

**The Trustees of  
Columbia University  
in the City of New York**

**Report on Federal Awards in Accordance with  
OMB Uniform Guidance**

**June 30, 2021**

**Employer Identification Number 13-5598093**

# The Trustees of Columbia University in the City of New York

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June 30, 2021 and 2020

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## **Report of Independent Auditors**

To The Trustees of Columbia University in the City of New York

### **Report on the Consolidated Financial Statements**

We have audited the accompanying consolidated financial statements of The Trustees of Columbia University in the City of New York and its subsidiaries (the "University"), which comprise the consolidated statements of financial position as of June 30, 2021 and 2020 and the related consolidated statements of activities for the year ended June 30, 2020 and of cash flows for the years ended June 30, 2021 and 2020 and 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 University'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 University'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 Trustees of Columbia University in the City of New York and its subsidiaries as of June 30, 2021 and 2020, and the changes in their net assets for the year ended June 30, 2021 and their cash flows for the years ended June 30, 2021 and 2020 in accordance with accounting principles generally accepted in the United States of America.



## ***Other Matters***

### *Other Matter*

We previously audited the consolidated statement of financial position as of June 30, 2020, and the related consolidated statements of activities and of cash flows for the year then ended (the statement of activities is not presented herein), and in our report dated October 6, 2020, 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, 2020 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, 2021 and schedule of financial responsibility data as of and for the year ended June 30, 2021 are presented for purposes of additional analysis as required by Title 2 U.S. Code of Federal Regulations Part 200, *Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards* (Uniform Guidance) and the Department of Education, respectively, and are not a required part of the consolidated financial statements. The information is the responsibility of management and was derived from and relates directly to the underlying accounting and other records used to prepare the consolidated financial statements. The information has been subjected to the auditing procedures applied in the audit of the consolidated financial statements and certain additional procedures, including comparing and reconciling such information directly to the underlying accounting and other records used to prepare the consolidated financial statements or to the consolidated financial statements themselves, and other additional procedures, in accordance with auditing standards generally accepted in the United States of America. In our opinion, the schedule of expenditures of federal awards and schedule of financial responsibility data are fairly stated, in all material respects, in relation to the consolidated financial statements taken as a whole.

## **Other Reporting Required by *Government Auditing Standards***

In accordance with *Government Auditing Standards*, we have also issued our report dated October 6, 2020 on our consideration of The Trustees of Columbia University in the City of New York and its subsidiaries' 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. 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 Trustees of Columbia University in the City of New York and its subsidiaries' internal control over financial reporting and compliance.

*PricewaterhouseCoopers LLP*

New York, New York

October 20, 2021, except for footnote 23 with respect to the consolidated financial statements and the opinion on the schedule of financial responsibility data, as to which the date is May 16, 2022.

**The Trustees of Columbia University in the City of New York**  
**Consolidated Statements of Financial Position**  
**At June 30, 2021 and 2020**  
(in thousands of dollars)

	June 2021	June 2020
<b>Assets</b>		
Cash and cash equivalents	\$754,556	\$974,112
Accounts receivable, net	587,688	543,166
Receivable for securities sold	98,856	73,318
Securities held in trust by others	26	117
Pledges receivable, net	622,853	626,352
Investments, at fair value	15,655,657	12,324,012
Institutional real estate	928,324	930,216
Land, buildings, and equipment, net	5,027,166	4,908,522
Right of use, lease assets	308,244	324,724
Other assets	715,412	626,199
<b>Total assets</b>	<b>\$24,698,782</b>	<b>\$21,330,738</b>
<b>Liabilities</b>		
Accounts payable and accrued expenses	\$427,324	\$447,180
Liabilities for securities purchased	2,160	4,308
Deferred revenue and other prepayments	400,923	342,345
Finance lease obligations	129,239	131,275
Right of use, lease obligations	316,329	329,890
Conditional asset retirement obligations	126,828	121,992
Accrued employee benefit liabilities	488,839	433,703
Federal student loan funds	54,346	62,400
Bonds and notes payable (including bond premium and issuance costs of \$272,880 and \$299,198) (see Note 16)	2,488,870	2,533,486
Other long-term liabilities	638,014	630,637
<b>Total liabilities</b>	<b>5,072,872</b>	<b>5,037,216</b>
<b>Net assets</b>		
Without donor restrictions	8,255,479	7,262,728
With donor restrictions	11,370,431	9,030,794
<b>Total net assets</b>	<b>19,625,910</b>	<b>16,293,522</b>
<b>Total liabilities and net assets</b>	<b>\$24,698,782</b>	<b>\$21,330,738</b>

See accompanying notes to the consolidated financial statements.

**The Trustees of Columbia University in the City of New York**  
**Consolidated Statements of Activities**  
**For the Year Ended June 30, 2021, with Summarized Comparative 2020 Totals**  
(in thousands of dollars)

	Without Donor Restrictions	With Donor Restrictions	June 2021	June 2020
<b>Operating activities</b>				
<b>Revenues and support</b>				
Tuition and fees (net of \$502,986 and \$492,512 in financial aid grants, respectively)	\$1,127,495		\$1,127,495	\$1,238,700
Government grants and contracts:				
Direct	814,851		814,851	759,692
Indirect	281,011		281,011	259,185
Private gifts, grants and contracts:				
Direct	248,035	\$294,170	542,205	561,736
Indirect	32,095		32,095	32,718
Revenue from other educational and research activities	210,577		210,577	221,681
Patient care revenue	1,480,146		1,480,146	1,306,121
Investment income and gains utilized	381,774	225,235	607,009	657,084
Sales and services of auxiliary enterprises	99,714		99,714	164,916
Net assets released from restrictions	361,912	(361,912)		
<b>Total operating revenues and support</b>	<b>5,037,610</b>	<b>157,493</b>	<b>5,195,103</b>	<b>5,201,833</b>
<b>Expenses</b>				
Instruction and educational administration	1,937,941		1,937,941	2,063,756
Research	701,610		701,610	660,091
Patient care expense	1,246,626		1,246,626	1,218,669
Operation and maintenance of plant	312,826		312,826	305,904
Institutional support	345,088		345,088	287,104
Auxiliary enterprises	147,938		147,938	161,309
Depreciation	290,839		290,839	292,769
Interest	61,458		61,458	52,816
<b>Total expenses</b>	<b>5,044,326</b>		<b>5,044,326</b>	<b>5,042,418</b>
<b>Change in net assets from operating activities</b>	<b>(6,716)</b>	<b>157,493</b>	<b>150,777</b>	<b>159,415</b>
<b>Nonoperating activities</b>				
Endowment gifts		152,401	152,401	186,195
Current year realized and unrealized capital gains (losses)	1,096,456	2,338,949	3,435,405	545,911
Endowment appreciation utilized	(190,472)	(392,590)	(583,062)	(593,779)
Change in net assets held by CPMC Fund, Inc.	(32)	4,116	4,084	(356)
Change in funds held by others in perpetuity		43,696	43,696	(4,122)
Present value adjustment to split-interest agreements	791	47,843	48,634	4,827
Net periodic benefit cost other than service cost	7,489		7,489	8,658
Changes in pension and postretirement obligations	77,176		77,176	(38,894)
Other	(4,212)		(4,212)	(1,560)
Reclassification	12,271	(12,271)		
<b>Change in net assets from nonoperating activities</b>	<b>999,467</b>	<b>2,182,144</b>	<b>3,181,611</b>	<b>106,880</b>
<b>Change in net assets</b>	<b>992,751</b>	<b>2,339,637</b>	<b>3,332,388</b>	<b>266,295</b>
<b>Net assets at beginning of year</b>	<b>7,262,728</b>	<b>9,030,794</b>	<b>16,293,522</b>	<b>16,027,227</b>
<b>Net assets at end of year</b>	<b>\$8,255,479</b>	<b>\$11,370,431</b>	<b>\$19,625,910</b>	<b>\$16,293,522</b>

See accompanying notes to the consolidated financial statements.

