**
TOTAL DIRECT AWARDS				**$ 965,908,735**	**$ 76,401,344**

Appendix A-2
Massachusetts Institue of Technology
Schedule of Expenditures of Federal Awards - Lincoln Laboratory
By Sponsor & Contract - FY 2018 Continued

Prime Sponsor and Sponsor	Passthrough Program 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	$ 270,405	$ -
		Total Department of Commerce		**$ 270,405**	**$ -**
DEPARTMENT OF DEFENSE					
AIR FORCE					
Arete Associates	FA9451-17-P-0531	Alternative Methods for Creating Sodium Guidestar	12.RD	$ 40,625	$ -
Advanced Photon Sciences	F17A-029-0113	Fast Optical Limiters Based Phase Change Materials	12.RD	46,219	-
AIM Photonics	FA8650-15-2-5220	Electronic-Photonic Design Automation	12.RD	99,061	-
ARMY					
STTR	W909MY-13-C-0032	VLWIR SLS-DFPA for Imaging Spectroscopy	12.RD	105,548	-
Agiltron, Inc.	W911QY-16-P-0068	Ag Nanowire Grid on Amorphous Silicon	12.RD	67,831	-
Advanced Functional Fabrics of America	W15QKN-16-3-0001	Controlled Reflectivity Fabrics	12.RD	1,109,336	-
CLASSIFIED					
MITRE Corporation	1514TS7A-LL	MITRE Collaborative Tasks 4 and 5	12.RD	268	-
DEFENSE MICROELECTRONICS ACTIVITY					
Optowares Inc.	HQ072717P0030	Measurement for Thin Films on Sapphire	12.RD	43,104	-
MISSILE DEFENSE AGENCY					
TelAztec LLC	HQ0147-17-C-7308	AR Nano-Textures for Cool Running Optics in Multiple Bean kW-Class Lasers	12.RD	19,010	-
NAVY					
Freedom Photonics	N68335-13-C-0380	Advanced EO Modulators	12.RD	3,175	-
EOSPACE Inc.	N68335-17-C-0096	Hybrid Laser Modulator Transmitters	12.RD	67,960	-
Akita Innovations LLC	N68335-18-C-0366	Additive Manufacturing for Naval Aviation Battery Applications	12.RD	4,371	-
		Total Department of Defense		**$ 1,606,508**	**$ -**
DEPARTMENT OF ENERGY					
Triton Systems, Inc.	DE-SC0017884	Photonic Fabrics for Optical Tagging	81.RD	$ 39,869	$ -
University of Rochester	DE-NA0001944	High Power Optical Absorption Measurements	81.RD	16,894	-
		Total Department of Energy		**$ 56,763**	**$ -**
DEPARTMENT OF HOMELAND SECURITY					
RAND Corporation	HSHQDC-16-D-00007	Power System Analysis to Inform HSOAC Puerto Rico	97.RD	$ 165,761	$ -
		Total Department of Homeland Security		**$ 165,761**	**$ -**

Appendix A-2
Massachusetts Institue of Technology
Schedule of Expenditures of Federal Awards - Lincoln Laboratory
By Sponsor & Contract - FY 2018 Continued

Prime Sponsor and Sponsor	Passthrough Program Number	Program Name	CFDA #	Total	$ Amount Passed to Subrecipients
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION					
Jet Propulsion Laboratory	NNN12AA01C	Psyche Deep-Space Optical Communications	43.RD	$ 1,420,890	-
Jet Propulsion Laboratory	NNN12AA01C	Europa Lander Ladar Design Study	43.RD	279,860	-
Jet Propulsion Laboratory	NNN12AA01C	Uplink Laser Transmitter Study	43.RD	54,431	-
NASA	NAS2-97001	Stratospheric Observatory for Infrared Astronomy	43.RD	32,736	-
MIT Campus	MIT-300080	MiRa TA	43.001	212,625	-
MIT Campus	NNX10AE50G	Digital CCD Testing	43.RD	44,265	-
MIT Campus	SV8-88004	Arcus CCD Development Phase 2	43.RD	142,631	-
MIT Campus	80GSFC18C0031	ISS-TAO CCD Development Phase 2	43.RD	94,724	-
MIT Campus	NNG14FC03C	TESS Launch and Commissioning	43.RD	23,393	-
		Total National Aeronautics and Space Administration		**$ 2,305,555**	**$ -**
NATIONAL INSTITUTE OF HEALTH					
MIT Campus	1-R01-CA173712-01	Microfluidics MicroRNA Sensors	93.859	$ 49,076	$ -
MIT Campus	4-P50-GM098792-04	CIBS-Year 4-Project 4	93.859	(3,793)	-
MIT Campus	5-P50-GM098792-05	CISB-Year 5-Project 4	93.859	246,539	-
MIT Campus	2-R01-DA029639-05	Optical Control of Neural Circuits	93.859	250,888	-
MIT Campus	230321	Clin Res for Imprv Prev - Vocal Hyperfunc	93.173	82,962	-
MIT Campus	230321	Clin Res for Imprv Prev - Vocal Hyperfunc Yr2	93.173	8,021	-
		Total National Institute of Health		**$ 633,693**	**$ -**
NATIONAL SCIENCE FOUNDATION					
University of Southern California	IIS-1514544	Understanding Individual Speech Variability	47.RD	$ 39,928	$ -
MIT Campus	EFRI-1332250	Flexible Glucose Fuel Cell	47.070	232	-
MIT Campus	CCF-1521759	Evolvable Living Computing	47.070	216,079	-
		Total National Science Foundation		**$ 256,239**	**$ -**
Total Passthrough Awards				**$ 5,294,924**	**$ -**
Total Federal Awards				**$ 971,203,659**	**$ 76,401,344**

Appendix A3
Massachusetts Institute of Technology
Federal Research Support - Passthrough - On Campus
FY 2018 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						
Brown University						
DEPARTMENT OF DEFENSE	6926780	00000554	Quantum Metaphotonics and Metamaterials: from Single Emitters to Strongly Correlated Systems	12.800	18,688	-
DEPARTMENT OF DEFENSE	6933009	00000827	Mathematical Framework for Design Under Uncertainty	12.910	232,925	-
DEPARTMENT OF DEFENSE	6934244	00000921	Mechanism-Driven Discovery of Efficient H2 Production Electrocatalysts	12.300	123,982	-
			Total for Brown University		**375,595**	**-**
University of New Hampshire						
DEPARTMENT OF DEFENSE	6933544	16-054	Mechanics of Bio-inspired CNT - Modified Hierarchical/ Fractal Interfaces	12.800	88,052	-
			Total for University of New Hampshire		**88,052**	**-**
Old Dominion University						
DEPARTMENT OF DEFENSE	6933167	16-137-300345-010	Nanoelectropulse-induced electromechanical signaling and control of biological systems	12.800	272,383	-
			Total for Old Dominion University		**272,383**	**-**
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	102,070	-
DEPARTMENT OF DEFENSE	6938155	18-S8401-15-C1	Application of Systems Theory to the Safety and Cybersecurity of UxAS	12.RD	33,547	-
			Total for Universal Technology Corporation		**135,616**	**-**
University of Texas at Arlington						
DEPARTMENT OF DEFENSE	6938479	26-0201-51-65	Next Generation Advances in Ionosphere Thermosphere Coupling at Multiple Scales for Environmental Specification and Prediction	12.800	116,842	-
			Total for University of Texas at Arlington		**116,842**	**-**
Vanderbilt University						
DEPARTMENT OF DEFENSE	6930785	2784-018400	Science of Secure and Resilient Cyber-Physical Systems	12.300	1	-
			Total for Vanderbilt University		**1**	**-**
University of Michigan						

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FY 2018 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	6936329	3004427924	Multi-Fidelity Modeling of Rocket Combustor Dynamics	12.800	182,523	-
DEPARTMENT OF DEFENSE	6933569	3003660082	AN AUTOMATED MEASUREMENT SYSTEM FOR WARFIGHTER PERFORMANCE QUANTIFICATION IN NATURALISTIC SETTINGS	12.RD	263,485	-
DEPARTMENT OF DEFENSE	6932103	3002565045	The Center for Future Architectures Research (C-FAR)	12.RD	79,337	-
DEPARTMENT OF DEFENSE	6926853	3002453814	PASSIVE AND ACTIVE FRICTION DRAG REDUCTION OF TURBULENT FLOWS OVER SUPER-HYDROPHOBIC SURFACES	12.300	21,768	-
			Total for University of Michigan		**547,114**	**-**
University of Maryland						
DEPARTMENT OF DEFENSE	6936839	43830-Z8183003	MURI: Photonic Quantum Matter	12.800	205,255	-
DEPARTMENT OF DEFENSE	6923071	Z841801	MURI: Atomtronics: Material and Device Physics of Quantum Gases	12.431	-388	-
			Total for University of Maryland		**204,867**	**-**
Rutgers University						
DEPARTMENT OF DEFENSE	6936564	5562 / PO 467158	Dynamic Integration of Motion and Neural Data to Capture Human Behavior	12.800	78,524	-
DEPARTMENT OF DEFENSE	6930216	5298 (W81XWH-14-1-0100)	A theragnostic system solution for optimal nerve repair	12.420	43,060	-
			Total for Rutgers University		**121,585**	**-**
Boise State University						
DEPARTMENT OF DEFENSE	6933762	6856-PO124372	Phase-Controlled Magnetron Development	12.800	80,864	-
			Total for Boise State University		**80,864**	**-**
Lincoln Laboratory						
DEPARTMENT OF DEFENSE	6930986	7000291604	Study of JCIDS Semantic Architecture Framework	12.RD	138,881	-
DEPARTMENT OF DEFENSE	6934511	7000337934	High Energy Density Portable Power Pack	12.RD	0	-
DEPARTMENT OF DEFENSE	6937710	7000372082	Low SWaP Reaction Sphere for Precision CubeSat Attitude Control	12.RD	5,911	-
DEPARTMENT OF DEFENSE	6937918	7000374874	Graduate Student Research in FY17 in support of Verification and Validation of Autonomous Systems	12.RD	62,109	-
DEPARTMENT OF DEFENSE	6935578	7000375599	Image Analysis for Cellular-Resolution Brain Mapping	12.RD	48,614	-
DEPARTMENT OF DEFENSE	6938523	7000399771	MIT Haystack Observatory Engineering Support for The Lincoln Space Surveillance Complex (LSSC)	12.RD	1,739,406	-
DEPARTMENT OF DEFENSE	6935155	PO # 7000369210	RRTO Threat Network Detection and Tracking Project	12.RD	-7,468	-

Appendix A3
Massachusetts Institute of Technology
Federal Research Support - Passthrough - On Campus
FY 2018 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	6936379	PO #7000289543	MIT Haystack Observatory Engineering Support for the Lincoln Space Surveillance Complex (LSSC)	12.RD	625,891	-
DEPARTMENT OF DEFENSE	6934810	PO #7000364436	MIT Urban Risk Lab & Lincoln Lab (HADR)	12.RD	18,851	-
DEPARTMENT OF DEFENSE	6934997	PO #7000366576	Bulk Heterojunction Structural Batteries	12.RD	15,977	-
DEPARTMENT OF DEFENSE	6929045	PO 7000255976	New Directions in Computational Imaging	12.RD	-11,603	-
DEPARTMENT OF DEFENSE	6929208	PO 7000261350	Low Power Embedded Analytics	12.RD	-13,548	-
DEPARTMENT OF DEFENSE	6931130	PO 7000295944	Integrated WDM Lasercomm Transceivers	12.RD	-3,808	-
DEPARTMENT OF DEFENSE	6934698	PO 7000332975	3D Printing of Metal-Ceramic Microlattices	12.RD	6,054	-
DEPARTMENT OF DEFENSE	6933005	PO 7000333383	System Authentication for Wireless Power Transfer	12.RD	21,879	-
DEPARTMENT OF DEFENSE	6933613	PO 7000334320	Electro-AeroDynamic (EAD) Unmanned Aerial Vehicle (UAV) Prototype	12.RD	67,271	-
DEPARTMENT OF DEFENSE	6933392	PO 7000338443	Integrated Magnetooptical Isolators for IR-Vis Wavelengths	12.RD	-3,303	-
DEPARTMENT OF DEFENSE	6933423	PO 7000339130	Biomimetic Adaptive Forward-Looking Sonar for Object Recognition	12.RD	60,223	-
DEPARTMENT OF DEFENSE	6933541	PO 7000339337	Support of the Radio Communication Link Program Using the Westford Radio Telescope	12.RD	36,390	-
DEPARTMENT OF DEFENSE	6933513	PO 7000340812	Decentralized Multi-agent Coordination	12.RD	77,746	-
DEPARTMENT OF DEFENSE	6933700	PO 7000342060	Synthetic Biology - Artificial Gut for Engineering Microbial Communities	12.RD	11,481	-
DEPARTMENT OF DEFENSE	6934036	PO 7000351384	Mid-Infrared Optical Phase Modulators	12.RD	72	-
DEPARTMENT OF DEFENSE	6934430	PO 7000359526	Van Der Waals Epitaxy of Gan Hemt on Graphene/Transfer	12.RD	6,518	-
DEPARTMENT OF DEFENSE	6934951	PO 7000366547	Convection Enhanced Electrochemistry Energy Storage	12.RD	14,756	-
DEPARTMENT OF DEFENSE	6935040	PO 7000366923	Interpretable Neural Models	12.RD	29,050	-
DEPARTMENT OF DEFENSE	6935761	PO 7000374786	Student Based Development of the Jungle Hawk Owl Long Endurance UAV	12.RD	8,206	-
DEPARTMENT OF DEFENSE	6928933	PO# 7000243692	Innovation in Unmanned Air Vehicle Development	12.RD	146,198	-
DEPARTMENT OF DEFENSE	6930859	PO# 7000290592	Coherent Spin Qubits for Quantum-Enhanced Optimization	12.RD	1,625,702	-
DEPARTMENT OF DEFENSE	6931611	PO# 7000306158	Advanced GaN Transistor Technology (AGT2)	12.RD	122,325	-
DEPARTMENT OF DEFENSE	6932764	PO# 7000326660	Platform Device for Non-Invasive Gastrointestinal Disease Monitoring	12.RD	7,579	-
DEPARTMENT OF DEFENSE	6933166	PO# 7000334320	Electro-AeroDynamic (EAD) Unmanned Aerial Vehicle (UAV) Prototype	12.RD	201,619	-
DEPARTMENT OF DEFENSE	6933199	PO# 7000335585	Multimaterial Fiber Devices	12.RD	34,167	-

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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 DEFENSE	6933645	PO# 7000344422	Development of Aluminum Fueled Electric Vehicle and Submersible Power Systems (Lilypads II)	12.RD	112,813	-
DEPARTMENT OF DEFENSE	6933706	PO# 7000345331	Program-Analytic Cybersecurity Metrics via Exposure and Non-uniformity (PACMEN)	12.RD	44,080	-
DEPARTMENT OF DEFENSE	6933724	PO# 7000346015	Statistics Without Affirmed Ground Truth (StatSWAG)	12.RD	12,069	-
DEPARTMENT OF DEFENSE	6934759	PO# 7000362193	Low Temperature Magnetic Memory for Superconducting Computation	12.RD	91,057	-
DEPARTMENT OF DEFENSE	6935139	PO# 7000367982	Cyber Adversarial SCenario modeling and Automated Decision Engine (CASCADE)	12.RD	38	-
DEPARTMENT OF DEFENSE	6935145	PO# 7000368802	Stool Cell - Health Monitoring for the Human Gut	12.RD	49,096	-
DEPARTMENT OF DEFENSE	6935279	PO# 7000369000	Microplasmas for Additive Materials Deposition	12.RD	123,712	-
DEPARTMENT OF DEFENSE	6935235	PO# 7000370657	Phase Change Metamaterials	12.RD	153,433	-
DEPARTMENT OF DEFENSE	6935357	PO# 7000371273	Integrated Planar Lens-Based Lidar	12.RD	62,815	-
DEPARTMENT OF DEFENSE	6935316	PO# 7000372082	Low SWaP Reaction Sphere for Precision CubeSat Attitude Control	12.RD	89,132	-
DEPARTMENT OF DEFENSE	6935579	PO# 7000374786	Student Based Development of the Jungle Hawk Owl Long Endurance UAV	12.RD	163,647	-
DEPARTMENT OF DEFENSE	6935553	PO# 7000374874	Graduate Student Research in FY17 in support of Verification and Validation of Autonomous Systems	12.RD	71,331	-
DEPARTMENT OF DEFENSE	6935644	PO# 7000376241	Chip-Scale THz Spectrometer: Miniaturized Molecular Clock and Gas Sensor	12.RD	45,666	-
DEPARTMENT OF DEFENSE	6935784	PO# 7000379430	Lane-keeping with Localizing GPR in Poor Conditions	12.RD	17,192	-
DEPARTMENT OF DEFENSE	6935965	PO# 7000381569	Demonstration of Logical Qubits using 3D Integration	12.RD	359,018	-
DEPARTMENT OF DEFENSE	6936105	PO# 7000383604	Single- and Coupled-Qubit Randomized Benchmarking of Superconducting Qubits	12.RD	196,339	-
DEPARTMENT OF DEFENSE	6936237	PO# 7000385831	Development of A Built-In, Metal-Air, Nano Battery (Lincoln Laboratory Program # TIO2-0126)	12.RD	250,970	-
DEPARTMENT OF DEFENSE	6936301	PO# 7000385936	Design and Characterization of JTWPAs	12.RD	37,856	-
DEPARTMENT OF DEFENSE	6936468	PO# 7000386377	Time-Resolved Observations of Precipitation structure and storm Intensity with a Constellation of Smallsats (TROPICS)	12.RD	150,086	-
DEPARTMENT OF DEFENSE	6936327	PO# 7000386845	Integration of Departure Metering Concepts into Surface Capabilities	12.RD	71,667	-
DEPARTMENT OF DEFENSE	6936395	PO# 7000387954	Integrated QC Collaboration	12.RD	21,443	-
DEPARTMENT OF DEFENSE	6936545	PO# 7000389700	WaferSat	12.RD	111,280	-
DEPARTMENT OF DEFENSE	6936796	PO# 7000391952	Advanced Methods for Sensing, Learning, and Communication	12.RD	29,161	-

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DEPARTMENT OF DEFENSE	6937456	PO# 7000396484	Electrochemical Energy Systems Based on Continuous Gas-Solid Conversion	12.RD	125,205	-
DEPARTMENT OF DEFENSE	6937081	PO# 7000397480	Immersive virtual training for enhanced human-exosystem performance	12.RD	73,422	-
DEPARTMENT OF DEFENSE	6937231	PO# 7000398589 / LETTER NO. 16-C-17-0691	Alternatives for FEMA Disaster-Related Housing Assistance	12.RD	991,914	-
DEPARTMENT OF DEFENSE	6937458	PO# 7000399580	ACC 677: Adaptive Magnetic Transmissions	12.RD	39,600	-
DEPARTMENT OF DEFENSE	6937457	PO# 7000401832	Aluminum Powered Electric Vehicle	12.RD	97,830	-
DEPARTMENT OF DEFENSE	6937660	PO# 7000403338	Physics-In-The-Loop Photorealistic Simulation System For High-Throughput Computing Research	12.RD	97,962	-
DEPARTMENT OF DEFENSE	6937669	PO# 7000403439	ERGO: Exploiting Risk-taking in Group Operations	12.RD	92,540	-
DEPARTMENT OF DEFENSE	6937546	PO# 7000404029	Modeling the Electron Filtering Properties of Quantum-Dot Solids	12.RD	31,611	-
DEPARTMENT OF DEFENSE	6937583	PO# 7000404200	Valley Coherence in Monolayer 2D Materials	12.RD	20,385	-
DEPARTMENT OF DEFENSE	6937869	PO# 7000406016	MIT-LL collaborative project: Representative Public Safety Video Testbed	12.RD	82,110	-
DEPARTMENT OF DEFENSE	6938341	PO# 7000407322	Evaluation of Stress Fracture Phenomenology Using Ultrasound	12.RD	102,926	-
DEPARTMENT OF DEFENSE	6937851	PO# 7000408525	Multiphysics Approach to Designing Tunneling Based Post-CMOS Ultra-Low Power Logic Devices	12.RD	65,019	-
DEPARTMENT OF DEFENSE	6937868	PO# 7000408566	Thin Film On-Chip Microbatteries - Li-Garnet Solid State Battery Architectures	12.RD	1,295	-
DEPARTMENT OF DEFENSE	6938418	PO# 7000416040	Super Coatings for Precision Sensing	12.RD	20,020	-
DEPARTMENT OF DEFENSE	6938413	PO# 7000416344	Thin Film Microbatteries	12.RD	71,582	-
DEPARTMENT OF DEFENSE	6938424	PO# 7000416579	BeaverCube	12.RD	12,863	-
DEPARTMENT OF DEFENSE	6938440	PO# 7000417636	Fast Semantic Segmentation on Manifold	12.RD	4,630	-
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	10,472	-
DEPARTMENT OF DEFENSE	6932872	PO#7000328712	Lincoln Laboratory Group 63 Program 370 (LAKATT) Support	12.RD	74,768	-
DEPARTMENT OF DEFENSE	6933364	PURCHASE ORDER 7000337650	Functional Encryption Research	12.RD	-13,860	-
DEPARTMENT OF DEFENSE	6931687	7000294429	Proposal for A Low-Torque Pan Tilt System for Directional Scanning in a Marine Environment	12.RD	60,682	-
			Total for Lincoln Laboratory		**9,420,028**	**-**

Zona Technology, Inc.

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DEPARTMENT OF DEFENSE	6937626	AGMT DATED 8/29/17	FUN3D--based adjoint optimization for elastic tandem airfoils in chaotic flows	12.RD	79,571	-
			Total for Zona Technology, Inc.		**79,571**	**-**
Aerospace Corporation						
DEPARTMENT OF DEFENSE	6938786	AGMT DTD 3/15/18	Design of Reconfigurable Constellation Architectures	12.RD	45,006	-
DEPARTMENT OF DEFENSE	6938879	PO# 4600006296	Relative Operations for Autonomous Maneuvers	12.RD	38,323	-
			Total for Aerospace Corporation		**83,329**	**-**
SUNY: AIM Photonics						
DEPARTMENT OF DEFENSE	6933050	AGMT. DTD. 3/22/2016	IP-IMI	12.800	2,354,460	215,171
			Total for SUNY: AIM Photonics		**2,354,460**	**215,171**
National ICT Australia Limited						
DEPARTMENT OF DEFENSE	6931992	AGREEMENT DATED 5/14/15	Negotiating Mission Plans uder Risk Bounds	12.800	80,067	-
			Total for National ICT Australia Limited		**80,067**	**-**
TIPD, LLC						
DEPARTMENT OF DEFENSE	6930803	AGREEMENT DATED 7/31/14	Holographic Video Display Using Novel Guided-wave Scanning System (HVD-GWSS) - SBIR Phase II	12.RD	34,403	-
			Total for TIPD, LLC		**34,403**	**-**
Diversified Technologies, Inc.						
DEPARTMENT OF DEFENSE	6935088	AGREEMENT DATED 9-1-2016	A Practical Incoherent Scatter Radar, SBIR Phase 2	12.RD	44,356	-
			Total for Diversified Technologies, Inc.		**44,356**	**-**
Utah State University Research Foundation						
DEPARTMENT OF DEFENSE	6934347	CP0039726	UNP CubeSat	12.RD	43,971	-
			Total for Utah State University Research Foundation		**43,971**	**-**
Lockheed Martin Missiles and Fire Control						
DEPARTMENT OF DEFENSE	6935336	PO 4102738369	Algorithm Development and Experimentation In Support of Human Performance Sensing ? Biomarker/Metric Identification and Sensor Development Learning for Man-Machine Interoperation and Training	12.RD	220,816	-
			Total for Lockheed Martin Missiles and Fire Control		**220,816**	**-**

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Lockheed Martin						
DEPARTMENT OF DEFENSE	6937887	PO# 4103067458	STAHMP	12.RD	52,453	-
			Total for Lockheed Martin		**52,453**	**-**
Leidos, Inc.						
DEPARTMENT OF DEFENSE	6934135	PO10193198	MEMS Mass Spectrometry Project	12.RD	345,451	-
			Total for Leidos, Inc.		**345,451**	**-**
Metis Design Corporation						
DEPARTMENT OF DEFENSE	6936775	SBIR AGMT EFF 8/27/17	Carbon Nanotube Electronics for Radiation-Resilient Hardware	12.RD	63,390	-
			Total for Metis Design Corporation		**63,390**	**-**
Draper Laboratory Incorporated						
DEPARTMENT OF DEFENSE	6937745	SC001-1138	Mechanics of Nanostructure Assemblies (MoNA)	12.RD	5,686	-
DEPARTMENT OF DEFENSE	6937663	SC001-0000000918	Unifying Perception and Control via Fast Approximations for Fast Flight in Cluttered Environments	12.RD	826,159	-
DEPARTMENT OF DEFENSE	6938840	SC-001-1190	System Security Integrated Through Hardware and firmware (SSITH)	12.RD	501	-
DEPARTMENT OF DEFENSE	6937353	SUB PO# SC001-0000001187	DARPA - Agile Teams (A-Teams)	12.RD	49,836	-
DEPARTMENT OF DEFENSE	6934674	SC001-0000001039	Positioning System for Deep Ocean Navigation (POSYDON)	12.RD	36,853	-
DEPARTMENT OF DEFENSE	6936067	SC001-0000001106	Anticipatory Complex Event Recognition Technology (ACERT)	12.RD	111,213	-
			Total for Draper Laboratory Incorporated		**1,030,248**	**-**
Busek Company, Incorporated						
DEPARTMENT OF DEFENSE	6935180	STTR AGREEMENT DATED 11-3-2016	Ultra-High Density Ion Propulsion from Ionic Liquids (Phase II)	12.RD	27,716	-
			Total for Busek Company, Incorporated		**27,716**	**-**
University of Colorado Boulder						
DEPARTMENT OF DEFENSE	6934474	SUBAWARD NO. 1553954	Chemical Reactions of Cold Molecular Ions and Molecular Radicals	12.800	90,462	-
			Total for University of Colorado Boulder		**90,462**	**-**
University of Pennsylvania						

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DEPARTMENT OF DEFENSE	6936286	SUBAWARD NO. 561009	Geometry and Topology of Complex Networks	12.800	28,955	-
DEPARTMENT OF DEFENSE	6937858	560102	Evolution of Cultural Norms and Dynamics of Socio Political Change	12.431	300,338	-
DEPARTMENT OF DEFENSE	6937915	572622	ARCHES: Autonomous Resilient Cognitive Heterogeneous Swarms	12.RD	15,602	-
DEPARTMENT OF DEFENSE	6935748	568770	New Paradigms for Scalable Online Decentralized Optimization	12.300	302,762	-
DEPARTMENT OF DEFENSE	6937175	572339	New phase change materials for photonics: from in-silico design to novel device concepts	12.300	254,012	-
			Total for University of Pennsylvania		**901,669**	**-**
Rice University						
DEPARTMENT OF DEFENSE	6933218	SUBAWARD NO. R19091	Proteus: Controlling Resource-Adaptive Embedded Softward	12.300	330,084	-
			Total for Rice University		**330,084**	**-**
UES, Inc.						
DEPARTMENT OF DEFENSE	6934325	SUBCONTRACT NO. S-114-005-008	Ultrafast Beam Steering/Scanning Based on Photonic Crystals	12.RD	54,564	-
			Total for UES, Inc.		**54,564**	**-**
BAE Systems						
DEPARTMENT OF DEFENSE	6935282	SUBCONTRACT NUMBER: 921019	BAE DARPA BRASS	12.RD	303,966	-
			Total for BAE Systems		**303,966**	**-**
University of New Mexico						
DEPARTMENT OF DEFENSE	6935928	SUBCONTRACT: 271387-875J	(MURI) Innovative use of Metamaterials in Confining, Controlling, and Radiating Intense Microwave Pulses	12.800	273,090	-
			Total for University of New Mexico		**273,090**	**-**
University of Texas - Austin						
DEPARTMENT OF DEFENSE	6936108	UTA17-000362	Bayesian Optimal Experimental Design for Inverse Scattering	12.800	151,293	-
DEPARTMENT OF DEFENSE	6933717	UTA15-001067	Inference, Simulation, and Optimization of Complex Systems Under Uncertainty: Theory, Algorithms, and Applications to Turbulent Combustion	12.431	64,263	7,471
DEPARTMENT OF DEFENSE	6934067	UTA16-000556	Phonon Hydrodynamics and Spectroscopy in High Thermal Conductivity Materials	12.300	185,095	-

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DEPARTMENT OF DEFENSE	6936413	UTA16-000982	Paths to Quantum Supremacy	12.300	54,220	-
			Total for University of Texas - Austin		**454,871**	**7,471**
University of California - Berkeley						
DEPARTMENT OF DEFENSE	6931650	00008426 / BB00344334	Realization of High Fidelity, On-Chip Readout of Solid State Quantum Bits	12.431	57,792	-
DEPARTMENT OF DEFENSE	6934982	00009307	Fundamental Limits of the Action-Perception Loop	12.910	57,536	-
DEPARTMENT OF DEFENSE	6938520	00009805	Harnessing Parameterization for Fast and Reliable Nonconvex Optimization	12.910	27,923	-
DEPARTMENT OF DEFENSE	6933761	00009042/PO#BB00650967	Helio: Program Synthesis for Efficient, Privacy-Preserving Distributed Computation	12.RD	181,369	-
			Total for University of California - Berkeley		**324,620**	**-**
Beth Israel Deaconess Medical Center						
DEPARTMENT OF DEFENSE	6936076	01029123	DAMP-Mediated Innate Immune Failure and Pneumonia after Trauma	12.420	360,165	-
			Total for Beth Israel Deaconess Medical Center		**360,165**	**-**
University of Utah						
DEPARTMENT OF DEFENSE	6932906	10037637-MIT	In Situ Visualization of Discontinuous Galerkin Based High-Order Methods	12.431	59,790	-
DEPARTMENT OF DEFENSE	6935768	10043028-MIT	Design Responding to Engineering Analysis in support of Manufacturing	12.910	197,625	-
DEPARTMENT OF DEFENSE	6935759	10043182-MIT	Augmented Design Through Analysis and Visualization Facilitating Better Designs and Enhanced Designers	12.910	120,389	-
			Total for University of Utah		**377,803**	**-**
Brigham & Women's Hospital						
DEPARTMENT OF DEFENSE	6933104	112729	Novel Strategies to improve immunomodulation and non-invasive clinical monitoring in VCA	12.420	45,760	-
			Total for Brigham & Women's Hospital		**45,760**	**-**
Harvard University						
DEPARTMENT OF DEFENSE	6936171	134062-5093041	Imaging and Control of Biological Transduction using NV-Diamond	12.431	175,062	-
DEPARTMENT OF DEFENSE	6936802	167936.0001	Reverse Engineering Host Resilience	12.RD	8,283	-
DEPARTMENT OF DEFENSE	6935798	123950-5092634	Quantum Opto-Mechanics with Atoms and Nanostructured Diamond (QOMAND)	12.300	270,967	-

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DEPARTMENT OF DEFENSE	6936596	133691-5101730	Elements of Causal Learning: Basic Concepts, Theory, Methods, Algorithms and Applications	12.300	96,796	-
DEPARTMENT OF DEFENSE	6936929	138076-5093553	Algorithms for Representation and Inference informed by the Acquisition of Data from Neuroscience Experiments (ARIADNE)	12.RD	152,865	-
DEPARTMENT OF DEFENSE	6934070	138076-5093555	MICrONS	12.RD	32,118	-
			Total for Harvard University		**736,092**	**-**
Srico						
DEPARTMENT OF DEFENSE	6936086	16080MIT	Quantum Frequency Conversion for Quantum Communication	12.RD	42,546	-
			Total for Srico		**42,546**	**-**
Columbia University						
DEPARTMENT OF DEFENSE	6927216	2 (GG008784) / PO G10346	Imaging How a Neuron Computes	12.431	93,185	-
DEPARTMENT OF DEFENSE	6927546	1(GG007792)	Power Grid Vulnerability and Resilience to Geographically Correlated Failures	12.351	120,551	-
			Total for Columbia University		**213,736**	**-**
North Carolina State University						
DEPARTMENT OF DEFENSE	6937652	2017-0383-01	Algorithms for Exploiting Approximate Network Structure	12.431	104,332	-
			Total for North Carolina State University		**104,332**	**-**
University of Maryland - College Park						
DEPARTMENT OF DEFENSE	6936017	28725-Z8401005	Center for Distributed Quantum Information	12.431	132,543	-
DEPARTMENT OF DEFENSE	6932890	2875-Z8401005	Center for Distributed Quantum Information	12.431	103,258	-
			Total for University of Maryland - College Park		**235,801**	**-**
Boston University						
DEPARTMENT OF DEFENSE	6924758	4500000571	Synthetic Mammalian Gene Regulatory Circuits for in Vivo Biomedical Applications	12.431	-45,474	-
DEPARTMENT OF DEFENSE	6924737	4500000552	MURI: Utilizing Synthetic Biology to Create Programmable Micro-Bio-Robots	12.300	44,985	-
DEPARTMENT OF DEFENSE	6935193	4500002204	NEURAL CIRCUITS UNDERLYING SYMBOLIC PROCESSING IN PRIMATE CORTEX AND BASAL GANGLIA	12.300	170,928	-
			Total for Boston University		**170,439**	**-**
Northeastern University						

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DEPARTMENT OF DEFENSE	6937601	504108-78053	Engineered Materials and Materials Design for Engineered Materials (EMMDEM)	12.431	35,417	-
			Total for Northeastern University		**35,417**	**-**
BAE Systems Info & Electronic Systems Integration, Inc						
DEPARTMENT OF DEFENSE	6923517	741274	Coverage by Teams of Autonomous Ground and Aerial Vehicles	12.RD	24,639	-
DEPARTMENT OF DEFENSE	6936218	892730	Ultra-high energy density TPV generator for small robotic platforms: First ever demonstration of fuel powered robot with extreme range	12.RD	142,426	-
DEPARTMENT OF DEFENSE	6937008	964193	Bundle Congestion Control for Programmable Network Control Points	12.RD	195,499	-
DEPARTMENT OF DEFENSE	6936066	932658	Networked Estimation of Position using Tomography, Undersea-data, Nudging, and Exfiltration (NEPTUNE)	12.RD	125,123	-
			Total for BAE Systems Info & Electronic Systems Integration, Inc		**487,687**	**-**
H. F. Webster Engineering Services						
DEPARTMENT OF DEFENSE	6935773	AGREEMENT DATED 10-1-2016	Unified Description of Critical Velocity: A Pathway Toward Optimized Cold Spray Deposition	12.RD	106,135	-
			Total for H. F. Webster Engineering Services		**106,135**	**-**
University of Washington						
DEPARTMENT OF DEFENSE	6933157	BPO4415, SUB# UWSC7968	Muscle's Energetic Versatility Arises From Its Crystalline and Multi-Component Structure	12.431	131,893	-
			Total for University of Washington		**131,893**	**-**
Yale University						
DEPARTMENT OF DEFENSE	6926770	C13J11492(CON-80000015)	High-Resolution Quantum Control of Chemical Reactions	12.431	120,946	-
			Total for Yale University		**120,946**	**-**
University of Chicago						
DEPARTMENT OF DEFENSE	6929146	FP054294-C	Fundamental Issues in Non-equilibrium Dynamics (MURI)	12.431	174,776	-
DEPARTMENT OF DEFENSE	6938423	FP067719	Social MIND: Social Machine Intelligence for Novel Discovery	12.91	14,787	-
			Total for University of Chicago		**189,563**	**-**
University of Sydney						

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DEPARTMENT OF DEFENSE	6935365	G174385 RESEARCH COLLABORATION AGREEMENT	Quantum Control Engineering	12.431	396,120	-
			Total for University of Sydney		**396,120**	**-**
Harvard Medical School						
DEPARTMENT OF DEFENSE	6936761	GEORGE_CHAO_153170	Letter Agreement : Chung-Yun George Chao 060117-053118	12.431	64,146	-
DEPARTMENT OF DEFENSE	6938338	152304.5106735.0006	Surveillance of Passenger Organisms to Record Embarkment	12.910	76,441	-
			Total for Harvard Medical School		**140,587**	**-**
University of California-Santa Barbara						
DEPARTMENT OF DEFENSE	6932998	KK1622	QUANTA: Quantitative Network-based Models of Adaptive Team Behavior	12.431	184,472	-
DEPARTMENT OF DEFENSE	6935172	KK1713	Neural foundations of expertise based on optimal decision-making, physical control and responses to stress	12.431	216,714	-
DEPARTMENT OF DEFENSE	6937076	KK1808	From Data-Driven Operator Theoretic Schemes to Predication, Inference, and Control of Systems	12.431	186,234	-
DEPARTMENT OF DEFENSE	6934736	KK9151	Institute for Collaborative Biotechnology (ICB)	12.431	179,800	-
			Total for University of California-Santa Barbara		**767,219**	**-**
University of California						
DEPARTMENT OF DEFENSE	6938164	KK9151	Institute for Collaborative Biotechnology (ICB)	12.RD	105,399	-
DEPARTMENT OF DEFENSE	6925894	KK9151-24	Institute for Collaborative Biotechnology (ICB)	12.RD	-44	-
DEPARTMENT OF DEFENSE	6929256	KK9151-30	Institute for Collaborative Biotechnology (ICB)	12.RD	19,663	-
DEPARTMENT OF DEFENSE	6929260	KK9151-31	Institute for Collaborative Biotechnology (ICB)	12.RD	362,927	-
DEPARTMENT OF DEFENSE	6929262	KK9151-33	Institute for Collaborative Biotechnology (ICB)	12.RD	145,608	-
DEPARTMENT OF DEFENSE	6929265	KK9151-35	Institute for Collaborative Biotechnology (ICB)	12.RD	216,740	-
DEPARTMENT OF DEFENSE	6933077	KK9151-44	Institute for Collaborative Biotechnology (ICB)	12.RD	133,693	-
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	258,708	-
			Total for University of California		**1,242,695**	**-**
General Dynamics						
DEPARTMENT OF DEFENSE	6933358	PO #40240163 LINE 001 - 1.1.1.4.1.4	M1-4 Design Optimization Method of Total Actuation System for Limbed Locomotion; 1.1.1.4.1.4	12.431	869	-

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DEPARTMENT OF DEFENSE	6935506	PO #40240163 LINE 003 - 1.1.1.4.1.4	M1-4 Design Optimization Method of Total Actuation System for Limbed Locomotion; 1.1.1.4.1.4	12.431	1,950	-
DEPARTMENT OF DEFENSE	6936534	PO# 40279278	General Dynamics Land Systems	12.431	377,314	-
			Total for General Dynamics		**380,133**	**-**
BBN Technologies Corporation						
DEPARTMENT OF DEFENSE	6932292	PO 9500012484 : BBN REF ID #14400	Superconducting Nanowire Electronics	12.RD	85,465	-
DEPARTMENT OF DEFENSE	6937779	PO LBN9512484 : BBN REF ID #14400	Superconducting Nanowire Electronics	12.RD	116,466	-
DEPARTMENT OF DEFENSE	6934480	14603 / PO 9500013244	Precision Ocean Interrogation, Navigation and Timing (POINT)	12.RD	-2,946	-
DEPARTMENT OF DEFENSE	6932243	PO LBN9512779	A Stochastic Network Optimization Approach to Providing Robust Communications Over an Unreliable Underlay Network (TA1)	12.RD	322,188	-
DEPARTMENT OF DEFENSE	6937311	PO LBN9513244	Precision Ocean Interrogation, Navigation and Timing (POINT)	12.RD	130,817	-
			Total for BBN Technologies Corporation		**651,991**	**-**
Georgia Institute of Technology						
DEPARTMENT OF DEFENSE	6935451	RC379-G1	BIOLOGICAL LOCOMOTION PRINCIPLES AND RHEOLOGICAL INTERACTION PHYSICS	12.431	3,774	-
DEPARTMENT OF DEFENSE	6935159	RH176-G1	Statistical Mechanics for Learning Algorithmic-Baed Controllers: The Role of Physics in New Computational Models for Real-Time Control	12.431	3,090	-
			Total for Georgia Institute of Technology		**6,864**	**-**
LongWave Photonics LLC						
DEPARTMENT OF DEFENSE	6937116	STTR AGMT UNDER W911NF-17-P-0045	Active HEterodyne THz Imager (TAHETI)	12.RD	44,536	-
			Total for LongWave Photonics LLC		**44,536**	**-**
Securboration						
DEPARTMENT OF DEFENSE	6933150	SUB UNDER ARL CONTRACT W911QX-15-C-0015	Augmented Reality for Tactical Edge Analysis (ARTEA) II	12.RD	24,402	-
			Total for Securboration		**24,402**	**-**
Carnegie-Mellon University						

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DEPARTMENT OF DEFENSE	6936649	SUBAWARD NO. 1130207-380280	Cultivating Collective Intelligence in Human-Computer Systems	12.RD	54,753	-
			Total for Carnegie-Mellon University		**54,753**	**-**
Arizona State University						
DEPARTMENT OF DEFENSE	6926159	SUBAWARD NO. 13-950	Translating Biochemical Pathways to Non-Cellular Environment	12.431	16,580	-
			Total for Arizona State University		**16,580**	**-**
I.R.C.C.S. Istituto Ortopedico Galeazzi						
DEPARTMENT OF DEFENSE	6933716	SUBAWARD UNDER W81XWH-15-1-0092	Bone tropism of breast cancer metastases: dissecting the role of endothelial adhesion molecules through human organotypic vascularized microfluidic 3D models	12.420	9,369	-
			Total for I.R.C.C.S. Istituto Ortopedico Galeazzi		**9,369**	**-**
Sri International						
DEPARTMENT OF DEFENSE	6931008	SUBCONTRACT 27-001441, REL 2	Mining and Understanding Software Enclaves (MUSE)	12.RD	167,657	-
			Total for Sri International		**167,657**	**-**
New Jersey Institute of Technology						
DEPARTMENT OF DEFENSE	6938105	(NP) 996402	PALISADE: Program obfuscation Advancement with Lattice Implementation for Scalable Application Demonstration of Efficiency	12.RD	303,221	-
			Total for New Jersey Institute of Technology		**303,221**	**-**
On Demand Pharmaceuticals Inc						
DEPARTMENT OF DEFENSE	6934747	001	Pharmacy on Demand Technology Transition	12.910	1,396,067	-
DEPARTMENT OF DEFENSE	6937271	001	Pharmacy on Demand Technology Transition	12.910	203,436	-
			Total for On Demand Pharmaceuticals Inc		**1,599,503**	**-**
United Technologies Research Center						
DEPARTMENT OF DEFENSE	6935230	1224171 / PO# 2604891	Scalable Inference for Rare Events (SIRE).	12.RD	117,379	-
			Total for United Technologies Research Center		**117,379**	**-**
Smithsonian Inst. - Astrophysical Observatory						
DEPARTMENT OF DEFENSE	6936057	17-S_TO-400-0000370995	Development of Diamond Nanoscale Magnetometer using Quantum assisted Sensing and Readout	12.RD	68,576	-

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			Total for Smithsonian Inst. - Astrophysical Observatory		**68,576**	**-**
SYSTEMS & TECHNOLOGY RESEARCH LLC						
DEPARTMENT OF DEFENSE	6937319	2017-0026	DEEPSONG	12.RD	43,313	-
DEPARTMENT OF DEFENSE	6937966	2017-0031	Deep Intermodal Video Analytics (DIVA)	12.RD	31,430	-
			Total for SYSTEMS & TECHNOLOGY RESEARCH LLC		**74,742**	**-**
Massachusetts General Hospital						
DEPARTMENT OF DEFENSE	6930740	222252	(ADVANCE) Rapid Immunity via Gene Transfer of Oligoclonal Fc-Enhanced mAbs	12.910	37,364	-
			Total for Massachusetts General Hospital		**37,364**	**-**
Duke University						
DEPARTMENT OF DEFENSE	6938444	313-0793	An Integrated Nonparametric Bayesian and Deep Neural Network Framework for Biologically-Inspired Lifelong Learning	12.91	3,108	-
DEPARTMENT OF DEFENSE	6928294	13-ONR-1109	Expanding the Limits of Acoustic Metamaterials	12.300	186,510	-
			Total for Duke University		**189,618**	**-**
Stanford University						
DEPARTMENT OF DEFENSE	6936362	61468648-122860	Revolutionizing Data-Intensive Computing	12.910	150,000	-
DEPARTMENT OF DEFENSE	6931094	60744752-114407	Role of Bidirectional Computation in Visual Scene Analysis	12.300	292,781	-
			Total for Stanford University		**442,781**	**-**
Raytheon BBN Technologies Corp.						
DEPARTMENT OF DEFENSE	6938139	9500013645	Explainable Question Answering System (EQUAS)	12.910	78,986	-
DEPARTMENT OF DEFENSE	6936196	SLIN 0001 / LBN9513537	Generalized Network Assisted Transport (GNAT)	12.RD	273,776	-
DEPARTMENT OF DEFENSE	6936009	9500013359	(CONQUEST) Communications and Networking with Quantum Operationally-Secure Technology for Maritime Deployment	12.RD	89,633	-
DEPARTMENT OF DEFENSE	6935317	LBN9513359	(CONQUEST) Communications and Networking with Quantum Operationally-Secure Technology for Maritime Deployment	12.RD	114,943	-
DEPARTMENT OF DEFENSE	6936055	LBN9513341	Scientific Advances to Continuous Insider Threat Evaluation Program	12.RD	78,356	-
DEPARTMENT OF DEFENSE	6937573	LBN9513584	Ultraviolet-Visible Photonic Integrated Circuits (UV-PIC)	12.RD	82,049	-
			Total for Raytheon BBN Technologies Corp.		**717,742**	**-**

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IBM Thomas J. Watson Research Center						
DEPARTMENT OF DEFENSE	6933545	AGREEMENT # 4915012803	IOPS: Improving Obfuscation Practicality and Security	12.RD	13,149	-
DEPARTMENT OF DEFENSE	6933416	AGREEMENT # 4915012803 / PO# 5004820179	IOPS: Improving Obfuscation Practicality and Security	12.RD	131,103	-
DEPARTMENT OF DEFENSE	6938120	AGREEMENT # 4915012803 / PO# 5005104843	IOPS: Improving Obfuscation Practicality and Security	12.RD	203,170	-
DEPARTMENT OF DEFENSE	6937580	SUBCONTRACT 4917017433/PO 5005137126	DIVA - IBM	12.RD	151,884	-
			Total for IBM Thomas J. Watson Research Center		**499,306**	**-**
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	241,551	-
			Total for Sandia National Laboratories		**241,551**	**-**
Aurora Flight Sciences RDC						
DEPARTMENT OF DEFENSE	6936333	AGRMT EFF. 9/27/16	ALASA CubeSat Deformable Mirror Demonstration Mission (DEMI)	12.RD	9,551	-
DEPARTMENT OF DEFENSE	6935749	AMA-17-0001	ALASA CubeSat Deformable Mirror Demonstration Mission (DEMI)	12.RD	112,979	-
			Total for Aurora Flight Sciences RDC		**122,530**	**-**
Applied Physical Sciences Corp.						
DEPARTMENT OF DEFENSE	6938458	APS-18-03	Tactical Exploitation of the Acoustic Channel (TEAC)	12.RD	46,343	-
DEPARTMENT OF DEFENSE	6931085	APS-14-12 SLIN 0001, S.P 3470-167, TASK 4.12	DASH Phase 4: Ocean Sensing Concepts	12.RD	-301	-
			Total for Applied Physical Sciences Corp.		**46,042**	**-**
University of Virginia						
DEPARTMENT OF DEFENSE	6938713	GG12078.157800	Ultrasmall skyrmion synthesis guided by high throughput computational materials discovery to advance texitronics	12.91	120,992	-
			Total for University of Virginia		**120,992**	**-**
Ministry of Defense of Israel						
DEPARTMENT OF DEFENSE	6930221	PO 4440560793	Terahertz Quantum-Cascade Lasers and Imaging	12.RD	-2,899	-
DEPARTMENT OF DEFENSE	6931844	PO 4440656472	Novel multimaterial fiber system for magnetic wave detection	12.RD	663	-