**The Trustees of Columbia University in the City of New York**  
**Consolidated Statements of Cash Flows**  
**For the Years Ended June 30, 2021 and 2020**  
(in thousands of dollars)

	June 2021	June 2020
<b>Cash flows from operating activities</b>		
(Includes adjustments to reconcile change in net assets to net cash provided by operating activities):		
Change in net assets	\$3,332,388	\$266,295
Depreciation expense	290,839	292,769
Change in right of use leases and interest on finance lease obligations and CARO	15,248	17,132
Institutional real estate depreciation	29,981	31,933
Realized and unrealized (gains) losses	(3,409,378)	(503,120)
Partnership distributions	858,552	529,379
Contributions restricted for permanent investment, plant, and split-interest agreements	(220,249)	(308,115)
Contributions other than cash	(358)	(731)
Present value adjustments and actuarial liability for split-interest agreements	(48,634)	(4,827)
Accreted interest on bonds	448	486
Change in unamortized bond premium and issuance costs	(26,318)	(24,219)
Change in fair value of net assets held by CPMC Fund, Inc.	(4,084)	356
Change in fair value of interest in perpetual trusts held by others	(43,696)	4,122
Change in operating assets and liabilities:		
Accounts receivable, net	(44,522)	26,162
Pledges receivable, net	3,499	38,488
Other assets	(45,708)	17,833
Accounts payable and accrued expenses	1,506	79,347
Deferred revenue and other prepayments	58,578	52,702
Accrued employee benefit liabilities	55,136	54,052
CARO and other long-term liabilities	24,964	20,391
<b>Net cash provided by operating activities</b>	<b>828,192</b>	<b>590,435</b>
<b>Cash flows from investing activities</b>		
Proceeds from sales of investments	5,519,175	2,481,179
Purchases of investments	(6,280,325)	(3,225,022)
Collections from student notes	11,904	11,586
Student notes issued	(4,292)	(2,428)
Proceeds from / (Investment in) cash and securities held in trust by others	91	36,340
Purchases of institutional real estate	(28,089)	(40,600)
Purchases of plant and equipment	(421,563)	(504,084)
<b>Net cash used by investing activities</b>	<b>(1,203,099)</b>	<b>(1,243,029)</b>
<b>Cash flows from financing activities</b>		
Proceeds from contributions for:		
Investment in endowment	154,179	247,887
Investment in plant	62,915	56,312
Investment in split-interest agreements	3,155	3,916
Investment income on split-interest agreements	3,413	3,726
Payments on split-interest agreements	(5,817)	(5,563)
Payments on finance lease obligations	(16,791)	(12,349)
Repayment of taxable commercial paper	(150,000)	
Proceeds from taxable commercial paper issuance	125,028	150,000
Repayment of bonds and notes payable	(298,774)	(64,319)
Proceeds from bond and note issuance	305,000	471,338
Net change in federal student loan funds	(8,054)	(17,462)
<b>Net cash provided by financing activities</b>	<b>174,254</b>	<b>833,486</b>
Net change in cash and cash equivalents	(200,653)	180,892
Cash and cash equivalents at beginning of year	1,054,958	874,066
<b>Cash and cash equivalents at end of year</b>	<b>\$854,305</b>	<b>\$1,054,958</b>
Supplemental disclosures of cash flow information:		
Cash and cash equivalents as shown in the Statements of Financial Position	\$754,556	\$974,112
Cash included in Investments, at fair value (see Note 6)	99,749	80,846
<b>Total cash and cash equivalents as shown on the Consolidated Statements of Cash Flows</b>	<b>\$854,305</b>	<b>\$1,054,958</b>
Equipment and space acquired through finance lease obligations	\$8,924	\$11,854
Right of use, lease assets acquired through new right of use lease obligations	\$13,096	\$49,742
Cash paid during the year for interest	\$103,456	\$87,471

See accompanying notes to the consolidated financial statements.

**The Trustees of Columbia University in the City of New York**  
**Notes to the Consolidated Financial Statements**  
**For the Years Ended June 30, 2021 and 2020**  
**(in thousands of dollars, unless otherwise noted)**

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**1. Organization**

The Trustees of Columbia University in the City of New York (the “University”) is a private, nonsectarian, nonprofit institution of higher education whose activities are concentrated at two locations in New York City and extend around the globe. The University provides instruction through sixteen undergraduate, graduate, and professional schools. It operates a variety of research institutes and a library system to support its teaching, learning, and research activities. The University performs research, training, and other services under grants and contracts with agencies of the federal government and other sponsoring organizations. The University enrolls approximately 31,455 full-time and part-time students and employs approximately 18,568 full-time employees, including 6,864 full-time faculty members and research staff. Of these, 1,579 hold positions in the arts and sciences, 4,091 hold health science positions, and the remainder hold positions in the other professional schools.

The University is a New York nonprofit corporation recognized as tax exempt under Section 501(c)(3) of the Internal Revenue Code.

**Columbia University Irving Medical Center**

Columbia University Irving Medical Center (“CUIMC”), a division of the University, located in the Washington Heights section of northern Manhattan, is one of the largest academic medical centers in the United States. It is composed of four schools: Vagelos College of Physicians and Surgeons, Mailman School of Public Health, College of Dental Medicine, and School of Nursing.

CUIMC has three primary areas of focus: patient care, scientific research, and education. CUIMC offers a wide variety of degrees, certifications, and continuing education in health sciences. Faculty patient care services, sponsored research, tuition, endowment income, patent royalties, and gifts provide the majority of CUIMC’s revenues. Approximately 4,341 students are enrolled at CUIMC with a full-time faculty of 2,773 of whom approximately 349 are tenured. Additionally, CUIMC’s staff includes 2,556 part-time faculty instructors, 1,270 full-time and 246 part-time researchers, 165 post-doctoral research trainees, and 1,275 post-doctoral clinical trainees. Approximately 65 percent of the full-time faculty and 22 percent of the part-time faculty hold clinical appointments and have admitting privileges at New York-Presbyterian (“NYP”)/CUIMC Campus.

Patient care activities include patient visits performed by Columbia faculty through its medical faculty practice plan, as well as clinical, educational and administration services provided to hospitals and other health care institutions through contractual agreements for services.

CUIMC maintains several clinical and education affiliation agreements with other organizations. The most significant affiliation agreements are with NYP, Lawrence Hospital, and Harlem Hospital. Certain faculty physicians also provide patient care and supervision of residents at NYP network hospitals and other affiliates. In addition, through interinstitutional professional service agreements and medical service agreements, CUIMC faculty provide patient care in specialty and subspecialty areas at hospitals in the tristate area and in other parts of the country and the world.

During the year ended June 30, 2021, the clinical faculty handled approximately 2.1 million outpatient and emergency room visits and participated in instruction and supervision of 603 University medical students and 989 residents and fellows at NYP. CUIMC physicians generated approximately 58,000 NYP hospital admissions during the year.