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DEPARTMENT OF DEFENSE	6931907	PO 4440661300	Rapidly Exploring Random Trees for Pursuit-Evasion Games	12.RD	75,193	-
DEPARTMENT OF DEFENSE	6931680	PO 4440949975	Planning and Sensing Algorithms for Underwater Persistent Monitoring	12.RD	59,154	-
			Total for Ministry of Defense of Israel		**132,111**	**-**
Perspecta Labs Inc.						
DEPARTMENT OF DEFENSE	6932420	PO-0004102	Distributed Enclave Defense Using Configurable Edges (DEDUCE)	12.RD	93,740	-
DEPARTMENT OF DEFENSE	6935031	PO-0008492	SCATTERED	12.RD	543,234	-
			Total for Perspecta Labs Inc.		**636,974**	**-**
Evidation Health						
DEPARTMENT OF DEFENSE	6937041	SUBAWD. SIGNED 8/27/2017	Identifying Novel Cognitive Markers from Spoken Language Processing	12.RD	107,657	-
			Total for Evidation Health		**107,657**	**-**
Aptima, Inc.						
DEPARTMENT OF DEFENSE	6937326	SUBCONTRACT NUMBER 1197-2015	Agile Teams (A-Teams) - ThermoTeams: An Energy-Based Approach to the Design of Highly Adaptive Teams	12.RD	159,786	-
			Total for Aptima, Inc.		**159,786**	**-**
American Lightweight Materials Manufacturing Innovation Institute						
DEPARTMENT OF DEFENSE	6931266	0001	Sub-Award Agreement 0001: Cross-Cut Pillar Lead - Cost Modeling v.2	12.RD	50,478	-
DEPARTMENT OF DEFENSE	6932706	0002B-11	Sub-Award Agreement 0001: Cross-Cut Pillar Lead - Cost Modeling v.2	12.RD	108	-
DEPARTMENT OF DEFENSE	6934651	SUB AWARD NUMBER 0002 LIFT CORE MODELING	Sub-Award Agreement 0001: Cross-Cut Pillar Lead - Cost Modeling v.2	12.RD	379,041	-
DEPARTMENT OF DEFENSE	6934657	SUB AWARD NUMBER 0004A-5	Sub-Award Agreement 0001: Cross-Cut Pillar Lead - Cost Modeling v.2	12.RD	72,721	-
DEPARTMENT OF DEFENSE	6934653	SUB AWARD NUMBER 0006A-7	Sub-Award Agreement 0001: Cross-Cut Pillar Lead - Cost Modeling v.2	12.RD	76,280	-
DEPARTMENT OF DEFENSE	6934655	SUB AWARD NUMBER 0007A-7	Sub-Award Agreement 0001: Cross-Cut Pillar Lead - Cost Modeling v.2	12.RD	56,409	-
			Total for American Lightweight Materials Manufacturing Innovation Institute		**635,037**	**-**
Cornell University						

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DEPARTMENT OF DEFENSE	6933365	77497-10576	Dexterous Manipulation Specification Via Language and Context Constraints	12.300	156,249	-
DEPARTMENT OF DEFENSE	6937216	81825-10911	PERISCOPE: Perceptual Representations for Actions, Composition, and Verification	12.300	250,822	-
			Total for Cornell University		**407,071**	**-**
University of Minnesota						
DEPARTMENT OF DEFENSE	6937286	A006141803	Predicting Turbulent Multi-Phase Flows with High Fidelity: A Physics-Based Approach	12.300	143,581	-
			Total for University of Minnesota		**143,581**	**-**
Woods Hole Oceanographic Institution						
DEPARTMENT OF DEFENSE	6924238	A100847	Unified Four-dimensional Multi-resolution Oceanographic, Acoustic and Atmospheric Modeling and Dynamics	12.300	25,102	-
DEPARTMENT OF DEFENSE	6929292	A101085	Impacts of Changing Climate on Pacific Island-based Defense Installations	12.RD	3,065	-
			Total for Woods Hole Oceanographic Institution		**28,167**	**-**
Vector Controls, Inc.						
DEPARTMENT OF DEFENSE	6936807	AGMT DTD 7/23/13	STTR: N10A-T036 (Phase II) Mitigation of USV Motions via Wave Sensing and Predictions	12.RD	30,000	-
			Total for Vector Controls, Inc.		**30,000**	**-**
Mide Technology						
DEPARTMENT OF DEFENSE	6931299	AGRMNT EFFECTIVE 12/16/2014	STTR Phase II: Light Weight Atmospheric Diving Suit	12.RD	-17,997	-
			Total for Mide Technology		**-17,997**	**-**
Radiation Monitoring Devices						
DEPARTMENT OF DEFENSE	6938352	C18-11	Hot Wall Epitaxy of Mixed Lead Chalcogenides in Resonant Cavity Structures	12.RD	29,688	-
			Total for Radiation Monitoring Devices		**29,688**	**-**
George Mason University						
DEPARTMENT OF DEFENSE	6937200	E2042811	Safety Evaluation of Lithium-ion Batteries Under Combined Mechanical and Electrical Abuse Conditions	12.300	133,937	-
			Total for George Mason University		**133,937**	**-**

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University of California-San Diego						
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	277,860	-
			Total for University of California-San Diego		**277,860**	**-**
Florida State University						
DEPARTMENT OF DEFENSE	6935158	R01849	ESRDC - FSU and MIT Sea Grant Collaboration	12.300	366,405	-
			Total for Florida State University		**366,405**	**-**
Battelle Memorial Institute						
DEPARTMENT OF DEFENSE	6935623	SUB NO. 550379/PO US001-0000550379	Passive Sampling Optimization at Apra Harbor and Orote Landfill, Guam	12.RD	92,183	-
			Total for Battelle Memorial Institute		**92,183**	**-**
Technical Data Analysis, Inc.						
DEPARTMENT OF DEFENSE	6938045	SUBCONTRACT 2074-001-01	Materials Modeling Tool for Alloy Design to Streamline the Development of High Temperature, High-Entropy Alloys for Advanced Propulsion Systems	12.RD	37,500	-
			Total for Technical Data Analysis, Inc.		**37,500**	**-**
CREARE, Incorporated						
DEPARTMENT OF DEFENSE	6932855	SUBCONTRACT NO. 78380	Ship Airwake Measurement System	12.RD	104,129	-
			Total for CREARE, Incorporated		**104,129**	**-**
Advanced Technology International						
DEPARTMENT OF DEFENSE	6931548	TASK ORDER 01: BASE TO AGREEMENT 2015-461	Base Task Order Agreement	12.RD	35,467	-
			Total for Advanced Technology International		**35,467**	**-**
HRL Laboratories, LLC						
DEPARTMENT OF DEFENSE	6938516	15026-503667-DS	Microwave Quantum Engineering for Semiconductor Quantum Dot Qubits	12.RD	32,329	-
DEPARTMENT OF DEFENSE	6933521	15026-503667-DS/BCX3.150.MIT000/1	Microwave Quantum Engineering for Semiconductor Quantum Dot Qubits	12.RD	1,173	-
DEPARTMENT OF DEFENSE	6935707	15026-503667-DS/BFX3.150.MIT000	Microwave Quantum Engineering for Semiconductor Quantum Dot Qubits	12.RD	184,683	-
DEPARTMENT OF DEFENSE	6937913	16102-172807-QS/COST ACCOUNT BC2A.101.MIT000	Hybrid Forecasting Competition (HFC): Base Phase 1A Task 1	12.RD	164,658	-

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			Total for HRL Laboratories, LLC		**382,843**	**-**
Siemens Medical Solutions USA, Inc.						
DEPARTMENT OF DEFENSE	6929801	102-01	Knowledge Representation in Neural Systems	12.RD	1,360	-
			Total for Siemens Medical Solutions USA, Inc.		**1,360**	**-**
Stevens Institute of Technology						
DEPARTMENT OF DEFENSE	6934069	2102620-02	(SERC) Collaboration Agreement: Systems Engineering Research Center	12.RD	-1,250	-
DEPARTMENT OF DEFENSE	6938272	HQ0034-13-D-00004/TO# HQ003418F0097	(SERC) Collaboration Agreement: Systems Engineering Research Center	12.RD	77,658	-
DEPARTMENT OF DEFENSE	6936805	HQ0034-13-D-0004/TO # HQ003417F0283	(SERC) Collaboration Agreement: Systems Engineering Research Center	12.RD	71,870	-
DEPARTMENT OF DEFENSE	6936008	HQ0034-13-D-0004/TO #0077	(SERC) Collaboration Agreement: Systems Engineering Research Center	12.RD	171,175	-
DEPARTMENT OF DEFENSE	6938201	HQ0034-13D-0004/TO# HQ003418F0089	(SERC) Collaboration Agreement: Systems Engineering Research Center	12.RD	2,141	-
			Total for Stevens Institute of Technology		**321,593**	**-**
Ohio State University						
DEPARTMENT OF DEFENSE	6931042	60040869/RF01385268	Modeling, Analysis and Control for Robust Interdependent Networks	12.351	85,563	-
			Total for Ohio State University		**85,563**	**-**
University of Southern California						
DEPARTMENT OF DEFENSE	6937906	90502031	IARPA QEO, Algorithms and Designs for Quantum Annealing	12.RD	214,252	-
DEPARTMENT OF DEFENSE	6937962	NO. 94711981	SARAL: Summarization and domain-Adaptive Retrieval of Information Across Languages	12.RD	41,220	-
			Total for University of Southern California		**255,472**	**-**
ESPACE						
DEPARTMENT OF DEFENSE	6933171	AGMT. DTD. 8/14/13	IMPACT: Validation of iEPS in Space	12.RD	405,413	-
			Total for ESPACE		**405,413**	**-**
Advanced Functional Fabrics of America (AFFOA)						
DEPARTMENT OF DEFENSE	6938682	EXHIBIT 1-A	Shape-Shifting Climate-Adaptive Garments	12.RD	30,017	-
			Total for Advanced Functional Fabrics of America (AFFOA)		**30,017**	**-**

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Children's Hospital Boston						
DEPARTMENT OF DEFENSE	6935620	GENFD0001191127	HealthMap Computational Epidemiology Group - Maimuna Majumder - IARPA	12.RD	0	-
			Total for Children's Hospital Boston		**0**	**-**
			TOTAL for Department of Defense		**35,220,884**	**222,642**

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DEPARTMENT OF COMMERCE						
North Pacific Research Board						
DEPARTMENT OF COMMERCE	6931400	1411	Influenza in synanthropic gulls: are congregation sites hotspots for viral evolution?	11.472	1,069	-
			Total for North Pacific Research Board		**1,069**	**-**
Northeastern University						
DEPARTMENT OF COMMERCE	6935162	599807-78050	Investigation of The Effects of Ocean Acidification & Warming	11.417	972	-
			Total for Northeastern University		**972**	**-**
			TOTAL for Department of Commerce		**2,041**	**-**

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DEPARTMENT OF ENERGY						
University of Alabama-Birmingham						
DEPARTMENT OF ENERGY	6937651	000517656-SC001	Novel, Middle and Long Wave Infrared Laser Sources For Accelerator and X-ray Generation Applications	81.049	69,933	-
			Total for University of Alabama-Birmingham		**69,933**	**-**
University of Illinois-Urbana Champaign						
DEPARTMENT OF ENERGY	6937707	078620-16205	Cyber Resilient Energy Delivery Consortium (CREDC)	81.122	150,571	-
DEPARTMENT OF ENERGY	6935555	078620-16205 (GRANT CODE: AC995)	Cyber Resilient Energy Delivery Consortium (CREDC)	81.122	413,429	-
			Total for University of Illinois-Urbana Champaign		**564,000**	**-**
Jefferson Science Associates, LLC						
DEPARTMENT OF ENERGY	6926116	12-P2092	MOLLER Engineering	81.049	-8,449	-
			Total for Jefferson Science Associates, LLC		**-8,449**	**-**
Washington State University						
DEPARTMENT OF ENERGY	6938310	130862-G003801	AGGREGATE: data-driven modeling preserving controllable DER for outage management and resiliency	81.122	57,327	-
			Total for Washington State University		**57,327**	**-**
Harvard University						
DEPARTMENT OF ENERGY	6920743	133512-5028381	Transport and Imaging of Mesoscopic Phenomena in Single and Bilayer Graphene	81.049	20,653	-
			Total for Harvard University		**20,653**	**-**
Composite Technology Development, Inc.						
DEPARTMENT OF ENERGY	6934564	16779	Insulation of TSTC for fusion applications	81.049	129,742	-
DEPARTMENT OF ENERGY	6937247	17420	Novel Insulation for Re-makeable Joints for Superconducting Cables and Demountable Magnets	81.049	42,000	-
			Total for Composite Technology Development, Inc.		**171,742**	**-**
Arizona State University						
DEPARTMENT OF ENERGY	6936487	17-032	DNA Nanostructure Directed Designer Excitonic Networks	81.049	108,527	-
			Total for Arizona State University		**108,527**	**-**

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George Washington University						
DEPARTMENT OF ENERGY	6938165	17-S33	Microscale Optimized Solar-Arrays with Integrated Concentration (MOSAIC).	81.135	2,460	-
			Total for George Washington University		**2,460**	**-**
Columbia University						
DEPARTMENT OF ENERGY	6930075	2(GG008553)	Device and Fabrication Technology for the Next Generation of Medium Voltage Vertical Transistors	81.135	354,915	-
			Total for Columbia University		**354,915**	**-**
Research Triangle Institute						
DEPARTMENT OF ENERGY	6931152	2-340-0214469-51895L	Engine fuel reformer for natural gas	81.135	20,798	-
			Total for Research Triangle Institute		**20,798**	**-**
University of Michigan						
DEPARTMENT OF ENERGY	6931203	3003222367	Consortium for Verification Technology (CVT)	81.113	572,400	-
			Total for University of Michigan		**572,400**	**-**
Brookhaven National Laboratory						
DEPARTMENT OF ENERGY	6934084	312673	Beam Energy Scan Theory Collaboration	81.RD	3,164	-
DEPARTMENT OF ENERGY	6934181	313021	Transverse Momentum Dependent Parton Structure Collaboration	81.RD	68,779	-
DEPARTMENT OF ENERGY	6938035	NO. 343173	Gas Injection and NMR for a Polarized 3He Ion Source at RHIC	81.RD	15,787	-
DEPARTMENT OF ENERGY	6938641	NO. 347538	Time-resolved imaging of sub-10 nm skyrmions in ferrimagnets and synthetic antiferromagnets	81.RD	8,934	-
DEPARTMENT OF ENERGY	6937844	SUBCONTRACT NO. 34510	High Intensity Polarized Electron Source	81.RD	87,238	-
			Total for Brookhaven National Laboratory		**183,902**	**-**
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	92,280	-
			Total for University of New Mexico		**92,280**	**-**
UT- Battelle LLC						
DEPARTMENT OF ENERGY	6933205	4000102892	The Consortium for Advanced Simulation of Light Water Reactors (CASL)	81.RD	1,457,426	-

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DEPARTMENT OF ENERGY	6934834	4000149783	Development of Next Generation Slicing Software for Additive Manufacturing	81.RD	73,461	-
DEPARTMENT OF ENERGY	6936739	4000155797	Coupled Monte Carlo Neutronics and Fluid Flow Simulation of Small Modular Reactors (ExaSMR)	81.RD	573,930	-
DEPARTMENT OF ENERGY	6937872	4000159358	Development of Next Generation Slicing Software for Additive Manufacturing	81.RD	86,765	-
DEPARTMENT OF ENERGY	6938156	4000160305	Optimization of sensor networks for improving climate model predictions	81.RD	86,220	-
DEPARTMENT OF ENERGY	6923222	SUBCONTRACT NO. 4000100452	ITER ECH Transmission Line System: Research and Scientific Support	81.RD	42,081	-
			Total for UT- Battelle LLC		**2,319,882**	**-**
University of Rochester						
DEPARTMENT OF ENERGY	6928068	416107-G	Magnet PTOF	81.049	542,485	-
			Total for University of Rochester		**542,485**	**-**
Pennsylvania State University						
DEPARTMENT OF ENERGY	6934571	5023-MIT-DOE-2377	Ensemble cell-wide kinetic modeling of anaerobic organisms to support fuels and chemicals production	81.049	132,789	-
DEPARTMENT OF ENERGY	6930592	5028-MIT-DOE-1090	Center for Lignocellulose Structure and Formation (CLSF)	81.049	183,798	-
DEPARTMENT OF ENERGY	6935460	5555-MIT-DOE-6825	Grid Independence and Uncertainty Quantification in Gas-Solid Flow Simulations	81.089	86,895	-
DEPARTMENT OF ENERGY	6936698	5652-MIT-EARPA-0801	Maximizing Fuel Economy through Real-Time, Collaborative, and Predictive Co-Optimization of Routing, Speed, and Powertrain Control	81.135	200,995	-
			Total for Pennsylvania State University		**604,477**	**-**
Ohio State University						
DEPARTMENT OF ENERGY	6936056	60058746	Alloying Agents to Stabilize Lanthanides Against Fuel Cladding Chemical Interaction: Tellurium and Antimony Studies	81.121	116,517	-
			Total for Ohio State University		**116,517**	**-**
Stanford University						
DEPARTMENT OF ENERGY	6931109	60779061-115503	Perovskite Solar Cells for High Efficiency Tandems	81.087	55,390	-
DEPARTMENT OF ENERGY	6937300	61559161-51077	Economic silicon heterojunction solar cells with optimized photon management	81.087	59,963	-
			Total for Stanford University		**115,353**	**-**

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State University of New York						
DEPARTMENT OF ENERGY	6930984	68799	EFRC:NorthEast Center for Chemical Energy Storage (NECCES)	81.049	188,961	-
			Total for State University of New York		**188,961**	**-**
University of Wisconsin						
DEPARTMENT OF ENERGY	6935633	704K303	Sodium cooled fast reactor key modeling and analysis for commercial deployment	81.121	74,552	-
			Total for University of Wisconsin		**74,552**	**-**
Superconductor Technologies, Inc.						
DEPARTMENT OF ENERGY	6937244	AGMT. DTD. 07/01/2017	Wire Improvement for HTS	81.087	114,038	-
			Total for Superconductor Technologies, Inc.		**114,038**	**-**
Advanced Conductor Technologies LLC						
DEPARTMENT OF ENERGY	6937596	AGMT. DTD. 08/01/2017	Stable, low-loss joints for high-temperature fusion magnets	81.049	41,079	-
			Total for Advanced Conductor Technologies LLC		**41,079**	**-**
Sandia National Laboratories						
DEPARTMENT OF ENERGY	6938128	AGREEMENT 1340868 / PO 1874220	Frameworks, Algorithms and Scalable Technologies for Mathematics (FASTMath) SciDAC Institute	81.RD	7,772	-
DEPARTMENT OF ENERGY	6933746	PO #1630435	Millimeter-wave Thermal Analysis for In-Process Assessment	81.RD	94,134	-
DEPARTMENT OF ENERGY	6933745	PO1619650/ CPA1340868	Utilization of CR39 on Z for DD yield, yield anisotropies, and neutron spectroscopy	81.RD	116,749	-
			Total for Sandia National Laboratories		**218,655**	**-**
Electroformed Nickel, Inc.						
DEPARTMENT OF ENERGY	6936346	AGREEMENT DATED 04/11/17	Demonstration of the technological capability for production of neutron-focusing nickel mirrors	81.049	37,751	-
			Total for Electroformed Nickel, Inc.		**37,751**	**-**
Philips Lumileds Lighting Company						
DEPARTMENT OF ENERGY	6932845	AGREEMENT DATED 9/1/2015	Improved InGaN LED System Efficacy and Cost via Droop Reduction	81.086	48,510	-
			Total for Philips Lumileds Lighting Company		**48,510**	**-**

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Faraday Technology, Inc						
DEPARTMENT OF ENERGY	6934779	AGREEMENT EFF. 08/12/2016	Micro-electrocatalytic Upgrading of Carbon Dioxide to Hydrocarbons	81.049	-10,987	-
DEPARTMENT OF ENERGY	6936384	RESEARCH AGREEMENT EFFECTIVE 4-12-2017	CO2 Reduction to Hydrocarbons via Copper Gas Diffusion Electrodes	81.049	45,000	-
DEPARTMENT OF ENERGY	6936385	RESEARCH AGREEMENT EFFECTIVE 4-12-2017	Electrodeposition of Sulfide Catalysts for Methane Up-conversion	81.049	45,000	-
DEPARTMENT OF ENERGY	6936670	SC 6305-1031	Microfluidic System for CO2 Reduction to Hydrocarbons	81.049	116,911	-
			Total for Faraday Technology, Inc		**195,924**	**-**
Dawn Research, Inc.						
DEPARTMENT OF ENERGY	6931946	AWD. DTD. 5/12/2015	SBIR Phase II: Development of low cost method for fabrication of metal neutron guides	81.049	16,003	-
			Total for Dawn Research, Inc.		**16,003**	**-**
Lawrence Livermore National Security, LLC						
DEPARTMENT OF ENERGY	6926820	B602126	Chemical Threat Responsive Carbon Nanotube Membranes	81.RD	138,491	-
DEPARTMENT OF ENERGY	6932165	B613027	High Density Implosions on OMEGA and the NIF	81.RD	466,834	-
DEPARTMENT OF ENERGY	6933555	B615534	Multi-Nuclear Burn Diagnostic Development	81.RD	430,055	-
DEPARTMENT OF ENERGY	6938345	B627203	Microscale biophysical analyses of algal bacterial interactions	81.RD	22,118	-
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	122,034	-
DEPARTMENT OF ENERGY	6936544	NO. B623207	Automatic Differentiation	81.RD	38,000	-
			Total for Lawrence Livermore National Security, LLC		**1,217,531**	**-**
Florida A&M University						
DEPARTMENT OF ENERGY	6937333	C-4979	CREST Center for Complex Materials Design for Multidimensional Additive Processing (CoMan)	47.076	38,789	-
			Total for Florida A&M University		**38,789**	**-**
Battelle Energy Alliance, LLC						
DEPARTMENT OF ENERGY	6936498	CONTRACT 112583 - RELEASE #13	LWR CORE ANALYSIS WITH RELAP-7 FLUIDS MODELS	81.RD	32,903	-
DEPARTMENT OF ENERGY	6933222	REL 009/CONTRACT 0112583	Neutron microscope to enable high-resolution neutron tomography at INL	81.RD	69,124	-

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DEPARTMENT OF ENERGY	6935703	RELEASE 00003/CONTRACT 00112583	INL-NUC Collaboration Activities at Massachusetts Institute of Technology	81.RD	58,211	-
DEPARTMENT OF ENERGY	6933641	RELEASE 10 / CONTRACT 112583	Implementation and Validation of Radiation Defect Cluster Dynamics in MOOSE	81.RD	82,360	-
DEPARTMENT OF ENERGY	6933632	RELEASE 11/CONTRACT 00112583	Integration of Nuclear and Renewables in Competitive Electricity Markets: Joint U.S.-Japan Study Phase II	81.RD	59,929	-
DEPARTMENT OF ENERGY	6936022	RELEASE 14 BMC00112583	Safety Margin Evaluation for Experiment Irradiation in ATR	81.RD	200,069	-
DEPARTMENT OF ENERGY	6931188	RELEASE NO 004 / CONTRACT NO 0112583	Development of State of the Art Capabilities to Support TREAT Modeling and Simulation	81.RD	-398	-
DEPARTMENT OF ENERGY	6931396	RELEASE NO. 005 / CONTRACT NO. 00112583	Cross Section Generation in High Fidelity Multi-Physics Simulations from High Fidelity Monte Carlo Calculations	81.RD	-9,254	-
DEPARTMENT OF ENERGY	6937440	RELEASE NO. 15 UNDER BLANKET MASTER NO. 112583	Modeling porous media impedance spectra	81.RD	51,485	-
DEPARTMENT OF ENERGY	6925178	RELEASE49/CONTRACT63	3117 Life Prediction of Spent Fuel Storage Canister Material	81.RD	18,976	-
			Total for Battelle Energy Alliance, LLC		**563,404**	**-**
Plasma Processes, LLC						
DEPARTMENT OF ENERGY	6936177	DE-SC0011895 / 6028-004-JF-102915REV2	Breakdown Resistant Refractory Metal Coatings for Field-Aligned ICRF Antennas	81.049	172,965	-
			Total for Plasma Processes, LLC		**172,965**	**-**
Free Form Fibers LLC						
DEPARTMENT OF ENERGY	6933442	DE-SC0011954	SBIR: AN ADDITIVE MANUFACTURING TECHNOLOGY FOR THE FABRICATION AND CHARACTERIZATION OF NUCLEAR REACTOR FUEL	81.049	69,222	-
			Total for Free Form Fibers LLC		**69,222**	**-**
Oregon State University						
DEPARTMENT OF ENERGY	6932973	G0157A-B	Computational and Experimental Benchmarking for Transient Fuel Testing	81.121	365,720	-
			Total for Oregon State University		**365,720**	**-**
Western Research Institute						
DEPARTMENT OF ENERGY	6938492	MIT17-10G663	Consortium for Production of Affordable Carbon Fibers (CPACF) in the U.S.	81.086	66,361	-

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			Total for Western Research Institute		**66,361**	**-**
Honeywell						
DEPARTMENT OF ENERGY	6933853	N000189586	Additive Manufacturing of Porous Solids	81.RD	159,024	-
DEPARTMENT OF ENERGY	6935787	N000189586, LINE 1, MOD 2	Additive Manufacturing of Porous Solids	81.RD	44,371	-
			Total for Honeywell		**203,395**	**-**
General Atomics						
DEPARTMENT OF ENERGY	6934540	PO #4500058260	MIT Collaboration for DIII-D Program	81.049	293,780	-
DEPARTMENT OF ENERGY	6936502	PO 4500068120	High Temperature Oxidation and Quench Studies of Accident Tolerant LWR Fuels	81.RD	70,018	-
DEPARTMENT OF ENERGY	6937870	PO# 4500071909	AToM: Advanced Tokamak Modeling Environment	81.049	113,387	-
			Total for General Atomics		**477,186**	**-**
University of Washington						
DEPARTMENT OF ENERGY	6933774	PO #BPO13556	Ultrafast Control of Emerging Electronic Phenomena in 2D Quantum Materials	81.049	38,101	-
DEPARTMENT OF ENERGY	6937599	UWSC10120	Ultrafast Control of Emerging Electronic Phenomena in 2D Quantum Materials	81.049	127,011	-
			Total for University of Washington		**165,112**	**-**
Ford Motor Company						
DEPARTMENT OF ENERGY	6928693	PO 14164101_001 SUBAWARD RQ13-23R05	Rapid Freeform Sheet Metal Forming: Technology Development and System Verification	81.086	73,977	-
			Total for Ford Motor Company		**73,977**	**-**
Princeton Plasma Physics Laboratory						
DEPARTMENT OF ENERGY	6933435	S014796-H	Transport and Turbulence Physics Studies and Data Analysis Collaboration on NSTX-U	81.RD	129,023	-
DEPARTMENT OF ENERGY	6936117	S015578-H	NSTX-U ROOT CAUSE ANALYSIS OF PF1-A COIL FAILURE SUPPORT	81.049	28,510	-
DEPARTMENT OF ENERGY	6936363	S015616-H	PF1 Coil Fabrication Support	81.049	146,800	-
DEPARTMENT OF ENERGY	6937617	S015850-H	Partnership Center for High -fidelity Boundary Plasma Simulation	81.RD	21,901	-
			Total for Princeton Plasma Physics Laboratory		**326,233**	**-**
Texas A & M						

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DEPARTMENT OF ENERGY	6933413	S162805	Advanced surface plasma nitriding for development of corrosion resistant and accident tolerant fuel cladding	81.121	5,830	-
			Total for Texas A & M		**5,830**	**-**
University of Arkansas						
DEPARTMENT OF ENERGY	6935475	SA1712153	Cybersecurity Center for Secure Evolvable Energy Delivery Systems (SEEDS)	81.112	79,513	-
			Total for University of Arkansas		**79,513**	**-**
AdvR, Inc.						
DEPARTMENT OF ENERGY	6932147	STTR AGREEMENT 06/23/2015 UNDER DE-SC0011377	STTR PH II: Fiber-coupled Optical Waveguide Cross-Correlator for Attosecond Timing Synchronization	81.049	64,775	-
			Total for AdvR, Inc.		**64,775**	**-**
University of California - Berkeley						
DEPARTMENT OF ENERGY	6937842	SUBAWARD 00009635/ PO BB00998750	Methods to Predict Thermal Radiation and to Design Scaled Separate and Integral Effects Testing For Molten Salt Reactors	81.121	128,391	-
			Total for University of California - Berkeley		**128,391**	**-**
FuelCell Energy						
DEPARTMENT OF ENERGY	6931727	SUBAWARD 10001437	Dual Mode Intermediate Temperature Fuel Cell: Liquid Fuels and Electricity	81.135	-51,329	-
			Total for FuelCell Energy		**-51,329**	**-**
University of Colorado Boulder						
DEPARTMENT OF ENERGY	6937968	SUBAWARD#: 1555955 PO# 1000976258	Design and Engineering of Synthetic Control Architectures	81.049	324,949	-
			Total for University of Colorado Boulder		**324,949**	**-**
Los Alamos National Security, L.L.C.						
DEPARTMENT OF ENERGY	6933394	SUBCONTRACT # 365489	Source-independent Converted Phase Imaging of MEQ Data to Provide Fracture Locations	81.RD	122,595	-
DEPARTMENT OF ENERGY	6934723	SUBCONTRACT #399489	Emergency Control of Power System Networks	81.RD	173,670	-
			Total for Los Alamos National Security, L.L.C.		**296,265**	**-**
SURA / Jefferson Lab						

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DEPARTMENT OF ENERGY	6935508	SUBCONTRACT JSA-17-C0086	GlueX DIRC Optical Boxes	81.RD	76,157	-
			Total for SURA / Jefferson Lab		**76,157**	**-**
UChicago Argonne, LLC						
DEPARTMENT OF ENERGY	6927797	SUBCONTRACT NO. 3F-31144	Joint Center for Energy Storage Research (JCESR)	81.RD	847,532	-
DEPARTMENT OF ENERGY	6937302	SUBCONTRACT NO. 7F-30180	Reaction Mechanism Generator (RMG) Software	81.RD	58,163	-
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	241,866	-
			Total for UChicago Argonne, LLC		**1,147,562**	**-**
Lawrence Berkeley National Laboratory						
DEPARTMENT OF ENERGY	6923287	SUBCONTRACT NO. 6947174	Natural Ventilation for Cooling in Commercial and Residential Buildings and Data Centers	81.RD	-6,120	-
DEPARTMENT OF ENERGY	6927681	SUBCONTRACT NO. 7056592	Design and Scalable Assembly of High Density Low Tortuosity Electrodes	81.RD	22,095	-
DEPARTMENT OF ENERGY	6928821	SUBCONTRACT NO. 7075314	High-throughput sorting of microbial cells with specific functional traits for single cell genomics by combining labeling with heavy water, Raman microspectroscopy, microfluidics and flow cytometry	81.RD	4,341	4,158
DEPARTMENT OF ENERGY	6931128	SUBCONTRACT NUMBER 7204982	Molecular Determinants of Community Activity, Stability and Ecology (MDCASE)	81.RD	242,553	-
			Total for Lawrence Berkeley National Laboratory		**262,869**	**4,158**
National Renewable Energy Laboratory						
DEPARTMENT OF ENERGY	6927932	UGA-0-41029-09	Sustainable Photovoltaics and Scalable Concentrating Solar Power (SERIIUS) - MIT	81.RD	45,472	6,191
DEPARTMENT OF ENERGY	6930867	UGA-0-41029-16/ER392000	Center for Next Generation of Materials by Design: Incorporating Metastablility	81.049	217,026	-
DEPARTMENT OF ENERGY	6933524	UGA-0-41029-18/ST6P1510	Bulk Defect Mitigation in Czochralski and Novel Silicon	81.049	97,260	-
DEPARTMENT OF ENERGY	6938354	UGA-0-41029-19	Economic Expertise to Support 2018 Update of CEMAC Benchmark Project	81.049	4,364	-
			Total for National Renewable Energy Laboratory		**364,121**	**6,191**
University of Texas - Austin						
DEPARTMENT OF ENERGY	6928873	UTA13-000874	Extreme-scale Bayesian inference for uncertainty quantification of complex simulations)	81.049	8,679	-

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DEPARTMENT OF ENERGY	6931207	UTA14-001222	Nuclear Technology R&D Strategies in an Era of Energy Price Uncertainty	81.121	101,806	-
DEPARTMENT OF ENERGY	6938299	UTA18-000276	Partnership for Multiscale Gyrokinetic (MGK) Turbulence	81.049	104	-
			Total for University of Texas - Austin		**110,588**	**-**
			TOTAL for Department of Energy		**13,394,258**	**10,349**

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DEPARTMENT OF HEALTH & HUMAN SERVICES						
Beth Israel Deaconess Medical Center						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6933877	01026851	Validating Biomarkers for the Prodrome and Transition to Psychosis in Shanghai	93.242	-8	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6936539	01027119	Complex function of Hsf1 in breast cancer	93.393	23,829	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6934879	01028330	Research, Resource for Complex Physiologic Signals	93.859	-13,657	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6935922	01029400	A Psychobiological Follow-up Study of Transition from Prodrome to Early Psychosis	93.242	28,189	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6937608	2R01GM104987-09	Research, Resource for Complex Physiologic Signals	93.859	523,087	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6932985	SUBAWARD NO. 01028471	A multi-faceted approach to identifying K-Ras synthetic lethal relationships	93.396	-35	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6937483	SUBAWARD NO. 01029424	A multi-faceted approach to identifying K-Ras synthetic lethal relationships	93.396	78,457	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6935428	SUBAWARD NO. 01029424.	A multi-faceted approach to identifying K-Ras synthetic lethal relationships	93.396	513	-
			Total for Beth Israel Deaconess Medical Center		**640,375**	**-**
University of California, Los Angeles						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6938069	0125 G VB305	Precision lung cancer therapy design through multiplexed adapter measurement	93.396	26,894	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6937422	0125 G VB518	Adapter-Layer RTK Signaling: Basic Understanding & Targeted DrugResistance	93.310	91,849	-
			Total for University of California, Los Angeles		**118,743**	**-**
Oklahoma Medical Research Foundation						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6933786	0280-04/MIT PO# S1704196-065	Analysis and Characterization of Trauma-Induced Coagulopathy	93.859	106,853	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6937213	0280-04/MIT/DARC_PILOT 1 PO S1803970	Duffy Antigen Receptor for Cytokines and Early IL-8 Mediated Neurophil Responses to Coagulation in Major Trauma	93.837	24,477	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6937214	0280-04/MIT/DARC_PILOT 2 PO S1803969	Human Neutrophil Elastase as a Mediator of Fibrinolysis Shutdown (Pilot 2)	93.837	27,937	-
			Total for Oklahoma Medical Research Foundation		**159,268**	**-**
Columbia University						

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DEPARTMENT OF HEALTH & HUMAN SERVICES	6934117	1(GG012140)/PO G10545	Analysis of Cancer Cell Metabolism in Diverse Environmental Conditions	93.396	144,488	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6937984	1(GG012271-01)	Motor neuron selector genes and mechanism of their action	93.853	139,200	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6936354	1(GG012741-01)	The role of stem cells and the microenvironment in gastrointestinal cancers	93.393	10,833	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6936432	2(GG012789-02)	The Role of the Microenvironment in Barrett's Esophagus	93.397	49,314	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6934861	3(GG012366-07) / G11187	Integrated heart-liver-vascular systems for drug testing in human health and disease (Year 5)	93.286	40,087	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6937907	GG012741-02	The role of stem cells and the microenvironment in gastrointestinal cancers	93.393	17,216	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6927142	PO G11501 AWARD 1 (GG011803)	Motor Neuron Selector Genes and Mechanism of Their Action	93.853	294,957	-
			Total for Columbia University		**696,095**	**-**
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	-9,044	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6938098	100107-00006 (HH0448) PO#EP0167938	Embedded Peri-Clinical Research Platform for Accelerated Medical Sensor/Algorithm Evaluation & Translation	93.350	7,870	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6935658	5014371-SERV/U24TR001609	Johns Hopkins-Tufts Trial Innovation Center	93.350	128,552	-
			Total for Tufts Medical Center		**127,379**	**-**
Dana Farber Cancer Institute						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6928787	1006718	Antigen Presentation and T Cell Programmimg in Human Autoimmune Diseases	93.855	81,493	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6926764	1214503	Assaying GBM growth and therapy response in single cells and tumorspheres (PQ17)	93.394	83,443	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6927451	1216401	Impact of MHC Genotype on Ex Vivo T cell Function in Type 1 Diabetes	93.847	0	-565
DEPARTMENT OF HEALTH & HUMAN SERVICES	6937438	1225411/PO#1034483	DFHCC SPORE in Prostate Cancer - Project 1	93.397	22,690	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6932836	1238305	Eliciting B cells to produce anti-HIV gp41 MPER-specific neutralizing antibodies	93.855	9,865	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6932882	1238405	Eliciting B cells to produce anti-HIV gp41 MPER-specific neutralizing antibodies (Supplement)	93.855	3,279	-

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DEPARTMENT OF HEALTH & HUMAN SERVICES	6934774	1282101	Targeting immunogenicity to the MPER hinge and C-helix for BNAb elicitation	93.855	32,144	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6936865	1282102	Targeting immunogenicity to the MPER hinge and C-helix for BNAb elicitation	93.855	30,834	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6934749	1282601	Targeting immunogenicity to the MPER hinge and C-helix for BNAb elicitation-Project 2	93.855	37,742	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6936864	1282602	Targeting immunogenicity to the MPER hinge and C-helix for BNAb elicitation-Project 2	93.855	320,356	-
			Total for Dana Farber Cancer Institute		**621,846**	**-565**
Tufts University						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6935267	100892-00001	Development of Blood Pressure Imager	93.286	80,858	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6934832	HH4976	Models to Predict Protein Biomaterial Performance	93.286	7,301	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6936620	HH4977	Competing Segment: Models to Predict Protein Biomaterial Performance	93.286	179,961	-
			Total for Tufts University		**268,120**	**-**
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	83,150	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6936867	S9001710	Infection-homing nanosystems as antibacterial therapeutics-delivery platforms	93.855	219,044	-
			Total for University of California-San Diego		**302,194**	**-**
Stowers Institute for Medical Research						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6934280	102108 NIH0070	Integrated Approaches to Understanding Circuit Function in the Nervous System.	93.173	239	-
			Total for Stowers Institute for Medical Research		**239**	**-**
Brigham & Women's Hospital						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6925790	107958	Development of FcRn-Targeted Nanoparticles for Efficient Oral Delivery of Insulin	93.286	440	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6932413	112548	Monitoring peripheral blood leukocyte and immune responses in health and disease	93.855	209,105	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6933473	113786	PARP9 and PARP14 in atherosclerosis	93.837	35,455	-

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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	6928788	113856	Multi-Scale Modeling of Sleep Behaviors in Social Networks	93.859	54,753	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6934372	114169	Neuroimaging Analysis Center (NAC)	93.286	142,223	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6938401	114237	Mucins and immune cell interactions in ovarian cancer pathogenesis & progression	93.396	175,058	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6936292	116900	Macrophage-derived microcalcificaitons	93.837	36,340	-
			Total for Brigham & Women's Hospital		**653,373**	**-**
St. Jude Medical						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6937719	111942050-7790535	Mechanisms to diversify repertoire and modify T cell activity after infection	93.855	38,300	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6935135	11942040-7719177	Mechanisms to diversify repertoire and modify T cell activity after infection	93.855	57,924	-
			Total for St. Jude Medical		**96,224**	**-**
Harvard School of Public Health						
DEPARTMENT OF HEALTH & HUMAN SERVICES	2746118	112497-5069710	Safety and Health Management of Hazards Associated with Emerging Technologies	93.143	20	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6935148	112545-5095784	Safety and Health Management of Hazards Associated with Emerging Technologies	93.143	5,492	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6937373	113113-5096677	Engineered Nanomaterial Synthesis, Characterization and Method Development Center for Nano-safety Research	93.113	104,946	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6937001	114506-5096447	Powering whole genome sequence-based genetic discovery for common human diseases	93.172	84,295	-
			Total for Harvard School of Public Health		**194,753**	**-**
Harvard University						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6938207	113098-5106858	Does the cell jamming principle extend from the 2D epithelial sheet to the 3D tumor spheroid?	93.396	85,040	-
			Total for Harvard University		**85,040**	**-**
Boston Biomedical Innovation Center						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6935091	115622	Minimally invasive tissue engineered therapies for acute airway injury	93.837	248,029	-
			Total for Boston Biomedical Innovation Center		**248,029**	**-**

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Seattle Children's Hospital						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6937901	11607SUB	Novel Biologic Therapies for BMT: Mechanistic Evaluation in Rhesus Macaques	93.839	46,786	-
			Total for Seattle Children's Hospital		**46,786**	**-**
Harvard Medical School						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6935932	149855.5100033.0402	Glycan Biomarkers for Rapid and Inexpensive Point-of-Care Diagnosis of Latent and Active Tuberculosis	93.855	121,566	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6937936	152447.5074647.0407	Neuropsychiatric Genome-Scale and RDOC Individualized Domains (N-GRID)	93.242	77,938	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6936632	152448.5079089.0408	Patient - Centered Information Commons	93.866	200,854	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6931022	152754.5068079.0002	Targeting a Novel Regulator of Brain Aging and Alzheimer's Disease	93.866	282,575	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6935049	153032.5091220.0202	4D Nucleome Network Data Coordination and Integration Center	93.393	30,447	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6937730	153032.5091220.0302	4D Nucleome Network Data Coordination and Integration Center	93.393	46,518	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6936113	153036	Training Grant-Tristan Naumann	93.879	39,033	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6935961	BERNHARDT_TOM_BA_152644	Letter Agreement: Michael Tom Spring 2017-Fall 2018	93.855	7,338	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6938667	RENCSOK-001	Billing Agreement – Emily Rencsok DF-HCC SPORE in Prostate Cancer - Project 1	93.397	2,332	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6934416	SUBAWARD 152772.5096243.0205	Center for Genomically Engineered Organs	93.172	10,444	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6937138	SUBAWARD 152772.5096243.0305	Center for Genomically Engineered Organs	93.172	56,845	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6937980	SUBAWARD NO. 117954	Integrative multi-omic discovery of proximal mechanisms driving age-dependent neurodegeneration	93.866	31,673	-
			Total for Harvard Medical School		**907,563**	**-**
Research Foundation S.U.N.Y.						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6931096	15-01	Translational control of ROS management	93.113	78,104	-
			Total for Research Foundation S.U.N.Y.		**78,104**	**-**
New York University						

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DEPARTMENT OF HEALTH & HUMAN SERVICES	6933950	15-A1-00-002875-01/PO NO. 104698	Thalamic reticular nucleus-specific Cre mice for functional interrogation	93.242	-152	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6935163	17-A0-00-006701-01	Novel Diagnostics for Glaucoma Structure and Function	93.867	14,187	-
			Total for New York University		**14,035**	**-**
Leidos Biomedical Research Inc.						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6933607	16X070Q	Malaria Antibody Function	93.RD	18,465	-
			Total for Leidos Biomedical Research Inc.		**18,465**	**-**
Research Foundation of SUNY Polytechnic Institute						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6934994	17-80	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	65,468	-
			Total for Research Foundation of SUNY Polytechnic Institute		**65,468**	**-**
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	88,248	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6938652	OSP2016196	Center for Reproducible Neuroimaging Computation (CRNC) - Project 2	93.286	7,012	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6930349	PO WA00463637 / RFS2015003	Structural annotation of the human genome	93.172	47,612	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6938650	WA00434051/OSP2016201	Center for Reproducible Neuroimaging Computation (CRNC)	93.286	32,365	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6936130	WA00536446 / OSP2016201	Center for Reproducible Neuroimaging Computation (CRNC)	93.286	21,436	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6936131	WA00536449/OSP2016196	Center for Reproducible Neuroimaging Computation (CRNC) - Project 2	93.286	135,938	-
			Total for University of Massachusetts		**332,612**	**-**
Health Resources in Action						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6937415	1R25OD023756	LEAH-Knox Scholars Program in Biomedical Research	93.859	16,905	-
			Total for Health Resources in Action		**16,905**	**-**
University of California						

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DEPARTMENT OF HEALTH & HUMAN SERVICES	6936684	2016-3340	From structure to therapy: the TRiC Chaperonin network in Huntington's disease	93.855	284,454	-
			Total for University of California		**284,454**	**-**
Allen Institute for Brain Science						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6937893	2017-0572 PO# AIP044827	A comprehensive whole-brain atlas of cell types in the mouse	93.242	102,497	-
			Total for Allen Institute for Brain Science		**102,497**	**-**
The Wellcome Trust						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6934170	2186-05	GENCODE: Comprehensive gene annotation for human and mouse	93.172	1,475	-
			Total for The Wellcome Trust		**1,475**	**-**
Massachusetts General Hospital						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6935291	219396 - K. CHANG	Letter of Agreement: Ken Chang	93.279	3,820	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6937019	223253	SPORE: Targeted Therapies for Gliomas	93.397	-127	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6930051	224256	Stable, High Relaxivity MRI Contrast Agents	93.286	78,079	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6937783	224515	Letter Agreement: John Samuelsson Spring 011618 - 053118	93.286	23,692	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6935552	224530	Bernhard Zimmermann-Billing Agreement MGH	93.286	-4,560	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6931354	225360	NIRF-OFDI of inflammation in atheroma progression and stent complications	93.837	10,992	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6937780	225706	Continuity of the Limbic Circuit through the Basal Ganglia URF (AWDC524789)	93.242	35,602	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6932581	226025	MRI-GENetics Interface Exploration (MRI-GENIE) Study	93.286	33,520	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6932337	226205	An integrated Closed Loop Feedback System for Treatment of Cardio metabolic Disease	93.855	36,622	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6937257	226852	Letter Agreement: Justin Rice Fall 090117 - 011518	93.855	2,254	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6934681	227085	Letter Agreement: Sheldon Kwok	93.395	-14	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6935740	227296	Optimizing human B and T cell vaccines against HIV using humanized BLT mice	93.855	303,493	-

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DEPARTMENT OF HEALTH & HUMAN SERVICES	6935875	227341	Letter Agreement: Ling-Ya "Monica" Chao Spring 2017-Fall 2018	93.853	7,338	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6937770	227602	Letter Agreement: John Samuelsson Fall 090117 - 011518	93.286	23,692	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6935177	228193	Injury-inducible Activation of Cardiomyocyte Proliferation	93.837	81,350	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6937930	228314	Natural language processing for characterizing psychopathology	93.242	75,258	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6935330	228369	SPORE: Targeted Therapies for Gliomas	93.397	21,835	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6936866	228599	Letter Agreement : Antonie Ramier 06/01/2017 - 05/31/2018	93.286	43,665	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6937199	229297	Letter Agreement : Sheldon Kwok 06/01/2017 - 05/31/2018 #1	93.310	46,932	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6936861	229297	Letter Agreement: Sangyeon Federick Cho 060117 - 053118	93.310	31,762	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6936859	229297 - DANNENBERG	Letter Agreement: Paul Dannenberg 060117 - 053118 #2	93.310	46,929	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6935377	229354	Improving Human fMRI through Modeling and Imaging Microvascular Dynamics	93.242	212,575	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6937769	229386	Letter Agreement: Giorgia Grisot 06012017- 05312018 #1	93.286	11,835	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6935622	229428	Filtered point process inference framework for modeling neural data	93.286	154,614	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6935800	229825	Role of miR-222 in pathological hypertrophy and heart failure	93.837	13,347	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6935992	229916	Interfering with the macrophage life cycle in atherosclerosis	93.837	136,121	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6936300	230321	Clinical Research for the Improved Prevention, Diagnosis and Treatment of Vocal Hyperfunction	93.173	113,156	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6937341	230837	Reengineering obesity-induced abnormal microenvironment to improve PDAC Treatment	93.396	53,319	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6937579	231367	Harnessing Diverse BioInformatic Approaches to Repurpose Drugs for Alzheimer?s Disease	93.866	65,355	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6937884	231617	An integrated translational approach to overcome drug resistance	93.353	63,205	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6938426	231833	Unique Value of Real Time Shear Stress to Enhance Coronary Disease Management	93.837	11,003	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6936128	AGREEMENT 230327	Development and testing of novel hydration sensors for use in pediatrics	93.286	9,700	-