**The Trustees of Columbia University in the City of New York**  
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**(in thousands of dollars, unless otherwise noted)**

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Payments for patient care services provided by the full-time faculty in both institutional and private office settings are derived mainly from third-party payers, including commercial insurance and managed care companies (62 percent), Medicare (19 percent), Medicaid (13 percent), and direct patient payment (6 percent).

On October 1, 2019 the Attorney General of the State of New York approved the transfer of assets from the Aaron Diamond Research Center in the City of New York, Inc. (“ADARC”) to the University. ADARC is a medical research institution dedicated to development and exchange of scientific knowledge in the area of AIDS, HIV and related diseases.

Pursuant to the Asset Transfer and Integration Agreement between the University and ADARC, ADARC transferred certain assets to the University, the University assumed certain liabilities, and hired employees of ADARC, subject to the terms and conditions of the Agreement.

**Other Activities**

The University holds a number of limited liability companies, not-for-profit corporations and international organizations, which are established to facilitate various program and research objectives, and the results of which are included in the University’s consolidated financial statements, including:

- Columbia Investment Management Company, LLC, a New York limited liability company formed by the University to manage the University’s investment assets under the supervision of a Board appointed by the Trustees of the University and subject to the oversight of the Committee on Finance of the Trustees.
- Reid Hall Inc., located in Paris, France, which was donated to the University in 1964. Reid Hall, Inc., a corporation organized under New York membership corporation law as an educational and charitable organization, operates Reid Hall to promote, facilitate, and aid the educational, cultural, and social interests of students studying in France.
- Columbia University Healthcare, Inc., a not-for-profit practice entity in which the University is the sole corporate member.
- Columbia Doctors of New Jersey, P.C, Columbia Doctors of Bergen County, P.C. and Columbia Doctors of Connecticut, which are professional corporations in which the University is the sole corporate member.

The University also provides investment custodial services and manages all of the assets of Columbia Presbyterian Medical Center Fund, Inc. (“CPMC Fund, Inc.”), a not-for-profit corporation that was created to hold and receive gifts for the University and NYP. The consolidated financial statements reflect the University’s interest in the net assets of CPMC Fund, Inc. as well as the assets and amounts due to NYP.

**The Trustees of Columbia University in the City of New York**  
**Notes to the Consolidated Financial Statements**  
**For the Years Ended June 30, 2021 and 2020**  
**(in thousands of dollars, unless otherwise noted)**

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**2. Summary of Significant Accounting Policies**

The significant accounting policies of the University are as follows:

**Basis of Consolidation**

The consolidated financial statements of the University include the accounts of all academic and administrative departments of the University.

All significant intercompany accounts have been eliminated in consolidation.

**Basis of Presentation**

The University maintains its accounts in accordance with the principles of fund accounting. Under this method of accounting, resources for various purposes are classified into funds that are consistent with activities or objectives specified by donors. Separate accounts are maintained for each fund.

For reporting purposes, the University prepares its consolidated financial statements in accordance with accounting principles generally accepted in the United States of America (“GAAP”), including the provisions of Financial Accounting Standards Board (“FASB”) Accounting Standards Codification (“ASC”) Topic 958 Not-for-Profit Entities that requires resources be classified for reporting purposes based on the existence or absence of donor-imposed restrictions. Accordingly, the University classifies fund balances as without donor restrictions or with donor restrictions.

The consolidated financial statements of the University have, in all material respects, been prepared on an accrual basis.

**Revenues and Expenses**

Revenues are reported as increases in net assets without donor restrictions unless the use of those assets is limited by donor-imposed restrictions. Expenses are reported as decreases in net assets without donor restrictions. Gains and losses on investments are reported as increases or decreases in net assets without donor restrictions, unless their use is restricted by explicit donor stipulation or by law.

**Revenue Recognition**

Revenue related to exchange transactions is recognized under the provisions of the applicable ASC Topic, which is typically ASC Topic 606, Revenue from Contracts with Customers.

ASC Topic 606, Revenue from Contracts with Customers, requires performance of the following steps as part of the revenue recognition assessment:

- Step 1 – Identify the contract(s) with a customer
- Step 2 – Identify the performance obligation(s) in the contract
- Step 3 – Determine the transaction price
- Step 4 – Allocate the transaction price to the performance obligation(s) in the contract
- Step 5 – Recognize revenue when the entity satisfies a performance obligation

The University recognizes contributions in accordance with the revenue recognition provisions of ASC Topic 958-605, Not-for-Profit Entities. Revenue is considered a contribution if it is determined not to be an exchange transaction.

**The Trustees of Columbia University in the City of New York**  
**Notes to the Consolidated Financial Statements**  
**For the Years Ended June 30, 2021 and 2020**  
**(in thousands of dollars, unless otherwise noted)**

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Revenue recognition for the University's significant types of revenue is discussed below.

***Tuition, Fees, Room and Board, and Financial Aid***

Tuition and fees revenue is derived from degree programs and executive and continuing education programs and room and board revenue is derived from the provision of room and board services to students. Tuition and fees are recorded net of scholarships and other discounts and waivers ("Financial aid grants") and displayed in the consolidated statements of activities in "Tuition and fees". Room and board revenues are included as part of "Sales and services of auxiliary enterprises", however the recognition process mirrors that for tuition and fees. Each of these items is supported by separate contracts entered into between the University and the individual student.

Tuition and fees and room and board revenues are recognized as operating revenue in the period in which the University satisfies its performance obligations to its students. A performance obligation is a promise in a contract to transfer a distinct good or service to the customer and is the unit of accounting in ASC Topic 606. The University's performance obligations are to provide education to the student and, in certain instances, other items such as room and board. The University recognizes tuition and fees and room and board on a straight-line basis over each academic session based on gross price, net of explicit price concessions such as financial aid grants which are applied to tuition and fees. The value that is recognized for each performance obligation is set forth in publicly available University price lists and is codified in the individual contracts with each student. Individual contracts for tuition and fees and room and board display the transaction price on a standalone basis for each service to be provided to each specific student. Additionally, the contract will contain the price adjustment in the form of financial aid grants that are being awarded to the student. Given the timing of each year's academic sessions, nearly all performance obligations on behalf of the University are completed within the fiscal year.

The timing(s) of billings, cash collections and revenue recognition results in accounts receivable and deferred revenue and student deposits on the consolidated statements of financial position. Receivables are recognized only to the extent that it is probable that the University will collect substantially all of the consideration to which it is entitled in exchange for goods and services transferred to the student. Receipts received in advance of goods and services performed are recorded as deferred revenue or student deposits.

***Contributions and Pledges Receivable***

Contributions for University operations and plant, including unconditional promises to give ("pledges"), are recognized as operating revenue in the period earned. Contributions to endowment are recognized as nonoperating revenue in the period earned. Amounts expected to be collected in future years are recorded at the present value of estimated future cash flows, net of an allowance for uncollectable pledges. The discounts on those pledges are computed using an interest rate for the year in which the promise was received and considers market and credit risk as applicable. Subsequent years' accretion of the discount is included in contribution revenue. Conditional promises to give are not recognized as revenue until such time as the conditions are met.

***Grant and Contract Income***

The University receives sponsored program grant and contract income from governmental and private sources. The funding may represent a nonreciprocal transaction in which the resources provided are for the benefit of the University, the funding organization's mission, or the public at large or it may be a reciprocal transaction in exchange for an equivalent benefit in return.