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DEPARTMENT OF HEALTH & HUMAN SERVICES	6935499	PS# 229172	A systems biology approach to fingerprint HIV immune defense in Elite Controllers	93.837	4,865	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6926604	SUBAWARD 227784	Hypoxia-induced Metabolic Changes in Cancer	93.866	-28,007	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6937425	SUBAWARD 231183	Parallel Excitation Methods for High Field MRI, NIH, PA-16-160	93.286	95,626	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6937453	SUBAWARD NO. 231125	Sleep-dependent Memory Processing in Schizophrenia	93.279	89,826	-
			Total for Massachusetts General Hospital		**1,908,673**	**-**
Scintillon Institute						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6934824	22136-207-450	Novel Proteomics Approach to HIV-Associated Neurocognitive Disorder & Drug Abuse	93.279	5,616	-
			Total for Scintillon Institute		**5,616**	**-**
La Jolla Institute for Allergy and Immunology						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6934303	22496-33-382	Maximizing germinal centers and somatic hypermutation to HIV Env immunogens	93.855	-1,017	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6935739	22497-33-382	Maximizing germinal centers and somatic hypermutation to HIV Env immunogens	93.855	83,662	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6938434	22498-33-382	Maximizing germinal centers and somatic hypermutation to HIV Env immunogens	93.855	1,560	-
			Total for La Jolla Institute for Allergy and Immunology		**84,204**	**-**
National Bureau of Economic Research, Inc.						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6936576	4117B.MIT	Determinants of Medical Spending for the Elderly: Insurance, Patents, Providers	93.866	308,555	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6937964	4125B.05.MIT	Empirical Studies of the Development and Diffusion of Medical Technologies	93.866	70,105	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6937744	4142F.23.00.00	Risk, Insurance and the Family	93.865	25,675	-
			Total for National Bureau of Economic Research, Inc.		**404,335**	**-**
Institut Pasteur						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6938474	4300002726	Dynamic 3D folding of the mammalian genome: molecular determinants and impact on gene expression in vivo	93.393	32,462	-
			Total for Institut Pasteur		**32,462**	**-**

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Boston University						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6929218	4500001446	Causal Analysis of Electrically Connected Neural Networks	93.242	2,349	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6932552	4500001882	Prefrontal and Medial-Temporal Interactions in Memory	93.242	13,574	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6933002	4500001922	Engineering Multicellular Tissue Structure, Function, and Vascularization	93.286	447,414	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6933804	4500002031	Inflammation in human obesity and type 2 diabetes	93.847	15,436	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6934967	4500002153	Center for Innovation in Point of Care Technologies for the Future of Cancer Care	93.286	9,225	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6935452	4500002343	Modeling bi-directional signaling and cytoskeletal dynamics in 3D cell migration	93.393	229,597	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6937256	50203805	Letter Agreement : Hyun Ho Greco Song 060117-053118	93.286	63,774	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6937260	50203805	Letter Agreement: Shoshana Das 110117 - 053118	93.286	15,084	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6938558	AGMT REF. #50204332 / PO# 8600024145"	Letter Agreement: Shoshana Das 04/1/18 - 05/31/18	93.837	12,687	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6938063	SUBAWARD NO.4500002555	Integrated compressive sensing microscope for high-speed biological imaging	93.867	46,091	-
			Total for Boston University		**855,231**	**-**
Northeastern University						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6933466	500449-78050	Predictability in Complex Object Control	93.865	102,052	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6935967	500489-78051	GuMI: New In Vitro Platforms to Parse the Human Gut Epithelial-Microbiome-Immune Axis	93.286	763,435	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6935732	500514-78051	Quantification of Predictive Motor Impairments in Individuals with ASD	93.865	102,528	-
			Total for Northeastern University		**968,015**	**-**
The Broad Institute, Inc.						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6937040	5500000814-5000091	SYSTEMATIC IDENTIFICATION OF ONCOGENIC KRAS SYNTHETIC LETHAL INTERACTIONS	93.396	272,337	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6934900	5500000814-5000092	SYSTEMATIC IDENTIFICATION OF ONCOGENIC KRAS SYNTHETIC LETHAL INTERACTIONS	93.396	71,843	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6937168	5610221-5500000694	There and Back Again: Epigenetic	93.310	351,368	-

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DEPARTMENT OF HEALTH & HUMAN SERVICES	6932661	5610222-5500000694	There and Back Again: Epigenetic	93.310	-100,898	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6934716	5610223-5500000694	There and Back Again: Epigenetic	93.310	-24,288	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6935801	5700172-5500000731	RNA based diagnostics for rapid pathogen identification and drug resistance	93.855	365,222	-
			Total for The Broad Institute, Inc.		**935,584**	**-**
The Scripps Research Institute						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6934343	5-52765	CHAVI-ID: Research Focus 2	93.855	75,329	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6936745	5-53276	CHAVI-ID: Research Focus 2	93.855	366,518	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6937773	5-53446	S-Nitrosylation-induced posttranslational modification and aberrant cell signaling in sporadic Alzheimer's disease	93.866	138,629	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6938790	5-53702	S-Nitrosylation-induced posttranslational modification and aberrant cell signaling in sporadic Alzheimer's disease	93.866	11,286	-
			Total for The Scripps Research Institute		**591,762**	**-**
University of Pennsylvania						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6935750	565369	A vascularized three-dimensional biomimetic for islet function and physiology	93.847	27,963	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6938240	573341	Recording Neural Activities onto DNA	93.242	84,595	-
			Total for University of Pennsylvania		**112,558**	**-**
Northwestern University						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6936799	60039739 MIT	Spatio-temporal organization of chromatin and information transfer in cancer	93.397	86,905	-
			Total for Northwestern University		**86,905**	**-**
Ohio State University						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6935766	60043772-MIT; PO RF01470148	A model-based examination of behavioral and social science workforce: Improving health outcomes	93.859	84,574	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6938231	60043772-MIT; PO RF01508164	A model-based examination of behavioral and social science workforce: Improving health outcomes	93.859	51,194	-
			Total for Ohio State University		**135,768**	**-**

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Mayo Clinic						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6931979	64016218	caCDE-QA: A Quality Assurance Platform for Cancer Study Common Data Elements	93.394	-5,784	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6938482	MAS-237886/PO# 65844500	Therapeutic modulation of the phagocytosis axis as a novel glioblastoma immunotherapy	93.853	2,284	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6936547	PO 65286973	Mechanisms of prolonged initial disease-free survival in glioblastoma	93.396	121,074	-
			Total for Mayo Clinic		**117,574**	**-**
Cold Spring Harbor Laboratory						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6938260	64580127/PO# 921003-SV	A High Resolution Cell Type Atlas of the Mouse Forebrain.	93.242	201,054	-
			Total for Cold Spring Harbor Laboratory		**201,054**	**-**
The Research Institute at Nationwide Children's Hospital						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6934118	82114516	Role of stress-induced reduction in Lactobacillus reuteri on colonic inflammation	93.213	1,846	-
			Total for The Research Institute at Nationwide Children's Hospital		**1,846**	**-**
Greenwood Genetic Center						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6933107	82561-01	Apnea index as an outcome measure of IGF-1 treatment of Rett syndrome	93.865	7,042	-
			Total for Greenwood Genetic Center		**7,042**	**-**
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	115,008	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6934999	9574SC	PROJECT 1: Defining the unique properties of the distinct signaling machinery used by TCR	93.855	62,156	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6935000	9583SC	PROJECT 2: Defining the unique properties of the distinct signaling machinery used by TCR	93.855	131,748	-
			Total for University of California - San Francisco		**308,912**	**-**
University of Southern California						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6937830	96266729	Anatomical characterization of neuronal cell types of the mouse brain	93.242	113,486	-
			Total for University of Southern California		**113,486**	**-**
University of Minnesota						

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DEPARTMENT OF HEALTH & HUMAN SERVICES	6937571	A006079901	Robotic platform for high-density in vivo intracellular recording from mammalian circuits	93.853	75,910	-
			Total for University of Minnesota		**75,910**	**-**
University of California/Davis						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6937292	A18-0226-S002	Facile Synthesis of Microbial Polysaccharides	93.310	221,959	-
			Total for University of California/Davis		**221,959**	**-**
Superconducting Systems, Inc.						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6938777	AGMT. DTD. 9/22/15	Compact light weight superconducting bending magnets for gantries	93.395	12,427	-
			Total for Superconducting Systems, Inc.		**12,427**	**-**
Boston Medical Center						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6937014	AGREEMENT 4292	Biomarkers and Mechanisms of Paucibacillary and Latent Tuberculosis	93.855	116,079	-
			Total for Boston Medical Center		**116,079**	**-**
Nectome						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6935526	AGREEMENT DAETD 9/21/16	Systems for whole-brain nanoscale preservation/imaging	93.242	94,285	-
			Total for Nectome		**94,285**	**-**
Boulder Nonlinear Systems Inc.						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6935482	AGREEMENT DATED 9/27/16	A Next-Generation Spatial Light Modulator for Mapping of Neural Networks	93.286	134,906	-
			Total for Boulder Nonlinear Systems Inc.		**134,906**	**-**
Umech Technologies						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6935528	AGREEMENT DATED NOVEMBER 2016	3D Tessellation Imaging	93.242	10,474	-
			Total for Umech Technologies		**10,474**	**-**
Visterra, Inc.						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6935011	AGREEMENT EFF. 09/01/2016	A library of immunoaffinity reagents for RNA modifications	93.279	17,090	-
			Total for Visterra, Inc.		**17,090**	**-**

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Ension, Inc.						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6935051	AGREEMENT EFFECTIVE 08/15/16	Magnetically-Levitated Motor/Impeller in a Blood Pump-Oxygenator for Extracorporeal Pediatric Life Support	93.837	59,987	-
			Total for Ension, Inc.		**59,987**	**-**
Integrated Laboratory Systems, Inc.						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6930834	AGREEMENT EFFECTIVE 9/26/14	SBIR CometChip: Development of a high throughput DNA damage assay in hepatocytes	93.113	261,073	-
			Total for Integrated Laboratory Systems, Inc.		**261,073**	**-**
University of California - Irvine						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6932202	AI114625/SUBAWARD 2015-3206	Development of siderophore-based vaccines against non-typhoidal Salmonella infection	93.855	21,424	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6937833	SUBAWARD NO. 2014-3129	Neuron and Glial cellular signatures from normal and diseased iPS cells	93.853	284,320	-
			Total for University of California - Irvine		**305,745**	**-**
Yale University						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6928682	C14A11716 (A09395)	High-throughput, multiplexed detection of miRNA biomarkers in single cancer cells	93.396	4,824	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6935083	GK000523 (CON-80000585)	Dynamic Neuroimmune Profiling in Patients with Acute Intracerebral Hemorrhage.	93.853	199,365	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6937723	GR100963(CON-80001033)	Costimulatory Mechanisms of Autoimmunity	93.866	163,674	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6928778	M14A11743(A09391)	Modeling human phosphorylation networks through kinome-wide profiling	93.859	139,367	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6936069	M17A12653(A10974)	Systems Immune Profiling of Divergent Responses to Infection	93.855	329,763	-
			Total for Yale University		**836,993**	**-**
Seacoast Science, Inc.						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6934645	DC084/16-0816SC	Advanced Polymer-Based Micro-sensor for Radiation Detection and Measurement	93.113	6,554	-
			Total for Seacoast Science, Inc.		**6,554**	**-**
University of Kansas						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6935990	FY2017-077	Microfluidic Integrative Circulating miRNA Profiling for Cancer Diagnosis	93.286	57,353	-

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			Total for University of Kansas		**57,353**	**-**
Children's Hospital Boston						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6935303	GENFD0001152559	Noninvasive Realtime Assessment of Placental Structure and Function with Novel MR Imaging Methods	93.865	87,824	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6936020	GENFD0001240500	Customized stem cells for clinical application in blood disorders	93.847	31,741	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6937612	GENFD0001332333	Customized stem cells for clinical application in blood disorders	93.847	147,433	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6937622	GENFD0001351238	Noninvasive Realtime Assessment of Placental Structure and Function with Novel MR Imaging Methods	93.865	117,326	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6938552	GENFD0001442726	Advanced Fetal Imaging	93.286	45,881	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6934415	PO#0000704243	Gastrointestinal Microflora Changes in Children Treated with Proton Pump	93.847	40,197	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6933113	RSTFD0000659589	Generating Multiple Circuit and Neuron Type Specific AAV Vectors With Cross-Species Applicability	93.242	-476	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6936340	RSTFD0000689449	Advanced Fetal Imaging	93.286	151,247	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6934720	RSTFD0000709815	Generating Multiple Circuit and Neuron Type Specific AAV Vectors With Cross-Species Applicability	93.242	29,837	-
			Total for Children's Hospital Boston		**651,009**	**-**
Janssen Vaccines & Prevention B.V.						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6936202	HHSN272200800056C	Phenotypic and transcriptomic correlates of immunity for filovirus vaccination	93.RD	68,818	-
			Total for Janssen Vaccines & Prevention B.V.		**68,818**	**-**
Mount Sinai Medical Center						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6933839	ISMMS NO. 0258-0509/HHSN272201400008C	NAIAD Centers of Excellence for Influenza Research and Surveillance	93.RD	-4,705	-
			Total for Mount Sinai Medical Center		**-4,705**	**-**
Mayo Clinic Rochester						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6936768	MAS-228292 PO#65353103	The Mayo GBM Xenograft National Resource	93.853	62,393	-
			Total for Mayo Clinic Rochester		**62,393**	**-**
Forsyth Institute						

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DEPARTMENT OF HEALTH & HUMAN SERVICES	6938467	MIT027850-2605	The Syngenic DNA and uPOET Platform: Overcoming Innate Barriers to Genetic Engineering in Bacteria	93.121	201,119	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6931386	SUBCONTRACT NO. MIT024468-2495	Cultivation, Nature, Ecology & Pathogenicity of the Uncultivated Oral Microbiome	93.121	55,498	-
			Total for Forsyth Institute		**256,617**	**-**
University of Pittsburgh						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6933995	NO. 0048768 (127337-1)	Spatial Segregation of Cell Functioning During Motility	93.859	68,588	-
			Total for University of Pittsburgh		**68,588**	**-**
University of Massachusetts Medical Center						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6937122	OSP2018017/PO# WA00597773	Targeting proteotoxic stress responses in liver fibrosis	93.273	48,463	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6933151	WA00343851/RFS2016059	EDAC: Encode Data Analysis Center	93.172	-80	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6935206	WA00474873/OSP2017050	Center for 3D Structure and Physics of the Genome	93.310	47,942	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6935160	WA00474875/OSP2017051	Center for 3D Structure and Physics of the Genome	93.310	13,948	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6935473	WA00494076/OSP2017077	EDAC: ENCODE Data Analysis Center	93.172	690	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6936250	WA00540618/OSP2017186	EDAC: ENCODE Data Analysis Center	93.172	141,789	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6937640	WA00620167 / OSP2017050	Center for 3D Structure and Physics of the Genome	93.310	242,781	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6937565	WA00620169/OSP2017052	Center for 3D Structure and Physics of the Genome	93.310	78,796	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6938367	WA00665463/OSP2017186	EDAC: ENCODE Data Analysis Center	93.172	69,367	-
			Total for University of Massachusetts Medical Center		**643,695**	**-**
Texas Biomedical Research Institute						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6936815	PO 39803	Defense-in-depth against mucosal HIV clade C invasion	93.855	324,363	-
			Total for Texas Biomedical Research Institute		**324,363**	**-**
University of Colorado Boulder						

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DEPARTMENT OF HEALTH & HUMAN SERVICES	6932230	PO#1000513987 SUBAWARD#1552654	Genetic Association Meta-Analyses of Smoking and Drinking for the Sequencing Age	93.279	80,326	-
			Total for University of Colorado Boulder		**80,326**	**-**
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	121,912	-
			Total for University of Florida		**121,912**	**-**
LeafLabs, LLC						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6934221	R43MH109332-01	High Speed, Multi-sensor Light Field Deconvolution Microscopy for Whole Brain Recording of Neuronal Activity	93.242	97,328	-
			Total for LeafLabs, LLC		**97,328**	**-**
Case Western Reserve University						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6935084	RES511404	Magnetic Resonance Fingerprinting (MRF) for Improved High Field MR	93.286	121,194	-
			Total for Case Western Reserve University		**121,194**	**-**
Magee-Womens Research Institute & Foundation						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6932950	RSA 3503	Extracellular vesicles and their ncRNAs cargo as markers of trophoblast injury	93.865	44,321	-
			Total for Magee-Womens Research Institute & Foundation		**44,321**	**-**
European Bioinformatics Institute						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6937688	SUBAWARD # 2582 FEDERAL # 2U41HG007234-05	GENCODE: comprehensive genome annotation for human and mouse	93.172	165,298	-
			Total for European Bioinformatics Institute		**165,298**	**-**
Brown University						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6935324	SUBAWARD 00000624	Multiscale Modeling of Sickle Cell Anemia: Methods and Validation	93.839	251,647	-
			Total for Brown University		**251,647**	**-**
Rehabilitation Institute of Chicago						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6930094	SUBAWARD AGREEMENT # 3024	Recording Neural Activities onto DNA	93.242	4,129	-

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			Total for Rehabilitation Institute of Chicago		**4,129**	**-**
University of Michigan						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6934493	SUBAWARD NO. 3004053346	An Accessible Toolbox for Comprehensive Analysis of Neural Tissue Architecture	93.242	201,594	-
			Total for University of Michigan		**201,594**	**-**
Solid Material Solutions, LLE						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6937472	SUBCONTRACT EFFECTIVE 08/15/2017	SBIR: Persistent-mode, liquid-helium-free, robust Bi2212 magnets for MRI and >1GHz NMR	93.286	39,971	-
			Total for Solid Material Solutions, LLE		**39,971**	**-**
CREARE, Incorporated						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6937324	SUBCONTRACT NO. 89237	Lab Drone System	93.RD	61,209	-
			Total for CREARE, Incorporated		**61,209**	**-**
The Children's Hospital Los Angeles						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6937370	TGF010062-Q	Step-Up Mentor Award Bear	93.279	540	-
			Total for The Children's Hospital Los Angeles		**540**	**-**
University of Connecticut Health Center						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6932765	UCHC6-66263781	Comprehensive Analysis of Functional RNA Elements Encoded in the Human Genome	93.172	-7	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6934876	UCHC6-79257861	Comprehensive Analysis of Functional RNA Elements Encoded in the Human Genome	93.172	7,470	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6938545	UCHC7-101012378	A Comprehensive Functional Map of Human Protein-RNA Interactions	93.172	6,381	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6936790	UCHC7-88094960-A3	Comprehensive Analysis of Functional RNA Elements Encoded in the Human Genome	93.172	212,906	-
			Total for University of Connecticut Health Center		**226,750**	**-**
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	94,415	-
			Total for University of Texas - Austin		**94,415**	**-**
Vanderbilt University Medical Center						

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DEPARTMENT OF HEALTH & HUMAN SERVICES	6934526	VUMC 36112	Etiologic Studies of Gastric Carcinoma	93.393	157,692	-
			Total for Vanderbilt University Medical Center		**157,692**	**-**
Wayne State University						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6932770	WSU15133	Computational and Functional Characterization of the Molecular Steps in Membran	93.242	15,612	-
			Total for Wayne State University		**15,612**	**-**
Washington University in St. Louis-School of Medicine						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6933957	WU-16-329	Role of IL-17 in Protective Vaccine-induced Immune Responses Against Tuberculosis	93.837	44,183	-
			Total for Washington University in St. Louis-School of Medicine		**44,183**	**-**
Washington University						
DEPARTMENT OF HEALTH & HUMAN SERVICES	6935215	WU-17-149	Cross-scale interactions between mineral and collagen for tendon-bone attachment	93.286	23,775	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	6937711	WU-18-160	Cross-scale interactions between mineral and collagen for tendon-bone attachment	93.286	66,950	-
			Total for Washington University		**90,725**	**-**
			TOTAL for Department of Health & Human Services		**19,051,526**	**-565**

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DEPARTMENT OF HOMELAND SECURITY						
BBN Technologies Corporation						
DEPARTMENT OF HOMELAND SECURITY	6934589	PO #9500013207	Privacy Preserving Federated Search and Searching (PPFS2)	12.RD	127,661	-
			Total for BBN Technologies Corporation		**127,661**	**-**
Lincoln Laboratory						
DEPARTMENT OF HOMELAND SECURITY	6937248	PO# 7000397469	Alternatives for FEMA Disaster-Related Housing Assistance	97.RD	190,249	-
			Total for Lincoln Laboratory		**190,249**	**-**
			TOTAL for Department of Homeland Security		**317,910**	**-**

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DEPARTMENT OF TRANSPORTATION						
University of Illinois-Urbana Champaign						
DEPARTMENT OF TRANSPORTATION	6929700	2013-05178-01	Intercity Passenger Rail - Phase II	20.701	134,690	-
			Total for University of Illinois-Urbana Champaign		**134,690**	**-**
University of Maryland - College Park						
DEPARTMENT OF TRANSPORTATION	6935041	41629-Z9292101	Commercial Space Modeling and Analysis	20.RD	5,844	-
DEPARTMENT OF TRANSPORTATION	6937703	53580-Z9090201	Commercial Space Modeling and Analysis	20.RD	39,673	-
DEPARTMENT OF TRANSPORTATION	6937501	53583-Z9089201	NEXTOR II WAKE TURBULENCE RESEARCH: PHASE 4	20.RD	70,029	-
DEPARTMENT OF TRANSPORTATION	6934837	Z9234102	Wake Turbulence Research	20.RD	6,234	-
DEPARTMENT OF TRANSPORTATION	6930567	Z987701	Analysis and Modeling of Passenger Delay in the NAS	20.RD	4,410	-
			Total for University of Maryland - College Park		**126,190**	**-**
Lincoln Laboratory						
DEPARTMENT OF TRANSPORTATION	6926777	7000213564	En-Route and Terminal Speed & Altitude Optimization	20.RD	62,858	-
			Total for Lincoln Laboratory		**62,858**	**-**
Honeywell International Inc.						
DEPARTMENT OF TRANSPORTATION	6933626	AGREEMENT DTD 2/1/16 PO # 4206594602	Identify Safety Issues in Integration of Complex Digital Systems	20.RD	33,734	-
			Total for Honeywell International Inc.		**33,734**	**-**
			TOTAL for Department of Transportation		**357,471**	**-**

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MISCELLANEOUS FEDERAL GOVT						
Harvard University						
MISCELLANEOUS FEDERAL GOVT	6933698	167937-5093336	Cortical Architecture and Algorithms for Machine Listening	15.RD	88,135	-
			Total for Harvard University		**88,135**	**-**
Dynamic Object Language Labs, Inc.						
MISCELLANEOUS FEDERAL GOVT	6934889	AGREEMENT EFF. 07/01/2016	Context-driven Active-Sensing for Repair Tasks (CART)	12.RD	162,316	-
			Total for Dynamic Object Language Labs, Inc.		**162,316**	**-**
Colorado State University						
MISCELLANEOUS FEDERAL GOVT	6928840	G-9870-1	Estimating the Effects of Changing Climate on Fires and Consequences for U.S. Air Quality, Using a Set of Global and Regional Climate Models	15.232	-414	-
			Total for Colorado State University		**-414**	**-**
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	248,578	-
			Total for Harvard School of Public Health		**248,578**	**-**
RTI International						
MISCELLANEOUS FEDERAL GOVT	6938644	16-312-0213426-65208L/PO 65208L	Modeling The Economy and The Electricity Sector To Support EPA's Air Regulation	66.RD	100,497	-
			Total for RTI International		**100,497**	**-**
University of Pennsylvania						
MISCELLANEOUS FEDERAL GOVT	6933436	562731	Enabling Citizens and Owners to Invest in Green Infrastructure in Philadelphia	66.509	19,810	-
			Total for University of Pennsylvania		**19,810**	**-**
Solar Sister, Inc.						
MISCELLANEOUS FEDERAL GOVT	6936133	AGREEMENT DATED 4/1/17	Solar Sister Advancing Women's Sustainable Energy Entrepreneurship and Climate Change Leadership	19.017	80,747	-
			Total for Solar Sister, Inc.		**80,747**	**-**

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The QED Group LLC						
MISCELLANEOUS FEDERAL GOVT	6932640	KDAD-15-001	eLearning Assessment	98.RD	-957	-
			Total for The QED Group LLC		**-957**	**-**
University of Hawaii						
MISCELLANEOUS FEDERAL GOVT	6934636	MA1030	Disaster Management Early Warning and Decision Support Capacity Enhancement within Indonesia's BNPB and BPBD - PARENT	98.001	422,057	-
			Total for University of Hawaii		**422,057**	**-**
			TOTAL for Miscellaneous Federal Govt		**1,120,769**	**-**

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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	112,248	2,125
			Total for Brown University		**112,248**	**2,125**
University of California - Berkeley						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6935635	00009378	High-Order Methods for Fluid Structure Interaction	43.002	164,329	-
			Total for University of California - Berkeley		**164,329**	**-**
ATAC Corporation						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6935423	10-1613-MIT	Assessment of the benefits and costs of integrating arrival, departure, and surface operations with ATD-2	43.RD	62,017	-
			Total for ATAC Corporation		**62,017**	**-**
Applied Physics Lab of Johns Hopkins						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6931748	126755	Research Opportunities in Space and Earth Sciences 2014	43.001	214,350	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6936841	SUBAWARD 141711	Anatomy of tori: comparing the extremes demonstrated by Jupiter's and Saturn's Magnetospheres	43.001	34,488	-
			Total for Applied Physics Lab of Johns Hopkins		**248,839**	**-**
CalTech - Jet Propulsion Lab						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6899758	1283622	Voyager Interstellar Mission (VIM) Plasma Science	43.RD	382,427	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6932364	1532689	EUROPA - MISE Co-I Subcontract	43.RD	29,513	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6933469	1541064	The Eccentric Exoplanets: A Survey of Atmospheric Heating and Variability	43.RD	7	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6934362	1553749	Recent sea-ice and ice-sheet changes and their relation to the coupled ocean-atmosphere system	43.RD	4,737	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6938408	1597152	Ionization and Enrichment of Intergalactic Gas Near the Reionization Epoch	43.001	3,393	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6932365	CREI 1532602	EUROPA - ICEMAG	43.RD	4,384	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6936100	CREI 1572041	ECCO: Understanding Sea Level, Ice, and Earth's Climate	43.RD	233,257	-

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NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6936482	CREI 1576768	Psyche - JPL	43.RD	177,071	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6935586	RSA 1567573	Analyses of Radio Data from Exoplanets	43.RD	5,273	-
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	19,762	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6937443	RSA 1584272	Critical Support Data for Triton Atmosphere Study	43.RD	9,855	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6937444	RSA 1585980	Recent sea-ice and ice-sheet changes and their relation to the coupled ocean-atmosphere system	43.RD	59,977	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6935474	RSA NO. 1564029	Novel Readout for Deep Space Optical Communication Receivers	43.001	24,054	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6937477	RSA NO. 1572919	Consortium on Ultracold Atoms in Space - Year 4	43.001	71,825	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6938549	RSA NO. 1592882	Consortium on Ultracold Atoms in Space - Year 5	43.001	42,421	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6925531	SUBCONTRACT 1453629	Planning for MIT Comet Magnetization Investigations	43.RD	22,490	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6930713	SUBCONTRACT NO. 1510842	Soil Moisture Science and Product Development	43.RD	376,432	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6931399	SUBCONTRACT NO. 1517907	The Mars Oxygen ISRU Experiment (MOXIE)	43.RD	-266	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6934038	SUBCONTRACT NO. 1546769	JPL Innovation Foundry	43.RD	-13,585	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6933894	SUBCONTRACT NO. 1547496	MIT Support to SOXE Stack Post-Test Evaluation	43.RD	-43	-
			Total for CalTech - Jet Propulsion Lab		**1,452,986**	**-**
University of Colorado Boulder						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6932162	1552615/ PO #1000510992	Rock Powered Life	43.001	71,241	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6930573	PO# 1000381071	TST: Response of the Atmosphere to Impulsive Solar Events (RAISE)	43.001	26,491	-
			Total for University of Colorado Boulder		**97,732**	**-**
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	2,244	-

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			Total for University of New Hampshire		**2,244**	**-**
Arizona State University						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6937931	18-391	High Temperature GaN Microprocessor for Space Applications	43.001	17,324	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6937562	SUBCONTRACT NO. 17-257	Psyche: Journey to a Metal World (ASU)	43.RD	139,281	-
			Total for Arizona State University		**156,604**	**-**
Lowell Observatory						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6932482	2015-81520	Occultation Studies of Small Bodies in the Outer Solar System	43.RD	91,152	-
			Total for Lowell Observatory		**91,152**	**-**
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	33,746	-
			Total for Syracuse University		**33,746**	**-**
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	98,919	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6938097	K99059JRG	Lucy Phase B	43.RD	2,138	-
			Total for Southwest Research Institute		**101,056**	**-**
University of Michigan						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6933514	3003768337	Scalable Multifidelity Design Optimization: Next Generation Aircraft and their Impact on the Air Transportation System--Phase II	43.002	82,949	-
			Total for University of Michigan		**82,949**	**-**
University of Southern California						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6927488	34714188	Land Information System for SMAP Tier-1 and AirMOSS Earth Venture-1 Decadal Survey Missions	43.001	14	-
			Total for University of Southern California		**14**	**-**
Purdue University						

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NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6935856	4103-76778	Constraining lunar crater saturation by modeling GRAIL porosity	43.001	37,094	-
			Total for Purdue University		**37,094**	**-**
California Institute of Technology						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6927547	44A-1093689	Analysis of NuSTAR Observations of Sgr A* and the Galactic Center	43.001	85	-
			Total for California Institute of Technology		**85**	**-**
Pennsylvania State University						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6931728	5190-MIT-NASA-C46G	Fast Event Recognition for the ATHENA Wide Field Imager	43.001	23,649	-
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	139,321	-
			Total for Pennsylvania State University		**162,970**	**-**
University of Pennsylvania						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6932568	566962/10048151/14976/00	Laboratory Investigations of the Effects of Particulates on the Flow of Ice	43.001	6,013	-
			Total for University of Pennsylvania		**6,013**	**-**
Stanford University						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6934882	61238711-122362	WFIRST - Exoplanet Coronagraphy Science Team	43.001	39,296	-
			Total for Stanford University		**39,296**	**-**
Baylor College of Medicine						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6936096	7000000324 / TRISH PROJ# DS002	Transitional Research Institute	43.003	398,335	309,692
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6930332	HFP03801	Customized Refresher and Just-In-Time Training for Long-Duration Spaceflight Crews	43.002	1,560	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6937667	NNX16A069A/PO#70000048 3	Gastrointestinal Devices for Long-Term In Situ Delivery of Therapeutic Microbes	43.003	97,500	-
			Total for Baylor College of Medicine		**497,394**	**309,692**
Woods Hole Oceanographic Institution						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6935447	A101331	Cooperative Exploration with Under-actuated Autonomous Vehicles in Hazardous Environments	43.001	21,682	-
			Total for Woods Hole Oceanographic Institution		**21,682**	**-**

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Cross Trac Engineering, Inc.						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6937130	AGMT DATED 6/10/17	Optical Intersatellite Communications for CubeSat Swarms	43.RD	52,337	-
			Total for Cross Trac Engineering, Inc.		**52,337**	**-**
Aerospace Corporation						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6934403	AGREEMENT DATED 6-2-2016	Storm-time Dynamics of the Plasmapause and the Ionosphere/Magnetosphere System	43.001	44,949	-
			Total for Aerospace Corporation		**44,949**	**-**
ProtoInnovations, LLC						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6931960	AGRMNT EFFECTIVE 5-1-15	Advanced Algorithms and Controls for Superior Robotic All-Terrain Mobility (Phase 2)	43.RD	73,973	-
			Total for ProtoInnovations, LLC		**73,973**	**-**
Aurora Flight Sciences Corporation						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6932984	AMA-16-0001	D8 Conceptual Sizing Sensitivity Analysis	43.RD	-144	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6935098	AMA-16-0013	Coordination and Control of Swarms of Space Vehicles	43.RD	148	-
			Total for Aurora Flight Sciences Corporation		**5**	**-**
University of Idaho						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6933536	AMK162-SB-001	Waves and Surface Roughness on Titan from Specular Sun Glints	43.001	24,597	-
			Total for University of Idaho		**24,597**	**-**
Smithsonian Inst. - Astrophysical Observatory						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6937952	AR8-19001B	Spectral Classification of Massive Stars Based on Their X-ray Spectra (Chandra 19200002)	43.RD	3,208	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6934205	DD5-16077X	The Dim State of RW Aur (Chandra 16208505)	43.001	10,252	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6931105	G04-15027X	Investigating New Integral Sources with Chandra	43.001	5,662	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6925445	GO2-13110A	Chandra HETG Ultra-deep Gratings Spectroscopy of Sgr A* (CHUGSS) (Chandra 13620807)	43.RD	90,296	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6926210	GO2-13131A	Variability and particle acceleration in the jet of Pictor A (Chandra 13700620)	43.RD	-1,204	-

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NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6927863	GO3-14003A	Wolf-Rayet Winds at High Spectral Resolution (Chandra 14200176)	43.RD	56,952	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6928578	GO3-14099X	Monitoring the Tidal Disruption of a Gas Cloud Approaching Sgr A* (Chandra 14620924)	43.RD	6,081	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6930733	GO4-15040A	SS433 Jet Formation	43.001	10,117	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6929736	GO4-15091B	Monitoring the Tidal Disruption of the Gas Cloud G2 As It Encounters Sgr A* (Chandra 15620853)	43.001	28,497	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6931519	GO5-16009A	A Deep X-ray look at a very massive star: HETGS spectroscopy of the blue hypergiant HIP 101364 (Chandra 16200225)	43.001	20,050	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6931494	GO5-16014X	Challenging accretion models with an HETG observation of T Tau (Chandra 16200403)	43.001	20,803	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6932414	GO5-16032B	Following a black hole candidate X-ray transient to quiescence (Chandra 16400196)	43.001	1,486	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6933019	GO5-16041X	Precise Localization of Transient Low-Mass X-ray Binaries (Chandra 16400444)	43.001	15,176	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6932416	GO5-16046X	An Integrated Approach to Winds, Jets, and State Transitions (Chandra 16400577)	43.001	-49	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6932077	GO5-16050A	Spying on millisecond pulsar paradise: Chandra+GBT monitoring of M28 (Chandra 16400865)	43.001	2	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6933004	GO5-16051X	What is the Orbital Period of the Hierarchical Triple Candidate 4U 2129+47? (Chandra 16400867)	43.001	5,747	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6932415	GO5-16141X	A MASS-LIMITED SURVEY OF GALAXY CLUSTERS AT 1.2 < z < 1.7: PROBING THE PHYSICS OF THE ICM DURING ITS ASSEMBLY (Chandra 16800690)	43.001	120,172	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6931769	GO5-16143X	Distant Galaxy Clusters Hosting Extreme Central Galaxies	43.001	1,084	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6935501	GO6-17011X	How hot can flares from young stars be? (Chandra 17200180)	43.001	314	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6933501	GO6-17013A	Using high resolution x-ray spectra to probe accretion, abundances, and coronal activity in the young cluster IC 348 (Chandra 17200344)	43.001	48,958	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6935186	GO6-17019X	X-rays reveal a new, hot jet component: The case of Sz 102 (Chandra 17200524)	43.001	12,052	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6933985	GO6-17028B	Transient LMXBs in Globular Clusters (Chandra 17400107)	43.001	3,526	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6935006	GO6-17031B	Probing the physics of neutron stars using Terzan 5 (Chandra 17400144)	43.001	2,887	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6935589	GO6-17032X	Precise Localization of Transient Low-Mass X-ray Binaries (Chandra 17400172)	43.001	22,577	-

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NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6934987	GO6-17033X	Crust cooling of accretion heated neutron stars (Chandra 17400173)	43.001	10,421	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6935500	GO6-17037X	An Integrated Approach to Winds, Jets, and State Transitions (Chandra 17400281)	43.001	11,725	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6934988	GO6-17048X	Late-time cooling of the neutron star crust in the super-Eddington accretor XTE J1701-462 (Chandra 17400704)	43.001	1,839	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6933767	GO6-17109X	A Fossil Group in Formation (Chandra 17800155)	43.001	4,187	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6935013	GO6-17112A	Deep X-ray Observations of 3 exceptional high-z clusters of galaxies (Chandra 17800222)	43.001	33,982	-
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)	43.001	503	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6934989	GO6-17134X	Optical Depth of Si K in Bright Low-Mass X-Ray Binaries (Chandra 17910267)	43.001	2,587	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6935007	GO6-17136A	Understanding How a Black Hole Feeds: Sgr A* (Chandra 17620813)	43.001	16,241	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6936483	GO7-18002C	X-rays from Young Low-Mass Stars: Inhospitable Habitable Zones? (Chandra 18200025)	43.RD	654	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6937657	GO7-18012B	Definitive X-Ray Detection of the Class 0 Protostar HOPS 383 (Chandra 18200290)	43.RD	5,067	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6935779	GO7-18015X	What is the hottest cool star? (Chandra 18200423)	43.001	-137	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6936479	GO7-18025X	Precise Localization of Transient Low-Mass X-ray Binaries (Chandra 18400089)	43.RD	3,633	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6935827	GO7-18031B	New progress in understanding the crusts of neutron stars (Chandra 18400330)	43.001	5,934	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6936844	GO7-18035X	The Puzzling Nature OF THE YOUNG MICROQUASAR CIR X-1 (Chandra 18400420)	43.RD	8,046	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6937614	GO7-18124X	A Deep, High-Resolution X-ray Analysis of the Phoenix Cluster (Chandra 18800481)	43.RD	55,831	-
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	7,606	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6926645	SV2-82023	ACIS Science Support for the Chandra Program	43.RD	287,621	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6895251	SV3-73016	Support of the Chandra X-Ray Center (CXC)	43.RD	3,231,064	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6935585	SV7-87005	Fabrication of x-ray reflecton gratings for the MAGIXS mission	43.RD	38,661	-

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NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6937023	SV8-88004	Support of the ARCUS Mission: Exploring the Formation and Evolution of Clusters, Galaxies, and Stars	43.RD	55,878	-
			Total for Smithsonian Inst. - Astrophysical Observatory		**4,265,988**	**-**
Space Telescope Science Institute						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6929020	HST-GO-13380.01-A	Probing Black Hole Disk Atmospheres with EPIC and RGS Observations of 4U 1957+11 (HST 13380)	43.RD	21,999	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6930667	HST-GO-13456.002A	Searching for 300,000 Degree Gas in the Core of the Phoenix Cluster with HST-COS (HST 13456)	43.RD	2,366	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6935587	HST-GO-13639.014-A	Resolving Lyman-alpha Emission On Physical Scales < 270 pc at z > 4 (HST-GO-13639)	43.001	945	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6931429	HST-GO-13766.010-A	The nature of stationary components in jets from young stellar objects	43.RD	26,930	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6934283	HST-GO14151.001-A	Constraining Pop III supernova energies and the formation of the first low-mass stars with the iron-poor star HE1327-2326 (with [Fe/H] = -5.4) (HST GO-14151)	43.RD	15,606	-
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	10,160	-
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	22,063	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6937987	HST-GO-14797.015-A	Atmospheric Albedos, Alkalis, and Aerosols of Hot Jupiters (HST 14797)	43.RD	5,540	-
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	10,106	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6935833	HST-GO-14900.001-A	Confirming the Presence of an Hydrogen Exosphere around the Earth-sized Temperate Planet TRAPPIST-1c	43.RD	15,834	-
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	41,756	-
			Total for Space Telescope Science Institute		**173,305**	**-**
Michigan Technological University						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6937520	NNX17AJ32G	Institute for Ultra-Strong Composites By Computational Design (US-COMP)	43.012	79,094	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6937089	SUB 1607060Z6 / PO P0100197	Institute for Ultra-Strong Composites By Computational Design (US-COMP)	43.012	233,004	-
			Total for Michigan Technological University		**312,098**	**-**
Honeywell						

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NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6930862	NON11042 PO #4205965818	Category-theoretic Approaches for the Analysis of Distributed Systems	43.RD	21,250	-
			Total for Honeywell		**21,250**	**-**
University of Arizona						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6935314	PO 363458	REXIS - REgolith X-ray Imaging Spectrometer Phase E Operations	43.RD	514,134	347,556
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6938420	PO NO. 440148	GUSTO: Gal/Xgal U/LDB Spectroscopic/Stratospheric THz Observatory	43.RD	103,003	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6924918	PURCHASE ORDER 6473	OSIRIS-REx Near-Earth Asteroid Sample Return	43.RD	3,543	-
			Total for University of Arizona		**620,680**	**347,556**
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	54,454	-
			Total for Old Dominion University Research Foundation		**54,454**	**-**
LongWave Photonics LLC						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6932654	SBIR AGMT UNDER NNX15CP15C	SBIR Ph II: Terahertz quantum cascade laser local oscillator	43.RD	16,770	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6936666	SBIR AGMT UNDER NNX17CP49P	SBIR Ph I: Tunable, High-Power Terahertz Quantum Cascade Laser Local Oscillator	43.RD	32,000	-
			Total for LongWave Photonics LLC		**48,770**	**-**
Universities Space Research Association						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6938190	SOF-06-0160	Monitoring Titan's Atmosphere in the Post-Cassini Era with Stellar Occulations	43.RD	4,008	-
			Total for Universities Space Research Association		**4,008**	**-**
Northwestern University						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6935231	SP0037418-PROJ0010518	David Goldfinger - continued support on Micro-X	43.001	29,623	-
			Total for Northwestern University		**29,623**	**-**
National Institute of Aerospace						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6937296	SUBCONTRACT T13-6500-MIT/TASK ORDER 601009	Further Analysis of the Operational Aspects of On-Demand Mobility	43.RD	82,159	-

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NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6933720	SUBCONTRACT T13-6500-MIT/TASK ORDER 6565-MIT	On Demand Mobility Studies: Investigating Vehicle Platforms Able to Carry Small Packages to 9 Passengers, with Investigations of their Enabling Component Technologies	43.RD	2,335	-
			Total for National Institute of Aerospace		**84,495**	**-**
The Smithsonian Astrophysical Observatory						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6936756	SV7-87016	CubeSat X-ray Telescope (CubeX) for Elemental Abundance Mapping of Airless Bodies, and X-ray Pulsar Navigation	43.001	40,656	-
			Total for The Smithsonian Astrophysical Observatory		**40,656**	**-**
TRACLabs, Inc						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6936594	T0093.01-T037	NASA (STTR): Flight Director In A Box: Using Learning to Develop Planning Agents for Exploration	43.RD	49,554	-
			Total for TRACLabs, Inc		**49,554**	**-**
University of Texas - Austin						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6934349	UTA16-000512	Evolving global ocean state estimation to the SWOT era	43.001	42,296	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	6935828	UTA17-000296	Dark Influences at the Threshold of Galaxy Formation	43.001	161,683	-
			Total for University of Texas - Austin		**203,980**	**-**
			TOTAL for National Aeronautics and Space Administration		**9,475,171**	**659,373**

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NATIONAL SCIENCE FOUNDATION						
University of California - Berkeley						
NATIONAL SCIENCE FOUNDATION	2744467	00007444	Center for Energy Efficient Electronics Science (E3S)	47.041	832,515	-
NATIONAL SCIENCE FOUNDATION	6932473	00008648	HERA: Illuminating Our Early Universe	47.049	30,635	-
NATIONAL SCIENCE FOUNDATION	6935339	00009391	HERA: Illuminating Our Early Universe	47.049	48,076	-
NATIONAL SCIENCE FOUNDATION	6933483	SUBAWARD 00008317/MCB-1330914	Synthetic biology of yeast	47.074	121,335	-
			Total for University of California - Berkeley		**1,032,561**	**-**
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	95,448	-
			Total for University of California, Los Angeles		**95,448**	**-**
University of Illinois-Urbana Champaign						
NATIONAL SCIENCE FOUNDATION	2389306	020016-16527	Quantifying Defect Tolerance in Semiconductors	47.070	37,697	-
NATIONAL SCIENCE FOUNDATION	6931375	2014-05135-01	Atomic Beam Source (ABS) Development	47.049	130,878	-
			Total for University of Illinois-Urbana Champaign		**168,575**	**-**
Columbia University						
NATIONAL SCIENCE FOUNDATION	2747978	1(GG008891)	CNH: Competing Demands and Future Vulnerability of Groundwater: Drinking Water Quality and Food Security in Arsenic-Impacted South and Southeast Asia	47.050	6,710	-
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	55,485	-
NATIONAL SCIENCE FOUNDATION	6935295	46(GG009393)	Participation of David T. Wang on Expedition 370	47.050	10,724	-
			Total for Columbia University		**72,919**	**-**
Carnegie-Mellon University						
NATIONAL SCIENCE FOUNDATION	6932341	1122145-344388	CSR: Medium: Distributed Inference Algorithms for Machine Learning and Optimization	47.070	139,856	-
NATIONAL SCIENCE FOUNDATION	6930825	1122183-333057	CIF21: DIBBS: Building a Scalable Infrastructure for Data-Driven Discovery and Innovation in Education	47.070	321,875	-
			Total for Carnegie-Mellon University		**461,731**	**-**
University of Wisconsin						

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Massachusetts Institute of Technology
Federal Research Support - Passthrough - On Campus
FY 2018 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	6926610	123405535/144PRJ55WL	Data Handling and Analysis Infrastructure for Advanced LIGO and Beyond	47.049	8,345	-
			Total for University of Wisconsin		**8,345**	**-**
Harvard University						
NATIONAL SCIENCE FOUNDATION	6932524	123826-5056263	Center for Integrated Quantum Materials	47.049	1,366,385	-
NATIONAL SCIENCE FOUNDATION	6932660	123937-5096527	Biologically Inspired Optimized Materials And Technologies Transformed by Evolutionary Rules (BIOMATTER)	47.049	88,607	-
			Total for Harvard University		**1,454,992**	**-**
Washington State University						
NATIONAL SCIENCE FOUNDATION	6937644	132249-G003779	Engineering Synthetic Symbiosis Between Pland and Bacteria to Deliver Nitrogen to Crops	47.074	134,134	-
			Total for Washington State University		**134,134**	**-**
Arizona State University						
NATIONAL SCIENCE FOUNDATION	6929035	14-374	FESD Type 1: The Dynamics of Earth System Oxygenation	47.050	311,143	-
NATIONAL SCIENCE FOUNDATION	6938642	17-096	QESST: ERC for Quantum Energy and Sustainable Solar Technologies	47.041	140,292	-
NATIONAL SCIENCE FOUNDATION	6936233	SUBAWARD NO: 17-096	QESST: ERC for Quantum Energy and Sustainable Solar Technologies	47.041	32,473	-
			Total for Arizona State University		**483,908**	**-**
New York University School of Medicine						
NATIONAL SCIENCE FOUNDATION	6935153	14-AO-00-00315301: PROJECT 103733	CRCNS: Computational Approaches to Uncover Neural Representation of Population Codes in Rodent Hippocampal-Cortical Circuits.	47.070	64,298	-
			Total for New York University School of Medicine		**64,298**	**-**
George Washington University						
NATIONAL SCIENCE FOUNDATION	6935442	16-S08	PIRE: Promoting Urban Sustainability in the Arctic	47.083	71,512	-
			Total for George Washington University		**71,512**	**-**
University of Massachusetts - Amherst						
NATIONAL SCIENCE FOUNDATION	6937426	18-010023 A	CCI: Center for Autonomous Chemistry	47.049	116,585	-
			Total for University of Massachusetts - Amherst		**116,585**	**-**