**The Trustees of Columbia University in the City of New York**  
**Notes to the Consolidated Financial Statements**  
**For the Years Ended June 30, 2021 and 2020**  
**(in thousands of dollars, unless otherwise noted)**

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Revenues from exchange transactions are recognized as performance obligations are satisfied which in most cases mirrors the timing of when related costs are incurred. Revenues from non-exchange transactions may be subject to conditions in the form of both a barrier to entitlement and a refund of amounts paid (or a release from obligation to make future payments). The University recognizes revenue earned from conditional non-exchange transactions when the barrier is satisfied, typically as related costs are incurred. At June 30, 2021, the University has grants or contracts for which it has not yet met all obligations to recognize revenue, or the right to recognize revenue is dependent on future events. These open commitments total \$3.0 billion and it is expected that revenue will be recognized as the University fulfills its obligations over several years. In addition, the University has elected the simultaneous release option for conditional contributions that are also subject to purpose restrictions. Under this option, net assets without donor restrictions will include the donor-restricted contributions if the purpose restrictions are met in the same reporting year as the revenue is recognized.

Indirect cost recoveries on federally sponsored programs, such as the recovery of facilities and administrative (F&A) costs, are at reimbursement rates negotiated with the University's cognizant agency, the Department of Health and Human Services. The University entered into an agreement with the federal government which defines the rate at which the University can be reimbursed for F&A costs applicable to federal on-campus research effective July 1, 2018. This agreement will remain in place until such time a new agreement is reached.

***Patient Care Revenue and Expense***

Patient care activities relate to three distinct areas: medical faculty practice plans, affiliation agreements, and medical and professional service agreements.

Patient care expenses include direct expenses associated with providing patient care services, as well as administrative functions within the University's faculty practice organization. Patient care expense does not include rent or utilities in clinical space, as those costs are aggregated with all University space costs within "Operation and maintenance of plant".

The University provides medical care to patients via its ColumbiaDoctors faculty practice, primarily under agreements with third-party payers. The University determines performance obligations based on the nature of the services provided. Generally these performance obligations, regardless of whether the patient is receiving outpatient or inpatient services, are satisfied when the service is provided. The University bills third-party payers and patients after performance obligations are satisfied. For the limited number of patient service performance obligations that will be satisfied over a period of time, it is expected that these obligations will generally be completed soon after the end of the reporting period and the revenue related to the unsatisfied obligation will be deferred into the following fiscal year.

The University determines transaction price based on gross charges for services provided which are established on an annual basis and uniformly applied. The gross charges may be reduced by explicit price concessions, which include contractual adjustments based on agreements with third-party payers or by implicit price concessions provided to uninsured patients, which are reflected as an allowance for doubtful accounts. The University determines its allowance for doubtful accounts based on its historical collection experience with these classes of patients using a portfolio approach as a practical expedient to account for patients as a collective group rather than individually. The impact of using this practical expedient does not have a material effect on the consolidated financial statements.

**The Trustees of Columbia University in the City of New York**  
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The University maintains several clinical and education affiliation agreements with other organizations, the largest of which is with NYP. Under these affiliation agreements, the University has a performance obligation to provide medical, professional, and supervisory staff as well as other technical assistance and clinical services. Additionally, the University operates clinical departments for specific purposes, including administration, supervision, and teaching of the NYP resident staff as well as clinical programs that the University and NYP would like to see developed or expanded. The transaction price for the provision of these services is the result of an annual negotiation between the University and the other parties to the affiliation agreements that takes the form of a joint budget agreement. All material services are performed by the University, based on the terms of the agreements, within the University's fiscal year and the related revenue is recognized accordingly in the consolidated financial statements. The revenues and expenses from these agreements are accounted for in patient care and education categories of the operating activity in the consolidated statements of activities.

***Research and Development***

The University engages in numerous research and development projects, which may be partially or fully sponsored by governmental and private funds. These costs are charged to operating expense as incurred. The University periodically funds and develops patents for certain technologies, then licenses the usage of these patents to companies for a specified period of time. The revenue, net of payments due to third parties, is recorded in "Revenue from other educational and research activities" in the consolidated statements of activities. Costs incurred with developing and maintaining these patents are expensed as incurred.

***Institutional Support***

Institutional support expense includes central administrative functions and expenses that support the management of the University. This category also includes any net operating surplus or deficit of the University's benefit pool, as recoveries from units across the University may be less than or greater than benefits paid in a given year.

***Cash and Cash Equivalents***

Cash and cash equivalents are recorded at fair value and include several depository accounts, checking accounts, institutional money market funds, and similar temporary investments with maturities of three months or less at the date of purchase. The University has elected to classify cash equivalents that are part of the University's investment portfolio as short-term investments.

***Investments***

The University's investments, consisting primarily of publicly traded fixed income and equity securities, alternative investments, and cash held for reinvestment, are stated at fair value as of June 30, 2021 and 2020. Alternative investments include investments in absolute return strategy funds, private equity funds, and real asset funds. The management of each respective fund provides the fair value of the investment. The University reflects its share of the partnerships or corporations in the consolidated financial statements.

Fair value is defined as the exchange price that would be received for an asset or paid to transfer a liability (an exit price) in the principal or most advantageous market for the asset or liability in an orderly transaction between market participants on the measurement date. The University believes that the net asset value of its alternative investments is a reasonable estimate of fair value as of June 30, 2021 and 2020. Because alternative investment funds are not marketable, the estimated value is subject to uncertainty and, therefore, may differ from the value that would have been used had a

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ready market for the investment existed. Such differences could be material. The amount of gain or loss associated with these investments is reflected in the consolidated financial statements based on the University's proportionate share in the net assets of these investments.

The University's presentation in the consolidated statements of cash flows for limited liability partnerships, limited liability corporations, and other similarly structured investments is consistent with the accounting for equity method investments as it represents the underlying nature of these investments in which the University has a capital account.

The University records purchases and sales of securities on a trade-date basis. Realized gains and losses are determined on the basis of average cost of securities sold and are reflected in the consolidated statements of activities. Dividend income is recorded on the ex-dividend date, and interest income is recorded on an accrual basis.

**Split-Interest Agreements**

The University's split-interest agreements with donors consist primarily of charitable gift annuities, pooled income funds, and irrevocable charitable remainder trusts for which the University serves as custodian and trustee. Assets are invested and payments are made to donors and/or other beneficiaries in accordance with the respective agreements. In the case of irrevocable split-interest agreements whose assets are held in trusts not administered by the University (third-party charitable trusts), the University will recognize its beneficial interest when it receives sufficient reliable information and documentation that establishes the trust's existence, the University's beneficial interest, and the value of that interest.

Contribution revenues for split-interest agreements are recognized at the dates the agreements are established net of the present value of the estimated future payments to be made to the beneficiaries, if applicable, under these agreements. The discounts on those agreements are computed using an interest rate for the year in which the contribution was received and considers market and credit risk as applicable. Assets related to these agreements are recorded in "Investments, at fair value" and the liability for the present value of the estimated future payments to be made to the beneficiaries is recorded in "Other long-term liabilities" in the consolidated statements of financial position. Adjustments to the fair value of these agreements are recorded in the consolidated statements of activities under "Present value adjustment to split-interest agreements".

**Institutional Real Estate**

Institutional real estate consists primarily of properties proximate to the University's Morningside and Washington Heights campuses, the primary purpose of which is to house faculty, staff, and graduate students. The income earned on this investment is used primarily to finance operating expenditures. The properties are valued at cost and depreciated over useful lives ranging from twelve and one half to fifty years.