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FY 2018 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
University of Oregon						
NATIONAL SCIENCE FOUNDATION	6936309	2005H0A	Chasing Icebergs: Quantifying Iceberg Motion and Melt in Greenland's Outlet Glacial Fjord	47.050	25,876	-
			Total for University of Oregon		**25,876**	**-**
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	130,216	-
			Total for University of Illinois at Chicago		**130,216**	**-**
University of California/Davis						
NATIONAL SCIENCE FOUNDATION	6936421	201601893-02	High-Performance, High-Level Tools for Statistical Inference and Unsupervised Learning	47.049	39,366	-
NATIONAL SCIENCE FOUNDATION	6936192	SUBAWARD NO. 201702113 -01	Online Prices for Computing Standards of Living Across Countries (OPSLAC)	47.075	88,614	-
			Total for University of California/Davis		**127,980**	**-**
Massachusetts General Hospital						
NATIONAL SCIENCE FOUNDATION	6937933	229049	Liane Sarah Bernstein: Mechanical Mapping of Neural Stem Cell Differentiation	47.041	25,655	-
			Total for Massachusetts General Hospital		**25,655**	**-**
University of Arizona						
NATIONAL SCIENCE FOUNDATION	6932242	272622	BCSP: The Emergence of Inactivity: adaptive task allocation in complex distributed systems, or why are there so many lazy ants?	47.074	115,323	-
			Total for University of Arizona		**115,323**	**-**
Concord Consortium						
NATIONAL SCIENCE FOUNDATION	6935372	303-01	DIP: Linking Complex Systems: Promoting reasoning within and across interconnected complex systems	47.070	104,607	-
			Total for Concord Consortium		**104,607**	**-**
University of Kentucky Research Foundation						
NATIONAL SCIENCE FOUNDATION	6937084	3200001352-18-023 / PO#7800003935	PFI-AIR-TT: A Non-Aqueous Redox Flow Battery Prototype	47.041	13,132	-
			Total for University of Kentucky Research Foundation		**13,132**	**-**

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Prime Sponsor Name	Project WBS id	Passthrough Number	WBS Project Name	CFDA #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
Duke University						
NATIONAL SCIENCE FOUNDATION	6936878	333-2318	CAREER: New Approaches for Ranking in Machine Learning	47.070	173,839	-
			Total for Duke University		**173,839**	**-**
Purdue University						
NATIONAL SCIENCE FOUNDATION	6928397	4101-51804	Network for Computational Nanotechnology (NCN)	47.041	45,487	-
NATIONAL SCIENCE FOUNDATION	6922876	SUBAWARD #10000686-015	Emerging Frontiers of Science of Information	47.070	438,041	-
			Total for Purdue University		**483,528**	**-**
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	47,915	-
NATIONAL SCIENCE FOUNDATION	6935164	416929G/GR510498	EFRI AQUIRE: A Scalable Integrated Quantum Photonic Interconnect	47.041	107,892	-
			Total for University of Rochester		**155,807**	**-**
Boston University						
NATIONAL SCIENCE FOUNDATION	6938043	4500002547	CIF21 DIBBs: EI: North Eastern Storage Exchange	47.070	18,371	-
NATIONAL SCIENCE FOUNDATION	6938402	50205759-9500307545	Letter Agreement: Shoshana Das 01/16/18 - 03/31/18	47.041	15,745	-
			Total for Boston University		**34,116**	**-**
Northeastern University						
NATIONAL SCIENCE FOUNDATION	6928496	502076-78050A	EFRI-ODISSEI: Origami and Assembly Techniques for Human-Tissue-Engineering (OATH)	47.041	59,746	-
NATIONAL SCIENCE FOUNDATION	6928471	502076-78050B	EFRI-ODISSEI: Origami and Assembly Techniques for Human-Tissue-Engineering (OATH)	47.041	46,997	-
			Total for Northeastern University		**106,743**	**-**
Boston College						
NATIONAL SCIENCE FOUNDATION	6938343	5105841-1	EAGER: Selective biodamage with shaped THz light fields	47.049	17,916	-
			Total for Boston College		**17,916**	**-**
Villanova University						
NATIONAL SCIENCE FOUNDATION	6933407	525840-3	Partnerships for Innovation: Building Innovation Capacity in Smart Stormwater Green Infrastructure	47.041	993	-

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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 Villanova University		**993**	**-**
University of Pennsylvania						
NATIONAL SCIENCE FOUNDATION	6928993	557757	Center of Excellence for Materials Research and Innovation (CEMRI)	47.049	-15,000	-
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	3,521	-
NATIONAL SCIENCE FOUNDATION	6937096	SUBAWARD 572180/PO 4135512	BioGraph 2.0 - Online Professional Development for High School Biology Teachers for Teaching and Learning About Complex Systems	47.076	271,123	-
			Total for University of Pennsylvania		**259,644**	**-**
Stanford University						
NATIONAL SCIENCE FOUNDATION	6937285	61602537-126273	CCI Phase I: Center for First Principles Design of Quantum Processes	47.049	75,494	-
			Total for Stanford University		**75,494**	**-**
Cornell University						
NATIONAL SCIENCE FOUNDATION	6935448	63016-10794	Cornell: Graphene Folding	47.049	19,917	-
NATIONAL SCIENCE FOUNDATION	6934136	77123-10681	Pulsars, Magnetars, and Transients with Phased ALMA	47.049	-322	-
NATIONAL SCIENCE FOUNDATION	6937589	80497-10951	2D Atomic Membranes for 3D Systems	47.049	105,053	-
			Total for Cornell University		**124,648**	**-**
University of Washington						
NATIONAL SCIENCE FOUNDATION	6929618	724454	NSF Engineering Research Center for Sensorimotor Neural Laboratory of Electronics	47.041	84	-
NATIONAL SCIENCE FOUNDATION	6926728	SUBCONTRACT NO. UWSC6730 / PO BPO4403	Center for Enabling New Technologies through Catalysis (CENTC) Phase II Renewal	47.049	45,355	-
NATIONAL SCIENCE FOUNDATION	6934498	UWSC6200 (BPO4405)	NSF Engineering Research Center for Sensorimotor Neural Laboratory of Electronics	47.041	363,265	-
			Total for University of Washington		**408,703**	**-**
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	220,254	-
NATIONAL SCIENCE FOUNDATION	6937009	89409643	PFI:BIC: Smart Factories: An Intelligent Material Delivery System to Improve Human-Robot Workflow	47.041	39,221	-

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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-San Diego		**259,476**	**-**
University of Southern California						
NATIONAL SCIENCE FOUNDATION	6937619	91255352	SCEC5 Research Collaboration with the Massachusetts Institute of Technology: Development of merged GPS time series for the Community Geodetic Model	47.050	29,999	-
			Total for University of Southern California		**29,999**	**-**
Virginia Polytechnic Institute & State University						
NATIONAL SCIENCE FOUNDATION	2389245	AGREEMENT DATED 4-4-2017	Real-space Laplacian on non-uniform grids for electronic structure applications	47.070	42,157	-
			Total for Virginia Polytechnic Institute & State University		**42,157**	**-**
Via Separations, LLC						
NATIONAL SCIENCE FOUNDATION	6937206	AGREEMENT DATED 9-1-2017	Robust Nanofiltration Membranes to Replace Heat Based Industrial Separations	47.041	2,696	-
			Total for Via Separations, LLC		**2,696**	**-**
NEROC						
NATIONAL SCIENCE FOUNDATION	6926730	AGS-1229036	MRI: Development of RAPID - Radio Array of Portable | Interferometric Detectors	47.050	258,517	-
NATIONAL SCIENCE FOUNDATION	6934751	AGS-1626041	MRI: Development of a redeployable spread spectrum MIMO meteor radar	47.050	123,235	-
NATIONAL SCIENCE FOUNDATION	6937109	AGS-1726377	MRI Collaborative: Development of Monitors for Alaskan and Canadian Auroral Weather in Space (MACAWS)	47.050	273,625	-
NATIONAL SCIENCE FOUNDATION	6932071	AST-1126433	MRI: Development of an ALMA Beamformer for Ultra High Resolution VLBI and High Frequency Phased Array Science	47.049	12,646	-
			Total for NEROC		**668,023**	**-**
Yale University						
NATIONAL SCIENCE FOUNDATION	6932587	C16D12238 (D02172)	EFRI 2-DARE: Few-layer and Thin-film Black Phosphorus for Photonic Applications	47.041	20,164	-
			Total for Yale University		**20,164**	**-**
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	158,186	-

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Federal Research Support - Passthrough - On Campus
FY 2018 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
			Total for New York University		**158,186**	**-**
University of Chicago						
NATIONAL SCIENCE FOUNDATION	6928942	FP055660	Scaling directed self-assembly of block copolymers for sub 10-nm manufacturing	47.049	111,923	-
			Total for University of Chicago		**111,923**	**-**
Montana State University						
NATIONAL SCIENCE FOUNDATION	6929216	G111-14-W4576	Engineering Synthetic Symbiosis between Plant and Bacteria to Deliver Nitrogen to Crops	47.074	7,793	-
			Total for Montana State University		**7,793**	**-**
New York University Medical Center						
NATIONAL SCIENCE FOUNDATION	6938890	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	10,050	-
NATIONAL SCIENCE FOUNDATION	6935763	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	29,139	-
			Total for New York University Medical Center		**39,188**	**-**
National Radio Astronomy Observatory						
NATIONAL SCIENCE FOUNDATION	6937959	PO 359999	Enabling New Science with the ALMA Phasing System "Phase 2"	47.049	54,890	-
NATIONAL SCIENCE FOUNDATION	6933699	PO# 352511	ALMA Study Project: Extensions and Enhancements to the ALMA Phasing System	47.049	13,857	-
NATIONAL SCIENCE FOUNDATION	6935136	PO# 354952	ALMA Study Project: Diversifying the Scientific Applications of the ALMA Phasing System	47.049	137,029	-
			Total for National Radio Astronomy Observatory		**205,777**	**-**
Dartmouth College						
NATIONAL SCIENCE FOUNDATION	6933152	R807	EFRI-BioFlex Preliminary Proposal: A Flexible Glucose Fuel Cell	47.041	35,853	-
			Total for Dartmouth College		**35,853**	**-**
Georgia Institute of Technology						
NATIONAL SCIENCE FOUNDATION	2746922	RF481-G1	Research Experience for Undergraduates	47.041	56,665	-
			Total for Georgia Institute of Technology		**56,665**	**-**

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FY 2018 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
UNAVCO						
NATIONAL SCIENCE FOUNDATION	6929221	S13-EAR1261833-S4	GAGE Facility GPS Data Analysis and GAMIT/GLOBK Software Support	47.050	247,841	-
			Total for UNAVCO		**247,841**	**-**
California Institute of Technology						
NATIONAL SCIENCE FOUNDATION	6929096	S398063	Powering the Planet: A Chemical Bonding Center in the Direct Conversion of Sunlight into Chemical Fuel	47.049	238,829	-
NATIONAL SCIENCE FOUNDATION	6930229	SUBAWARD NO. 75-1086390	LIGO Operations	47.049	4,034,354	-
NATIONAL SCIENCE FOUNDATION	6917535	SUBAWARD NO. 75ADV-1085563	Advanced LIGO	47.049	17,809	-
			Total for California Institute of Technology		**4,290,992**	**-**
Santa Fe Institute						
NATIONAL SCIENCE FOUNDATION	6935014	SFI20161003	INSPIRE: Thermodynamic tradeoffs in computation: the constraints confronting biochemical networks and post-Moore computers	47.049	42,088	-
			Total for Santa Fe Institute		**42,088**	**-**
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	189,944	-
NATIONAL SCIENCE FOUNDATION	6936206	SUB0000178	US CMS Software & Computing Subsystem (Year 2017)	47.049	683,186	-
NATIONAL SCIENCE FOUNDATION	6926786	SUBAWARD NO. 00002019	U.S. CMS Operations at the LHC	47.049	-140	-
			Total for Princeton University		**872,989**	**-**
University of Michigan						
NATIONAL SCIENCE FOUNDATION	6934756	SUBAWARD 3002943298	EFRI-ODISSEI: Multi Scale Origami For Novel Photonics and Energy Conversion	47.041	104	-
			Total for University of Michigan		**104**	**-**
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	386,206	-
			Total for Research Foundation of CUNY		**386,206**	**-**
Johns Hopkins University						

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FY 2018 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	6924816	SUBAWARD AGMT. NO.2001325344	EFRI-M3C: Robust Decoder-Compensator Architecture for Interactive Control of High-Speed and Loaded Movements	47.041	-3,397	-
NATIONAL SCIENCE FOUNDATION	2389143	SUBAWARD NO. 2003129511	LHC-TI Postdoctoral Fellowship Program	47.049	74,630	-
			Total for Johns Hopkins University		**71,233**	**-**
Southwest Research Institute						
NATIONAL SCIENCE FOUNDATION	6937788	SUBAWARD J99093LW	Titan from Many Angles: 3D Methane & Haze Distributions and Surface Spectra	47.049	53,894	-
			Total for Southwest Research Institute		**53,894**	**-**
Michigan Technological University						
NATIONAL SCIENCE FOUNDATION	6928536	SUBAWD# 1211086Z1, PO# P0092165	CNH: Managing Impacts of Global Transport of Atmosphere-Surface Exchangeable Pollutants in the Context of Global Change	47.050	12,893	-
			Total for Michigan Technological University		**12,893**	**-**
Smithsonian Inst. - Astrophysical Observatory						
NATIONAL SCIENCE FOUNDATION	6933768	SV6-86002	The Event Horizon Telescope Experiment	47.049	790,510	-
			Total for Smithsonian Inst. - Astrophysical Observatory		**790,510**	**-**
Emory University						
NATIONAL SCIENCE FOUNDATION	6935075	T662139	CCI Center in Selective C-H Functionalization	47.049	44,081	-
NATIONAL SCIENCE FOUNDATION	6937352	T847519	CCI Center in Selective C-H Functionalization	47.049	94,583	-
			Total for Emory University		**138,664**	**-**
University of Florida						
NATIONAL SCIENCE FOUNDATION	6930998	UFDSP00010445	Role of Nucleoside Modifications in tRNA Surveillance in Prokaryotes	47.074	-80	-
			Total for University of Florida		**-80**	**-**
			TOTAL for National Science Foundation		**15,094,462**	**-**
			TOTAL Federal Research Support - Passthrough - On Campus		**$94,034,492**	**$891,799**

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Highway Planning and Construction Cluster - Passthrough
FY 2018 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
U.S. Department of Transportation						
Massachusetts Department of Transportation						
U.S. Department of Transportation	6938129	CONTRACT #81074	Kendall Square Value Pricing Pilot Project	20.205	99,010	-
			Total for Massachusetts Department of Transportation		**99,010**	**-**
			TOTAL for U.S. Department of Transportation		**99,010**	**-**
			TOTAL Highway Planning and Construction Cluster - Passthrough		**$99,010**	**-**

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Federal Non-Research Support - On Campus
FY 2018 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	FA9550-17-1-0289	The compositionally problem in synthetic biology: New directions for control theory	12.800	12,055	-
		Total for CFDA # 12.800		*12,055*	-
		Total for Air Force		**12,055**	**-**
Army					
12.431					
Army	W911NF-17-1-0227	LIDS/IDSS Workshop on Smart URban Infrastructures (SURI)	12.431	4,610	-
		Total for CFDA # 12.431		*4,610*	-
		Total for Army		**4,610**	**-**
Navy					
12.300					
Navy	N00014-18-1-2309	Statistics and Data Science Conference 2018	12.300	9,536	-
		Total for CFDA # 12.300		*9,536*	-
		Total for Navy		**9,536**	**-**
		TOTAL for Department of Defense		**26,200**	**-**

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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	NA17OAR4170038	Knauss Fellowship 2017 - McClure	11.417	37,256	-
DOC	NA17OAR4170243	2017 NMFS Grad Fellowship - Megan Winton	11.417	9,446	9,446
		Total for CFDA # 11.417		*46,702*	*9,446*
		Total for Department of Commerce		**46,702**	**9,446**
		TOTAL for Department of Commerce		**46,702**	**9,446**

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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-SC0009297	DiaMonD: An Integrated Multifaceted Approach to Mathematics at the Interfaces of Data, Models, and Decisions	81.049	700	-
DOE	DE-SC0014478	MIT Outreach for Plasma Science and Fusion	81.049	105,714	-
DOE	DE-SC0017589	Funding for the 2nd IAEA Technical Meeting on Fusion Data Processing, Validaton and Analysis	81.049	13,932	-
DOE	DE-SC0018354	Convergence QL: NSF/DOE Quantum Science Summer School	81.049	6,288	-
		Total for CFDA # 81.049		*126,634*	-
81.117					
DOE	DE-EE0007152	MIT Clean Energy Prize	81.117	72,554	-
		Total for CFDA # 81.117		*72,554*	-
81.121					
DOE	DE-NE0000102	MIT Nuclear Energy University Fellowship Program	81.121	154,251	-
		Total for CFDA # 81.121		*154,251*	-
		Total for Department of Energy		**353,439**	**-**
		TOTAL for Department of Energy		**353,439**	**-**

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Federal Agency	Government Contract Number	Master Project Name	CFDA #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
DEPARTMENT OF HOMELAND SECURITY					
97.U01					
DHS	LTR DATED MARCH 16, 2017	Snowstorm recovery	97.U01	324,458	-
		Total for CFDA # 97.U01		*324,458*	-
		Total for Department of Homeland Security		**324,458**	**-**
		TOTAL for Department of Homeland Security		**324,458**	**-**

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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	693JJ31845005	Dwight David Eisenhower Transportation Fellowship - Montgomery	20.215	18,500	-
DOT	693JJ31845067	Dwight David Eisenhower Transportation Fellowship Program Graduate Fellowship - Middleton	20.215	3,838	-
DOT	DTFH6416G00008	Dwight David Eisenhower Transportation Fellowship - Montgomery	20.215	11,000	-
DOT	DTFH6416G00046	Eisenhower Grad Fellow Joanna Moody	20.215	0	-
		Total for CFDA # 20.215		*33,338*	-
		Total for Department of Transportation		**33,338**	**-**
		TOTAL for Department of Transportation		**33,338**	**-**

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Federal Agency	Government Contract Number	Master Project Name	CFDA #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
MISCELLANEOUS FEDERAL GOVT					
Other Agencies					
19.021					
Misc.	S-TS800-15-GR-033/PDPR 03	MIT-AFRICA Educator Program: Life Sciences & Entrepreneurshi	19.021	153,620	-
		Total for CFDA # 19.021		*153,620*	-
45.024					
Misc.	16-3400-7104	NEA GAP FY2016 Art Works II Application	45.024	0	-
Misc.	17-4200-7041	Design: To Support a Workshop and Toolkit called 'Listening to the City'	45.024	18,393	-
		Total for CFDA # 45.024		*18,393*	-
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	48,812	-
		Total for CFDA # 45.149		*48,812*	-
77.008					
Misc.	NRC-HQ-13-G-38-0043	U.S. Nuclear Regulatory Commmission Nuclear Education Faculty Development Program at MIT	77.008	17,349	-
Misc.	NRC-HQ-84-15-G-0045	MIT Nuclear Education Faculty Development Program	77.008	147,387	-
		Total for CFDA # 77.008		*164,736*	-
98.001					
Misc.	AID-OAA-A-12-00095	CITE and IDIN	98.001	764,877	130,604
		Total for CFDA # 98.001		*764,877*	*130,604*
		Total for Other Agencies		**1,150,439**	**130,604**
Department of Education					
84.047A					
ED	P047A170618	MIT/Wellesley Upward Bound Program	84.047A	162,214	-
		Total for CFDA # 84.047A		*162,214*	-
		Total for Department of Education		**162,214**	**-**

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Massachusetts Institute of Technology
Federal Non-Research Support - On Campus
FY 2018 Expenditures

Federal Agency	Government Contract Number	Master Project Name	CFDA #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
		TOTAL for Miscellaneous Federal Govt		**1,312,654**	**130,604**

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Massachusetts Institute of Technology
Federal Non-Research Support - On Campus
FY 2018 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	NNA13AA90A	Foundations of Complex Life: Evolution, Preservation & Detection on Earth & Beyond	43.001	10,657	7,660
NASA	NNX13AN67H	Climatic and geodynamic influences on ocean island landscape evolution - PD K. Huppert	43.001	-1	-
NASA	NNX14AK83H	The variability of chemical constituents in the tropical tropopause layer, their radiative impacts, and implications for tropical cyclones - PDF D. Gilford	43.001	11,500	-
NASA	NNX14AK84H	Understanding Atmospheric Particles Using Single Particle Mass Spectrometry - PDF M. Zawadowicz	43.001	5,532	-
NASA	NNX16AN92H	Investigating VOC Speciation Measured from Space	43.001	41,743	-
		Total for CFDA # 43.001		*69,431*	*7,660*
43.003					
NASA	NNX17AB13G	NASA Participation in MIT Innovation Lab	43.003	50,054	-
		Total for CFDA # 43.003		*50,054*	-
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	46,730	-
		Total for CFDA # 43.007		*46,730*	-
43.008					
NASA	NNX16AT26H	NASA AS&ASTAR Application for Cory Frontin on small Modeling for LES	43.008	49,007	-
NASA	NNX17AB22H	Advanced Modeling and Control for Turbo-Electric and Hybrid Electric Propulsion - Fellowship for Aidan Dowdle	43.008	48,143	-
		Total for CFDA # 43.008		*97,150*	-
43.009					
NASA	NNX14AL47H	Hierarchical Composites with Nanostructured Reinforcement for Multifunctional Aerospace Structures - GF R. Li	43.009	58,323	-
NASA	NNX14AL48H	Superconducting Nanowire Single Photon Detectors for High-Data-Rate Deep-Space Optical Communication	43.009	59,080	-

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Federal Agency	Government Contract Number	Master Project Name	CFDA #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NASA	NNX14AL57H	Evaluating the Impact of Design-Driven Requirements Using SysML (Mark Chodas)	43.009	11,033	-
NASA	NNX14AL61H	Two-Stage Approach to Path and Attitude Planning for Reconfigurable Spacecraft - GF K. Riesing	43.009	68,353	-
NASA	NNX14AL74H	Developing an Adaptive Robotic Assistant for Close-Proximity Human-Robot Interaction in Space Environments	43.009	65,437	-
NASA	NNX14AM40H	Topological Optimization and Automated Construction for Lightweight Structures - G.F. Benjamin Jenett	43.009	70,548	-
NASA	NNX14AM42H	Quantifying the Value of Resilience in Long-Duration Space Systems- G.F. A. Owens	43.009	37,543	-
NASA	NNX14AM57H	The Micro-X X-ray Imaging Spectrometer - G.F. D. Goldfinger	43.009	58,568	-
		Total for CFDA # 43.009		*428,885*	-
43.012					
NASA	80NSSC17K0077	Enhancing Docking and Manipulation Capability for Microgravity Robotic Free Flyers	43.012	52,990	-
NASA	80NSSC17K0081	2D Materials for Energy Harvesting and Sensing	43.012	42,762	-
NASA	80NSSC17K0082	Additive Manufacturing of Low Work Function Oxides for Spaceborne Thermionic Emission Applications	43.012	60,810	-
NASA	80NSSC17K0083	A Ground-Based Analog for CNS Exposure to Space Radiation: A System for Integrating Microbeam Technology and Neuronal Culture	43.012	57,366	-
NASA	80NSSC17K0090	Modeling Oxygen Production on Mars and Extension to a Human-Scale Mission	43.012	50,842	-
NASA	NNX15AP50H	Advanced Propellants for Scalable, Multipurpose Electrospray Ion Thrusters	43.012	69,898	-
NASA	NNX15AP51H	Dynamic Human-Centered Suit Design: A Computational and Experimental Method	43.012	56,564	-
NASA	NNX16AM70H	Developing Quantum Dot Absorptive Filter Array based Miniaturized Spectrometer for Space Applications	43.012	71,219	-
NASA	NNX16AM71H	Human Performance Metrics for Spacesuit Evaluation	43.012	75,121	-
NASA	NNX16AM72H	Development and Testing of Autonomous On-Orbit Assembly and Servicing Systems Using the SPHERES Testbed	43.012	64,181	-
NASA	NNX16AM73H	Intersatellite Calibration for Constellations of Remote Sensing CubeSats with Microwave Radiometers and Visible Imagers	43.012	58,497	-
NASA	NNX16AM74H	Autonomous Fault Identification and Handling Algorithms for Spacecraft	43.012	72,110	-
NASA	NNX16AM75H	Quantum Networking and Sensing using a Diamond Nanophotonic Circuit (Student: Eric Bersin)	43.012	62,465	-