**Land, Buildings, and Equipment**

Land, buildings, and equipment are stated at cost net of accumulated depreciation. Depreciation is calculated on a straight-line basis over useful lives ranging from ten to one hundred years for buildings and building improvements and two to twenty years for equipment, consistent with the method used for government cost reimbursement purposes. Capitalized software costs are amortized over seven years. Upon disposal of assets, the costs and accumulated depreciation are removed from the accounts, and the resulting gain or loss is included in nonoperating activities.

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**Collections**

The University's collections include works of art, literary works, historical treasures and artifacts maintained in the University's libraries and museums. These collections are protected and preserved for public exhibition, education, research, and the furtherance of public service. Proceeds realized from deaccessioning collection items are to be used for the acquisition of new items for the University's collection and/or enhancing the life, usefulness or quality of the existing collection through long-term direct care and preservation, which includes conservation care, cataloging and documenting and proper access and use of the collection. Accordingly, such collections are not capitalized and contributed items are not recognized as revenue for financial statement purposes.

**Interest in Perpetual Trusts Held by Others**

The University is the beneficiary of certain perpetual trusts administered by others. These trusts are recognized as contributions with donor restrictions when the University receives sufficient reliable information and documentation that establishes the trust's existence, the University's beneficial interest, and the value of that interest. The fair value of the interest in these perpetual trusts is based on the University's proportional share of the fair value of assets reported by the trust, and is recorded in "Other assets" in the consolidated statements of financial position. Adjustments to the fair value of the University's interest are reported as "Change in funds held by others in perpetuity" in nonoperating activity in the consolidated statements of activities.

**Leases**

The University enters into lease arrangements for space and equipment and, upon entering in an arrangement, determines the appropriate treatment in accordance with ASU 2016-02, Leases (Topic 842). Arrangements in which substantially all of the risks of ownership have been transferred to the University are accounted for as finance leases and extend up to seven years for equipment and up to 50 years for space.

Arrangements which do not qualify for finance lease treatment but still provide the University the right to use the underlying asset are deemed to be operating leases. These leases are recorded on the statement of financial position as "Right of use, lease assets" and "Right of use, lease obligations". At the time of adoption, and in accordance with ASU 2016-02, the University elected the package of practical expedients to not reassess: (1) whether any expired or existing contracts are or contain leases, (2) lease classification for any expired or existing leases, and (3) initial direct costs for any expired or existing leases. The University has elected the short-term lease exemption policy which permits an entity to not capitalize short-term Right of use, lease assets in its statement of financial position. The University uses an incremental borrowing rate for discounting leases, as applicable, and has elected to separate lease and non-lease components in the calculation of the Right of use, lease assets and lease obligations. Right of use leases typically extend up to five years for equipment and up to 20 years for space.

**Conditional Asset Retirement Obligations**

Conditional asset retirement obligations ("CARO") are recognized for remediation or disposal of asbestos, underground storage tanks, soil, and radioactive sources and equipment as required by law. The fair value of the liability is recognized in the period in which it occurred, provided that it can be reasonably estimated.

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**Other Long-Term Liabilities**

Other long-term liabilities are obligations that extend beyond one year, or operating cycle, whichever is longer. The obligations for medical malpractice liabilities, self-insurance reserves, the fixed payer interest rate swap agreement, split-interest agreement liabilities, and other commitments are categorized in other long-term liabilities.

**Use of Estimates**

The preparation of consolidated financial statements in conformity with GAAP requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the consolidated financial statements and the reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates. The most significant estimates include valuation of investments without readily determinable prices in active markets, useful lives of depreciable assets, actuarially determined costs associated with split-interest agreements, pension, postemployment and postretirement benefits, explicit and implicit price concessions for patient and other receivables, insurance obligations, and conditional asset retirement obligations.

**2020 Presentation**

While comparative information is not required under GAAP, the University believes that this information is useful and has included comparative financial information from the consolidated financial statements for 2020. Within the consolidated statements of activities, prior year presentation of net asset categorization has been condensed for comparative purposes. This summarized information is not intended to be a full presentation in conformity with GAAP, which would require certain additional information. Accordingly, such information should be read in conjunction with the University's audited consolidated financial statements for the year ended June 30, 2020. Certain prior year information has been reclassified to conform to current year presentation.

**New Authoritative Pronouncements Adopted by the University**

In February 2016, the FASB issued ASU No. 2016-02, Leases (Topic 842). The new ASU establishes a right-of-use ("ROU") model that requires a lessee to record a ROU asset and a lease liability on the statement of financial position for all leases with a term longer than 12 months. The University adopted ASU 2016-02 for the fiscal year ended June 30, 2021, with initial application beginning with the fiscal year ended June 30, 2020. Adoption had a material impact on the University's financial statements due to the addition of ROU, lease assets of \$308.2 million and \$324.7 million and related ROU, lease liabilities in the amount of \$316.3 million and \$329.9 million, for the years ended June 30, 2021 and 2020, respectively, to the statements of financial position.

In August 2018, the FASB issued ASU No. 2018-13, Fair Value Measurement: Disclosure Framework – Changes to the Disclosure Requirements for Fair Value Measurement (Topic 820). The new ASU eliminates, adds and modifies certain disclosure requirements related to fair value measurement. This ASU is effective for fiscal years beginning after December 15, 2019, with early adoption permissible. The University adopted ASU 2018-13 for the fiscal year ended June 30, 2021. Adoption did not have a material impact on the University's consolidated financial statements.



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In March 2020, the FASB issued ASU No. 2020-04, Reference Rate Reform (Topic 848), Facilitation of the Effects of Reference Rate Reform on Financial Reporting. The ASU provides clarification that certain optional expedients and exceptions in Topic 848 for contract modifications and hedge accounting apply to derivatives that are affected by the discounting transition, specifically for those that use an interest rate for margining, discounting or contract price alignment that is modified as a result of reference rate reform. This ASU is effective immediately and can be applied through December 31, 2022. The University does not expect the adoption to have a material impact on the University's consolidated financial statements.

In January 2021, the FASB issued ASU No. 2021-01, Reference Rate Reform (Topic 848), Scope. The ASU clarifies financial reporting requirements in ASU No. 2020-04, Reference Rate Reform (Topic 848), Facilitation of the Effects of Reference Rate Reform on Financial Reporting. The amendments in this Update clarify that certain optional expedients and exceptions in Topic 848 for contract modifications and hedge accounting apply to derivatives that are affected by the discounting transition. This ASU is effective immediately and can be applied through December 31, 2022. The University does not expect the adoption to have a material impact on the University's consolidated financial statements.

**New Authoritative Pronouncements Not Yet Adopted by the University**

In September 2020, the FASB issued ASU No. 2020-07, Not-for-Profit Entities (Topic 958), Presentation and Disclosures by Not-for-Profit Entities for Contributed Nonfinancial Assets. The ASU amends financial reporting requirements in Topic 958, Not-for-Profit Entities by providing new presentation and disclosures requirements about contributed nonfinancial assets for NFP. This ASU is effective for fiscal years beginning after June 15, 2021. The University is evaluating the impact of the new standard on the University's consolidated financial statements.

In August 2018, the FASB issued ASU No. 2018-15, Intangibles – Goodwill and Other – Internal-Use Software (Subtopic 350-40). The ASU amends financial reporting requirements in ASU No. 2015-05, Intangibles—Goodwill and Other—Internal-Use Software (Subtopic 350-40): Customer's Accounting for Fees Paid in a Cloud Computing Arrangement. The new guidance aligns the requirements for capitalizing implementation costs incurred in a hosting arrangement that is a service contract with the requirements for capitalizing implementation costs incurred to develop or obtain internal use software. This ASU is effective for fiscal years beginning after December 15, 2020. The University is evaluating the impact of the new standard on the University's consolidated financial statements.

**3. Net Assets**

The University classifies its net assets as without donor restrictions or with donor restrictions. Periodically, donor redesignations may result in reclassifications of net assets. Descriptions of the two net asset categories and the types of transactions affecting each category follow.

*Without Donor Restrictions*—Net assets that are not subject to explicit donor-imposed restrictions. This category includes funds designated by the Board of Trustees to function as endowment and other undesignated funds such as tuition and other current funds, gifts without restrictions (including gifts whose donor-imposed restrictions were met during the fiscal year), net investment in plant, and student loan funds.

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*With Donor Restrictions*—Net assets that are subject to explicit donor-imposed stipulations. This includes net assets with donor restrictions that will be satisfied by actions of the University, the passage of time, or both. These net assets include gifts for which the donor-imposed restriction(s) have not been met in the year of receipt (including gifts for capital projects not yet placed in service), pledges, split-interest agreements, and net assets from donor-restricted endowments not yet appropriated for spending. Once the restrictions are satisfied, or have been deemed to have been satisfied, net assets with donor restrictions are reclassified to net assets without donor restrictions.

Also included in this category are net assets with donor restrictions that require these to be maintained permanently by the University and invested to provide a perpetual source of income. Net assets with donor restrictions that are permanent include (a) the original value of gifts donated to the permanent endowment, (b) the original value of subsequent gifts to the permanent endowment, and (c) realized and unrealized gains and losses to the permanent endowment when stipulated by the donor gift instrument.

The composition of the University’s net assets as of June 30 are as follows:

	<u>2021</u>	<u>2020</u>
With Donor Restrictions		
Endowment funds	\$ 9,900,513	\$ 7,691,614
Unexpended capital and other <sup>(a)</sup>	695,884	600,189
Pledges receivable	622,853	626,352
Annuity and life income funds	151,181	112,639
Total, Net Assets With Donor Restrictions	<u>11,370,431</u>	<u>9,030,794</u>
Without Donor Restrictions		
Board designated endowment	4,449,457	3,565,407
Undesignated	3,806,022	3,697,321
Total, Net Assets Without Donor Restrictions	<u>8,255,479</u>	<u>7,262,728</u>
Total Net Assets	<u>\$ 19,625,910</u>	<u>\$ 16,293,522</u>

<sup>(a)</sup> Includes capital gifts not yet released from restriction, unspent gift and endowment income balances, and student loan funds.

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**4. Operating Measurement**

The University divides its consolidated statements of activities into operating and nonoperating activities. The operating activities of the University include all income and expenses related to carrying out its mission focused on education, research, and patient care. Operating revenues include investment income and endowment appreciation utilized to fund current operations, the largest portion of which is the distribution of funds budgeted in accordance with the endowment spending rule.

Nonoperating activities include current year realized and unrealized gains and losses on investments, including realized gain distributions from fund investments, less amounts withdrawn from endowment appreciation to fund operations. Nonoperating activities also include new gifts to donor-restricted endowments that the University must hold in perpetuity, changes in net assets held by CPMC Fund, Inc., changes in funds held by others in perpetuity, present value adjustments to split-interest agreements, net periodic benefit cost other than service cost, changes in pension and postretirement obligations, other items, and reclassifications.

**5. Patient Care Revenue**

The University's affiliation agreements with area hospitals generated \$412.6 million and \$436.3 million of revenue for the years ended June 30, 2021 and 2020, respectively. As of June 30, 2021 and 2020, "Accounts receivable, net" includes \$122.8 million and \$133.2 million, respectively, relating to these agreements.

Medical faculty practice revenue is reported at the estimated net realizable amounts from patients, third-party payers, and others for services rendered. Medical faculty practice revenues are \$938.4 million and \$760.3 million for the years ended June 30, 2021 and 2020, respectively. As of June 30, 2021 and 2020, patient accounts receivable amounts to \$115.5 million and \$84.0 million, respectively. Medical service agreements generated \$35.8 million and \$33.7 million of revenue for the years ended June 30, 2021 and 2020, respectively, and other patient care activities generated \$93.3 million and \$75.9 million of revenue for the years ended June 30, 2021 and 2020, respectively.

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**6. Long-Term Investments and Fair Value**

The University values its investments in accordance with GAAP and consistent with the FASB official pronouncement on *Fair Value Measurements* for financial assets and liabilities. The pronouncement defines fair value as the exchange price that would be received for an asset or paid to transfer a liability (an exit price) in the principal or most advantageous market for the asset or liability in an orderly transaction between market participants on the measurement date. GAAP establishes a hierarchy of valuation inputs based on the extent to which the inputs are observable in the marketplace. Observable inputs reflect market data obtained from sources independent of the reporting entity. Unobservable inputs reflect the entity's own assumptions about how market participants would value an asset or liability based on the best information available. Valuation techniques used to measure fair value utilize relevant observable inputs and minimize the use of unobservable inputs.

The University follows a fair value hierarchy based on three levels of inputs, described below:

Fair value for Level 1 is based on quoted prices in active markets that the University has the ability to access for identical assets and liabilities. Market price data is generally obtained from exchange or dealer markets. The University does not adjust the quoted price for such assets and liabilities.

Fair value for Level 2 is based on quoted prices for similar instruments in active markets, quoted prices for identical or similar instruments in markets that are not active, or inputs other than quoted prices that are observable.

Fair value for Level 3 is based on valuation techniques that use significant inputs that are unobservable as they are not actively traded.

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. In determining the categorization of the University's investments within the fair value hierarchy, the University has considered market information including observable net asset values and the length of time until the investment will become redeemable. Investments for which fair value is measured using net asset values ("NAV") as a practical expedient are excluded from the hierarchy and have been reported separately within the table below. The categorization of a financial instrument within the hierarchy is based upon the pricing transparency of that instrument and does not necessarily correspond to the University's perceived risk of that instrument.

From time to time, the University may hold direct real estate investments. These investments are categorized as Level 3 within the fair value hierarchy. Valuation for material directly held real estate investments is determined from periodic valuations prepared by independent appraisers or broker opinions.

The University holds certain investments for which fair value is determined generally by using the unadjusted NAV per share as provided by the fund management as a practical expedient. Investments categorized as NAV include the University's ownership in funds that invest in alternative assets (i.e. absolute return strategy funds, private equity funds, and real asset funds) and funds that invest in equity and fixed income strategies for which observable net asset values are not available. The value of the University's investments in these funds represents the University's ownership interest in the net asset value of the respective fund. Items classified as NAV do not

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have a quoted price in an active market place. As a practical expedient, the University is permitted under GAAP to estimate the fair value of an investment at the measurement date using the NAV reported by the fund manager without further adjustment, provided the NAV has been calculated in accordance with or in a manner consistent with GAAP, and provided further that the University does not expect to sell the investment at a value other than NAV. The University has various processes and controls in place to ensure investment fair value is reasonable and performs various due diligence procedures over its investments including an assessment of applicable accounting policies, a review of the valuation procedures employed, and consideration of redemption features and price transparency.

The following tables present assets and liabilities measured at fair value and NAV at June 30, 2021 and June 30, 2020.