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Federal Agency	Government Contract Number	Master Project Name	CFDA #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NASA	NNX16AM76H	Evolvable Habitation Architectures for Long-duration Human Exploration Systems	43.012	14,885	-
		Total for CFDA # 43.012		*809,708*	-
43.U11					
NASA	NNX16AH49H	National Space Grant College and Fellowship Program (Space Grant)	43.U11	710,035	-
		Total for CFDA # 43.U11		*710,035*	-
		Total for National Aeronautics and Space Administration		**2,211,994**	**7,660**
		TOTAL for National Aeronautics and Space Administration		**2,211,994**	**7,660**
		TOTAL Federal Non-Research Support - On Campus		**4,308,785**	**147,710**

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Massachusetts Institute of Technology
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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 DEFENSE						
SUNY: AIM Photonics						
DEPARTMENT OF DEFENSE	2748344	AGMT. DTD. 3/22/2016	IP-IMI	12.800	45,479	-
			Total for SUNY: AIM Photonics		**45,479**	**-**
Lincoln Laboratory						
DEPARTMENT OF DEFENSE	2747918	PO 7000384279	Support of the MIT Security Studies Program	12.U25	26,725	-
			Total for Lincoln Laboratory		**26,725**	**-**
American Society/Engineering Education						
DEPARTMENT OF DEFENSE	2291100	LETTER DATED 8/11/99	NDSEG Fellowship Program	12.300	2,400,604	-
			Total for American Society/Engineering Education		**2,400,604**	**-**
Draper Laboratory Incorporated						
DEPARTMENT OF DEFENSE	2748410	DRAPER P.O. PARENT	Draper Fellow Reporting Parent FY 18/19	12.U58	26,331	-
DEPARTMENT OF DEFENSE	2747676	P0001-0001042109	Draper Fellow Reporting Parent FY 16/17	12.U16	-10,297	-
DEPARTMENT OF DEFENSE	2747669	PO 0001 0001040149	Draper Fellow Reporting Parent FY 16/17	12.U13	-5,342	-
DEPARTMENT OF DEFENSE	2747667	PO 0001 000104116	Draper Fellow Reporting Parent FY 16/17	12.U11	2,635	-
DEPARTMENT OF DEFENSE	2747661	PO 001 0001039813	Draper Fellow Reporting Parent FY 16/17	12.U08	-24	-
DEPARTMENT OF DEFENSE	2747668	PO 001 0001039815	Draper Fellow Reporting Parent FY 16/17	12.U12	-22	-
DEPARTMENT OF DEFENSE	2747663	PO 001 0001039818	Draper Fellow Reporting Parent FY 16/17	12.U09	-24	-
DEPARTMENT OF DEFENSE	2747670	PO 001 0001039820	Draper Fellow Reporting Parent FY 16/17	12.U14	-22	-
DEPARTMENT OF DEFENSE	2747657	PO 001 0001039865	Draper Fellow Reporting Parent FY 16/17	12.U05	-22	-
DEPARTMENT OF DEFENSE	2747653	PO 001 0001039870	Draper Fellow Reporting Parent FY 16/17	12.U02	-24	-
DEPARTMENT OF DEFENSE	2747660	PO 001 0001039872	Draper Fellow Reporting Parent FY 16/17	12.U07	-22	-
DEPARTMENT OF DEFENSE	2747666	PO 001 0001040136	Draper Fellow Reporting Parent FY 16/17	12.U10	-1,249	-
DEPARTMENT OF DEFENSE	2747658	PO 001 0001040279	Draper Fellow Reporting Parent FY 16/17	12.U06	0	-
DEPARTMENT OF DEFENSE	2747656	PO 001 0001040398	Draper Fellow Reporting Parent FY 16/17	12.U04	-24	-
DEPARTMENT OF DEFENSE	2747655	PO 0010001040145	Draper Fellow Reporting Parent FY 16/17	12.U03	-22	-
DEPARTMENT OF DEFENSE	2747687	PO 0010001045492	Draper Fellow Reporting Parent FY 17/18	12.U18	58,824	-
DEPARTMENT OF DEFENSE	2747689	PO 0010001045504	Draper Fellow Reporting Parent FY 17/18	12.U20	47,221	-
DEPARTMENT OF DEFENSE	2747688	PO 0010001045514	Draper Fellow Reporting Parent FY 17/18	12.U19	64,095	-
DEPARTMENT OF DEFENSE	2747690	PO 0010001045516	Draper Fellow Reporting Parent FY 17/18	12.U21	57,753	-
DEPARTMENT OF DEFENSE	2748059	PO 0010001045547	Draper Fellow Reporting Parent FY 17/18	12.U27	31,873	-

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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 DEFENSE	2748061	PO 0010001045549	Draper Fellow Reporting Parent FY 17/18	12.U29	60,300	-
DEPARTMENT OF DEFENSE	2748058	PO 0010001045550	Draper Fellow Reporting Parent FY 17/18	12.U26	39,815	-
DEPARTMENT OF DEFENSE	2747691	PO 0010001045551	Draper Fellow Reporting Parent FY 17/18	12.U22	33,621	-
DEPARTMENT OF DEFENSE	2747692	PO 0010001045552	Draper Fellow Reporting Parent FY 17/18	12.U23	40,640	-
DEPARTMENT OF DEFENSE	2748060	PO 0010001045564	Draper Fellow Reporting Parent FY 17/18	12.U28	41,101	-
DEPARTMENT OF DEFENSE	2747693	PO 0010001045565	Draper Fellow Reporting Parent FY 17/18	12.U24	1,475	-
DEPARTMENT OF DEFENSE	2748063	PO 0010001045574	Draper Fellow Reporting Parent FY 17/18	12.U31	51,760	-
DEPARTMENT OF DEFENSE	2748062	PO 0010001045603	Draper Fellow Reporting Parent FY 17/18	12.U30	56,948	-
DEPARTMENT OF DEFENSE	2748064	PO 0010001045616	Draper Fellow Reporting Parent FY 17/18	12.U32	60,749	-
DEPARTMENT OF DEFENSE	2748065	PO 0010001045623	Draper Fellow Reporting Parent FY 17/18	12.U33	56,948	-
DEPARTMENT OF DEFENSE	2748066	PO 0010001045671	Draper Fellow Reporting Parent FY 17/18	12.U34	40,771	-
DEPARTMENT OF DEFENSE	2748068	PO 0010001045693	Draper Fellow Reporting Parent FY 17/18	12.U36	30,178	-
DEPARTMENT OF DEFENSE	2748069	PO 0010001045698	Draper Fellow Reporting Parent FY 17/18	12.U37	39,815	-
DEPARTMENT OF DEFENSE	2748067	PO 0010001045699	Draper Fellow Reporting Parent FY 17/18	12.U35	4,396	-
DEPARTMENT OF DEFENSE	2748073	PO 0010001045714	Draper Fellow Reporting Parent FY 17/18	12.U41	39,815	-
DEPARTMENT OF DEFENSE	2748071	PO 0010001045726	Draper Fellow Reporting Parent FY 17/18	12.U39	66,865	-
DEPARTMENT OF DEFENSE	2748070	PO 0010001045728	Draper Fellow Reporting Parent FY 17/18	12.U38	5,000	-
DEPARTMENT OF DEFENSE	2748072	PO 0010001045771	Draper Fellow Reporting Parent FY 17/18	12.U40	34,300	-
DEPARTMENT OF DEFENSE	2748080	PO 0010001045774	Draper Fellow Reporting Parent FY 17/18	12.U48	39,589	-
DEPARTMENT OF DEFENSE	2748075	PO 0010001045788	Draper Fellow Reporting Parent FY 17/18	12.U43	60,749	-
DEPARTMENT OF DEFENSE	2748077	PO 0010001045804	Draper Fellow Reporting Parent FY 17/18	12.U45	63,856	-
DEPARTMENT OF DEFENSE	2748074	PO 0010001045816	Draper Fellow Reporting Parent FY 17/18	12.U42	61,882	-
DEPARTMENT OF DEFENSE	2748076	PO 0010001045820	Draper Fellow Reporting Parent FY 17/18	12.U44	39,576	-
DEPARTMENT OF DEFENSE	2748078	PO 0010001045821	Draper Fellow Reporting Parent FY 17/18	12.U46	61,690	-
DEPARTMENT OF DEFENSE	2748079	PO 0010001045822	Draper Fellow Reporting Parent FY 17/18	12.U47	61,690	-
DEPARTMENT OF DEFENSE	2748182	PO 0010001046262	Draper Fellow Reporting Parent FY 17/18	12.U54	58,509	-
DEPARTMENT OF DEFENSE	2748083	PO 0010001046289	Draper Fellow Reporting Parent FY 17/18	12.U51	25,021	-
DEPARTMENT OF DEFENSE	2748081	PO 0010001046290	Draper Fellow Reporting Parent FY 17/18	12.U49	51,505	-
DEPARTMENT OF DEFENSE	2748085	PO 0010001046292	Draper Fellow Reporting Parent FY 17/18	12.U53	27,090	-
DEPARTMENT OF DEFENSE	2748084	PO 0010001046299	Draper Fellow Reporting Parent FY 17/18	12.U52	44,584	-
DEPARTMENT OF DEFENSE	2748082	PO 0010001046387	Draper Fellow Reporting Parent FY 17/18	12.U50	48,038	-
DEPARTMENT OF DEFENSE	2748230	PO 0010001046816	Draper Fellow Reporting Parent FY 17/18	12.U56	57,842	-
DEPARTMENT OF DEFENSE	2747672	PO001-0001040054	Draper Fellow Reporting Parent FY 16/17	12.U15	-144	-
DEPARTMENT OF DEFENSE	2747680	PO001-0001042501	Draper Fellow Reporting Parent FY 16/17	12.U17	-13,193	-

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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 DEFENSE	2748422	PO001-0001050042	Draper Fellow Reporting Parent FY 18/19	12.U60	3,058	-
DEPARTMENT OF DEFENSE	2748420	PO001-0001050045	Draper Fellow Reporting Parent FY 18/19	12.U59	3,346	-
DEPARTMENT OF DEFENSE	2748424	PO001-0001050047	Draper Fellow Reporting Parent FY 18/19	12.U61	3,058	-
DEPARTMENT OF DEFENSE	2748426	PO001-0001050049	Draper Fellow Reporting Parent FY 18/19	12.U62	3,346	-
DEPARTMENT OF DEFENSE	2748428	PO001-0001050051	Draper Fellow Reporting Parent FY 18/19	12.U63	3,058	-
DEPARTMENT OF DEFENSE	2748434	PO001-0001050101	Draper Fellow Reporting Parent FY 18/19	12.U64	3,346	-
DEPARTMENT OF DEFENSE	2748438	PO001-0001050104	Draper Fellow Reporting Parent FY 18/19	12.U66	1,391	-
DEPARTMENT OF DEFENSE	2748436	PO001-0001050109	Draper Fellow Reporting Parent FY 18/19	12.U65	3,346	-
DEPARTMENT OF DEFENSE	2748446	PO001-0001050334	Draper Fellow Reporting Parent FY 18/19	12.U67	438	-
			Total for Draper Laboratory Incorporated		**1,688,807**	**-**
			TOTAL for Department of Defense		**4,161,615**	**-**

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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 COMMERCE						
U Delaware: National Institute for Innovation in Manufacturing Biopharmaceuticals (NIIMBL)						
DEPARTMENT OF COMMERCE	2748151	AGREEMENT EFFECTIVE 5/4/17	The National Institute for Innovation in Manufacturing Biopharmaceuticals (NIIMBL)	11.619	34,499	-
			Total for U Delaware: National Institute for Innovation in Manufacturing Biopharmaceuticals (NIIMBL)		**34,499**	**-**
			TOTAL for Department of Commerce		**34,499**	**-**

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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 ENERGY						
Krell Institute						
DEPARTMENT OF ENERGY	2389147	AGREEMENT EFF. 09/01/2016	DOE NNSA SSGF fellowships	81.112	46,517	-
DEPARTMENT OF ENERGY	2225900	FELLOWSHIP COMMITMENT	DOE-CSGF Krell Institute	81.049	22,530	-
			Total for Krell Institute		**69,047**	**-**
			TOTAL for Department of Energy		**69,047**	**-**

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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						
University of Massachusetts Medical Center						
DEPARTMENT OF HEALTH & HUMAN SERVICES	2747936	WA00509205/OSP2017127	Outbreak and Epidemic Prevention Through Human Resource Training System Development for Infection Control in Liberia	93.318	12,548	-
DEPARTMENT OF HEALTH & HUMAN SERVICES	2747935	WA00525117/OSP2017177	Outbreak and Epidemic Prevention Through Human Resource Training System Development for Infection Control in Liberia (CarryForward)	93.318	3,036	-
			Total for University of Massachusetts Medical Center		**15,584**	**-**
			TOTAL for Department of Health & Human Services		**15,584**	**-**

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MISCELLANEOUS FEDERAL GOVT						
Commonwealth of Massachusetts - Miscellaneous						
MISCELLANEOUS FEDERAL GOVT	2747808	05260118	Enhancing the MIT Museum's Allan Forbes Whaling and Captain Arthur H. Clark Collections: Creating online access for teaching and research	15.925	5,302	-
			Total for Commonwealth of Massachusetts - Miscellaneous		**5,302**	**-**
Institute of International Education, Inc.						
MISCELLANEOUS FEDERAL GOVT	2389131	3223_MIT_7.1.2016	Hubert H Humphrey Fellowship Program (SPURS) 2016 -2017	19.010	9,154	-
MISCELLANEOUS FEDERAL GOVT	2389277	IIE0138_MIT_7.1.17	Hubert H Humphrey Fellowship Program (SPURS) 2017 -2018	19.010	183,414	-
			Total for Institute of International Education, Inc.		**192,567**	**-**
The Center for Effective Public Policy						
MISCELLANEOUS FEDERAL GOVT	2747773	378-00-MIT-451	Enhancing Campus Sexual Assault Prevention Efforts through Situational Interventions	16.203	330	-
			Total for The Center for Effective Public Policy		**330**	**-**
Michigan State University						
MISCELLANEOUS FEDERAL GOVT	2747409	AWARD DATED 1/1/2016	Avocado Press	98.001	1,745	-
			Total for Michigan State University		**1,745**	**-**
Population Services International						
MISCELLANEOUS FEDERAL GOVT	2748269	PO 10340-0-600	Co-design Summit in Ethiopia	98.001	68,775	-
			Total for Population Services International		**68,775**	**-**
			TOTAL for Miscellaneous Federal Govt		**268,719**	**-**

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Prime Sponsor Name	Project WBS id	Passthrough Number	WBS Project Name	CFDA #	TOTAL $ Amount Expended	$ Amount Passed to Subrecipients
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION						
University of Arizona						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	2747876	AGRMT DATED 11/13/16	REXIS - REgolith X-ray Imaging Spectrometer Phase E Operations	43.U12	39,113	-
			Total for University of Arizona		**39,113**	**-**
Space Telescope Science Institute						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	2388897	HST-HF2-51343.001-A	Heart of Darkness: Weakly Accreting Black Holes and the Physics of Accretions and Ejection - PDF for J. Neilsen	43.U04	9,933	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	2389016	HST-HF2-51354.001-A	A Comprehensive View of the CGM - Hubble, Bordoloi	43.U06	68,295	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	2389125	HST-HF2-51372.001-A	Characterizing Small Planets Around Bright Stars (Hubble Fellowship - Diana Dragomir)	43.U08	99,159	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	2389135	HST-HF2-51384.001-A	A Hybrid Approach to Simulating Galaxy Formation (Hubble Fellowship - Paul Torrey)	43.U09	86,691	-
			Total for Space Telescope Science Institute		**264,078**	**-**
Commonwealth of Massachusetts - Miscellaneous						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	2732483	MASSACHUSETTS SPACE GRANT CONSORTUIM	Massachusetts Space Grant Consortium	43.U10	546	-
			Total for Commonwealth of Massachusetts - Miscellaneous		**546**	**-**
Center for Advancement of Science in Space						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	2748227	OA-2017-241	Zero Robotics CASIS Support FY18	43.U14	142,692	-
			Total for Center for Advancement of Science in Space		**142,692**	**-**
Smithsonian Inst. - Astrophysical Observatory						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	2388982	PF5-160144	Einstein Postdctoral Fellowship for Dr. James Steiner, "The Nature of Black Holes"	43.U05	95,467	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	2389123	PF6-170156	Quest for the Elusive Intermediate-mass Black Holes (Einstein Fellow - Dheeraj Pasham - yr 1)	43.U07	94,862	-
			Total for Smithsonian Inst. - Astrophysical Observatory		**190,329**	**-**
Baylor College of Medicine						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	2748341	PO# 7000000554	Dean of Science Education	43.003	39,531	-

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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 Baylor College of Medicine		**39,531**	**-**
CalTech - Jet Propulsion Lab						
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	2748320	RSA 1591537	Lifecycle Product Development: Research Opportunities for the next Generation of Space Systems Engineers	43.U16	11,758	-
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	2747924	RSA NO. 1564538	Space Systems Product Development: Educating the Next Generation of Space Systems Engineers	43.U13	9,173	-
			Total for CalTech - Jet Propulsion Lab		**20,931**	**-**
			TOTAL for National Aeronautics and Space Administration		**697,220**	**-**
			TOTAL Federal Non-Research Support - Passthrough - On Campus		**$5,246,684**	**-**

SECTION III

REPORTS ON INTERNAL CONTROL AND COMPLIANCE AND SUMMARY OF AUDITORS' RESULTS

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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, 2018, 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 14, 2018.

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") to determine 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 and therefore, material weaknesses or significant deficiencies may exist that have not been identified. Given these limitations, during our audit we did not identify any deficiencies in internal control that we consider to be material weaknesses. We did identify a certain deficiency in internal control, described in the accompanying schedule of findings and questioned costs as item 2018-001 that we consider to be a significant deficiency.

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 determination of financial statement amounts. 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

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results of our tests disclosed no instances of noncompliance or other matters that are required to be reported under *Government Auditing Standards*.

The Institute's Response to Findings

The Institute's response to the finding identified in our audit is described in the accompanying management's views and corrective action plan. The Institute's response was not subjected to the auditing procedures applied in the audit of the financial statements and, accordingly, we express no opinion on it.

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.

Boston, Massachusetts
September 14, 2018

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, 2018. 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 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, 2018.

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

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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.

Boston, Massachusetts
March 8, 2019

Massachusetts Institute of Technology
Schedule of Findings and Questioned Costs
Year Ended June 30, 2018

Section I Summary of Auditors' Results

Financial Statements

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

Federal Awards

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

Identification of major programs

CFDA Number	**Name of Federal Program or Cluster**
Various	Research & Development Cluster

Dollar threshold used to distinguish between Type A and Type B programs	$4,523,171	
Auditee qualifies as a low-risk auditee?	_X_ Yes	___ No

Section II Financial Statement Findings

Finding 2018-001: Cash Flow Revision

During 2018, MIT has revised the Consolidated Statement of Cash Flows for the year ended June 30, 2017, to correct the classification of $254.8 million of cash receipts which are restricted for long-term investment from cash inflows from operating activities to cash inflows from financing activities in accordance with Accounting Standards Codification ("ASC") 230, Statement of Cash Flows. The cause of the revision was the incorrect application of this guidance when preparing the cash flow statement and the amount was primarily attributable to an endowed pledge payment of $175.9 million from one donor. The revision had no impact on the amounts disclosed in the Institute's Statement of Activities or Statement of Financial position, or the net change in cash and cash balances shown in in the Consolidated Statement of Cash Flows, all of which were accurately stated. We recommend the Institute review the cash flow statement to ensure all cash flows are properly classified in accordance with ASC 230 and other industry specific accounting guidance and establish additional layers of review similar to the procedures already in place for the Statements of Financial Position and Activities. Management's Views and Corrective Action plan is included at the end of this report.

Section III Federal Award Findings and Questioned Costs

There are no matters to report

Finding 2017-001
Compliance Requirement: Reporting (L)

Federal Program Involved	CFDA Number	Award Number	Award Year
Student Financial Assistance Cluster:			
Federal Supplemental Educational Opportunity Grant ("FSEOG")	84.007	N/A	Fiscal 2017
Federal Work Study ("FWS")	84.033	N/A	Fiscal 2017
Federal Perkins Loan	84.038	N/A	Fiscal 2017

Condition
The initial submission of the Fiscal Operations Report and Application to Participate ("FISAP") contained incorrect amounts and the Institute did not plan to amend or review the amounts prior to the final filing deadline of December 15, 2017. PwC identified several balances that were not completely or accurately reported in the final submission to the Department of Education. In Part V, Section F, the number of students for whom jobs were located or developed (Line 22) and the total earnings of the students in Field 22 (Line 23) were reported as 89 students and $264,860, respectively. These totals were incomplete and should have been reported as 93 students and $277,020, respectively. In Part VI, Section A, the total FWS funds for less-than-full-time students (Line 25, column f) was incorrectly reported as $6,836. This should have been reported as $6,158. Also in Part VI, Section A, the totals for FWS recipients (Line 26, column e), funds (Line 26, column f), and unduplicated recipients (Line 26, column g) for total "automatic" zero EFC students were incorrectly reported as 5 recipients, $5,143, and 127 unduplicated recipients, respectively. These should have been reported as 9 recipients, $11,069, and 129 unduplicated recipients, respectively. PwC recommended implementing a formal reconciliation and review process prior to submitting the FISAP to the Department of Education to ensure that all reported information is complete and accurate.

Current Year Update
The Institute has implemented a formal reconciliation process, which includes a secondary review of the FISAP prior to submission.

Finding 2017-002
Compliance Requirement: Reporting (L)

Federal Program Involved	CFDA Number	Award Number	Award Year
Research and Development Cluster:			
National Institutes of Health ("NIH")			
Common Fund Research Support	93.310	5-DP1-NS082101-05	9/30/2011-7/31/2016

Condition
For one report out of 25 selected for testing, the final submission of the SF-425 Federal Financial Report ("FFR") reported the total cumulative federal share of expenditures as equal to the total federal shares authorized of $3,988,425. Total federal disbursements per the Institute's financial records and the Department of Health and Human Services' Payment Management System as of the period end date were $3,982,032. PwC recommended revising the Institute's policies and procedures to ensure that FFRs are submitted timely with accurate information. The policy should highlight the deadlines for submission and emphasize that all outstanding items must be resolved prior to the submission of the final FFR within the deadlines set by the applicable Federal awarding agency.

Current Year Update
The Institute has reviewed and revised its reporting policies to make clear that the total cumulative federal share of expenditures must agree to the Institute's financial records at the time the report is filed.

Office of the Vice President for Finance

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John Donnelly
Associate Controller

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Finding 2018-001

Management's Views and Corrective Action Plan

MIT revised its Consolidated Statement of Cash Flows for the fiscal year that ended June 30, 2017 to correct the misclassifications noted in the finding and prepared its Consolidated Statement of Cash Flows for the fiscal year that ended June 30, 2018 in full accordance with Accounting Standards Codification (ASC) 230, Statement of Cash Flows. The Institute is taking the following steps to ensure continued compliance with ASC 230:

1. Establishing additional layers of review for the Consolidated Statement of Cash Flows, similar to procedures already employed for the Statement of Financial Position and the Statement of Activities.

2. Preparing a pro forma Consolidated Statement of Cash Flows for activity through the third quarter of the fiscal year ending June 30, 2019, which we will share with our external auditor to review during its interim audit in May, to review the appropriateness of our methodology.

Issue Coordinator: John Donnelly, Associate Controller

Completion date: May, 2019