Assets	2021				Total
	Level 1	Level 2	Level 3	NAV	
Investments:					
Cash and short-term investments	\$ 1,264,691	\$ 598,646			\$ 1,863,337
Global equities	965,865	36,916	\$ 1,280	\$ 2,366,699	3,370,760
Fixed income	27,849	1,031	17	281,470	310,367
Absolute return strategies		1		4,387,264	4,387,265
Private equity	25,723		208,449	3,415,388	3,649,560
Real assets	9,612	2,241	16,348	2,046,167	2,074,368
Investments, at fair value	<u>2,293,740</u>	<u>638,835</u>	<u>226,094</u>	<u>12,496,988</u>	<u>15,655,657</u>
Interest in perpetual trusts held by others			221,506		221,506
Total assets at fair value	<u>\$ 2,293,740</u>	<u>\$ 638,835</u>	<u>\$ 447,600</u>	<u>\$ 12,496,988</u>	<u>\$ 15,877,163</u>
<b>Liabilities</b>					
Swaps payable		\$ 83,366			\$ 83,366
Total liabilities at fair value		<u>\$ 83,366</u>			<u>\$ 83,366</u>

Note: The fair value of the NAV investments as of June 30, 2021 is inclusive of \$50 million of receivables for investment subscriptions entered into during the year ended June 30, 2021, with an effective date subsequent to June 30, 2021.

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Assets	2020				Total
	Level 1	Level 2	Level 3	NAV	
<b>Investments:</b>					
Cash and short-term investments	\$ 1,145,525	\$ 397,134			\$ 1,542,659
Global equities	982,288	24,556	\$ 1,229	\$ 1,705,137	2,713,210
Fixed income	23,995	738	16	280,953	305,702
Absolute return strategies		382,878		3,363,353	3,746,231
Private equity	11,207		196,634	2,219,528	2,427,369
Real assets	5,852	847	22,360	1,559,782	1,588,841
Investments, at fair value	<u>2,168,867</u>	<u>806,153</u>	<u>220,239</u>	<u>9,128,753</u>	<u>12,324,012</u>
Interest in perpetual trusts held by others			177,810		177,810
Total assets at fair value	<u>\$ 2,168,867</u>	<u>\$ 806,153</u>	<u>\$ 398,049</u>	<u>\$ 9,128,753</u>	<u>\$ 12,501,822</u>
<b>Liabilities</b>					
Swaps payable		\$ 110,676			\$ 110,676
Total liabilities at fair value		<u>\$ 110,676</u>			<u>\$ 110,676</u>

Note: The fair value of the NAV investments as of June 30, 2020 is inclusive of \$150 million of receivables for investment subscriptions entered into during the year ended June 30, 2020, with an effective date subsequent to June 30, 2020.

**Cash and Short-Term Investments**

Cash and short-term investments include government securities and money market instruments and are valued at amortized cost, which approximates fair value.

**Global Equities and Fixed Income**

Global equities and fixed income consist of investments in publicly traded U.S. and foreign common and preferred equities, funds that invest in equity and fixed income based strategies, and cash held in separate accounts committed to these strategies. The fair value of these investments is based on quoted market prices. Investments that are listed on an exchange are valued, in general, at the last reported sale price (or, if there is no sales price, at the last reported bid price, or, in the absence of reported bid prices, at the mean between the last reported bid and asked prices thereof). Fund investments in equity and fixed income based strategies are valued in accordance with NAV provided by the investment managers of the underlying funds. If the University has valued the investment based on NAV as a practical expedient, the investment has been excluded from the fair value hierarchy and will be categorized as NAV. If the valuation does not meet the practical expedient criteria and the University has the ability to redeem from a fund up to 180 days beyond the measurement date, the investment is categorized as Level 2. If the redemption period extends beyond 180 days, the investment is categorized as Level 3.

**Alternative Investments**

Alternative investments include absolute return strategies, private equity, and real assets. Holdings in these strategies may be in funds or in separate accounts with direct investments in listed equities and fixed income, as well as cash committed to fund these investments. Private equity funds

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include large market, leveraged buyout, and venture capital based strategies. The University values these investments in accordance with valuations provided by the investment managers of the underlying funds. Investments in securities that are publicly traded, whether held by a fund or in a separate account, are generally valued based on observable market prices unless a restriction exists. In addition, investments in a private equity fund may be publicly traded and valued based on observable market prices.

As a general rule, alternative investments are valued based upon the best information available for a given circumstance and may incorporate assumptions that are the best estimate after consideration of a variety of internal and external factors. The fair value of investments categorized as Level 1 are based on quoted prices on a public market. If no public market exists for the investments, the fair value is determined by taking into consideration, among other things, the last reported bid price obtained from pricing sources or broker quotes, the cost of the investment, prices of recent significant placements of similar investments of the same issuer, and subsequent developments concerning the companies to which the investments relate. The University's management may consider other factors in assessing the fair value of these investments. If the University has valued these alternative investments based on NAV as a practical expedient, the investment is excluded from the fair value hierarchy and will be categorized as NAV. For investments in absolute return strategies, if the valuation does not meet the practical expedient criteria and the University has the ability to redeem from the investment up to 180 days beyond the measurement date, the investment is categorized as Level 2. If the redemption period extends beyond 180 days, the investment is categorized as Level 3. For private equity funds and real asset funds, if the valuation does not meet the practical expedient criteria, the investments are categorized as Level 3 given that the University does not have discretion for timing of withdrawal.

The fair value of the alternative investment funds in the table above represents the amount the University would expect to receive at June 30, 2021 and 2020, if it had liquidated its investments on these dates. The University has performed due diligence around these investments and believes that the NAV of its alternative investments is a reasonable estimate of fair value as of June 30, 2021 and 2020. Alternative investments may allocate a high percentage of their assets in specific sectors of the market in order to achieve a potentially greater investment return. As a result, the investments may be susceptible to economic, political, and regulatory developments in a particular sector of the market, positive or negative, and may experience increased volatility in net asset values.

**Perpetual Trusts**

The fair value of interest in perpetual trusts held by others is based on the University's share of the income generated by the trust, ascribed to the fair value of the assets reported by the trust.

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**Derivatives**

Investment fund managers may invest in derivatives, and the value of these positions is reflected in the NAV of the respective funds. Separately, the University employs derivatives primarily to hedge its risks and to rebalance its market exposures. Derivatives used may include futures, swaps, options, and forward contracts and are reflected at fair value following the definition of Level 1 and Level 2 assets as described above. Certain derivative positions held within the endowment portfolio are subject to master netting agreements included within an International Swap and Derivatives Association, Inc. (“ISDA”) master agreement with each of the counterparties.

The following positions are reflected on a net basis within “Investments, at fair value” on the consolidated statements of financial position and are summarized below.

Derivative Instruments	Notional Exposure		Gross		Net Fair Value	Collateral Posted
	Long	Short	Asset	Liability		
June 30, 2021						
Equity	\$ 288,118		\$ 24,493		\$ 24,493	\$ 13,489
Currency*			2,674	(1,316)	1,358	
June 30, 2020						
Equity	\$ 220,172		\$ 17,326	\$ (301)	\$ 17,025	\$ 5,600
Currency*			6,646	(2,172)	4,474	

\*The University held currency derivative contracts with an aggregate notional amount of \$216.5 million and \$1,190.4 million as of June 30, 2021 and 2020, respectively.

Outside of the endowment portfolio, the University entered into a fixed payer interest rate swap as described in Note 16. The estimated fair value of the agreement is reported as a liability of \$83.4 million and \$110.7 million at June 30, 2021 and 2020, respectively, and is included in “Swaps payable” in tables on the preceding pages. The derivatives are reflected as a receivable or payable, as appropriate, on the consolidated statements of financial position. Unrealized gain or loss from derivative investments is a component of the “Current year realized and unrealized capital gains (losses)” in the consolidated statements of activities.

The methods described above may produce a fair value calculation that may not be indicative of net realizable value or reflective of future fair values. Furthermore, while the University believes its valuation methods are appropriate and consistent with 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.



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The following tables roll forward the amounts reported in the consolidated statements of financial position for financial instruments classified by the University within Level 3 of the fair value hierarchy defined above at June 30, 2021 and 2020.

	June 30, 2020	Transfers In/Out	Purchases	Sales	Realized gain/loss	Unrealized gain/loss	June 30, 2021
Global equities	\$ 1,229			\$ (204)		\$ 255	\$ 1,280
Fixed income	16		\$ 33	(2)		(30)	17
Private equity	196,634	(6,195)	21,293	(6,546)	\$ (109)	3,372	208,449
Real assets	22,360	(3,127)		(2,197)		(688)	16,348
Total level 3 investments	\$ 220,239	\$ (9,322)	\$ 21,326	\$ (8,949)	\$ (109)	\$ 2,909	\$ 226,094

	June 30, 2020	Transfers In/Out	Disburse- ments	Realized/ Unrealized gain/loss, net	June 30, 2021
Interest in perpetual trusts held by others	\$ 177,810		\$ (7,184)	\$ 50,880	\$ 221,506

	June 30, 2019	Transfers In/Out	Purchases	Sales	Realized gain/loss	Unrealized gain/loss	June 30, 2020
Global equities	\$ 1,040			\$ (52)		\$ 241	\$ 1,229
Fixed income	4					12	16
Private equity	112,021	(1,499)	21,569	(1,314)	\$ 24	65,833	196,634
Real assets	30,300		1,875	(9,478)	(17,558)	17,221	22,360
Total level 3 investments	\$ 143,365	\$ (1,499)	\$ 23,444	\$ (10,844)	\$ (17,534)	\$ 83,307	\$ 220,239

	June 30, 2019	Transfers In/Out	Disburse- ments	Realized/ Unrealized gain/loss, net	June 30, 2020
Interest in perpetual trusts held by others	\$ 181,115	\$ 32	\$ (7,291)	\$ 3,954	\$ 177,810

All net realized and unrealized gains (losses) in the tables above are reflected in the consolidated statements of activities. Net unrealized gains (losses) relate to those financial instruments held by the University at June 30, 2021 and 2020. The University's policy is to recognize transfers in and transfers out as of the end of the period. Transfers between Level 3 and Level 1, Level 3 and Level 2 as well as between Level 3 and NAV are reported at gross, due to the criteria described above. There were no significant transfers between Level 1 and Level 2 for the years ended June 30, 2021 and 2020. There were transfers between NAV and Level 2 of \$0 and \$383.2 million for the years ended June 30, 2021 and 2020, respectively.

Certain investments in global equities and alternative investments may be subject to restrictions that (i) limit the University's ability to withdraw capital after such investment and (ii) limit the amount that may be withdrawn as of a given redemption date. The redemption terms of the University's investments in absolute return strategy funds vary from daily to triennial, with a portion of these investments designated as "illiquid" in "sidepockets" and that portion may not be available for withdrawal until liquidated by the investing fund and redemption notice periods range from 0 days to 180 days. Generally, as noted above, the University has no discretion as to withdrawal of its

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investment in private equity and real asset funds; distributions are made when sales of assets are made within the funds. The remaining life of these private equity and real asset funds is up to 12 years.

The University is obligated under certain investment fund agreements to advance additional funding up to specified levels over a period of several years. These commitments have fixed expiration dates and other termination clauses. At June 30, 2021, the University had unfunded commitments of approximately \$2.2 billion as follows:

Asset class (\$ in millions)	Remaining life of fund	Unfunded commitments	Timing to draw commitments
Global equities	N/A		1 to 8 years
Absolute return strategies	N/A	86	1 to 5 years
Private equity	1 to 12 years	1,384	1 to 12 years
Real assets	1 to 12 years	746	1 to 12 years
Total		\$ 2,216	

The University’s estimate of the lives of the funds could vary significantly depending on the investment decisions of the external fund managers, changes in the University’s portfolio, and other circumstances. Furthermore, the University’s obligation to fund the commitments noted above may be waived by the fund manager for a variety of reasons including market conditions and/or changes in investment strategy.

The University has various sources of internal liquidity at its disposal, including cash, short-term investments, marketable debt and equity securities, and lines of credit, which are available to fund the committed drawdowns.

**Investment Return**

Investment income and gains utilized on the consolidated statements of activities contains endowment appreciation utilized to fund the spending rule, institutional real estate revenue net of operating expenses and depreciation, and other investment income. Endowment appreciation utilized was \$583.1 million and \$593.8 million during 2021 and 2020, respectively. “Current year realized and unrealized capital gains (losses)” reported in nonoperating activities reflect investment returns net of external and direct internal investment costs, reduced by endowment appreciation utilized to fund the spending rule.

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**7. Endowment Funds**

The University's endowment consists of approximately 6,000 separate funds established over many years for a wide variety of purposes, which include support of specific schools or departments of the University, professorships, research, faculty support, scholarships and fellowships, library, building construction, and other purposes. The endowment includes donor-restricted endowments and funds designated by the Board of Trustees to function as endowments. As required by GAAP, net assets associated with endowment funds, including funds designated by the Board of Trustees to function as endowments, are classified and reported based on the existence or absence of donor-imposed restrictions.

The University employs a market value unit method of accounting for pooled general investments. Each participating fund enters and withdraws from the pooled investment account based on monthly unit market values. Changes in the market value of investments are distributed proportionately to each fund that participates in the investment pool. Net investment income distributed during the year is allocated on a per unit basis to each participating fund.

**Relevant Law**

Under New York Prudent Management of Institutional Funds Act ("NYPMIFA"), the University may appropriate so much of a donor-restricted endowment fund as it deems prudent, considering the specific factors set forth in NYPMIFA and subject to the intent of the donor as expressed in the gift instrument. Unless stated otherwise in the gift instrument, the earnings in an endowment fund are considered to have donor restrictions until appropriated.

The University continues to classify as net assets with donor restrictions (a) the original value of gifts donated to the permanent endowment, (b) the original value of subsequent gifts to the permanent endowment, and (c) accumulations to the endowment made in accordance with the direction of the applicable donor gift instrument at the time the accumulation is added to the fund. Accumulated appreciation on donor-restricted endowment funds is also included as net assets with donor restrictions until those amounts are appropriated for expenditure by the University in a manner consistent with the standard of prudence prescribed by NYPMIFA.

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The composition and changes in the University's endowment net assets as of June 30, 2021 and 2020, are as follows:

	<b>2021</b>		
	<b>Without Donor Restrictions</b>	<b>With Donor Restrictions</b>	<b>Total</b>
<b>Changes in University endowment net assets</b>			
Opening balance - June 30, 2020	\$ 3,565,407	\$ 7,691,614	\$ 11,257,021
Investment return	955,012	2,409,708	3,364,720
New gifts	1,248	186,086	187,334
Appropriation for expenditure	(210,602)	(427,395)	(637,997)
Other changes:			
Transfers	131,835	48,780	180,615
Other / Reclassifications	6,557	(8,280)	(1,723)
	<u>138,392</u>	<u>40,500</u>	<u>178,892</u>
Closing balance - June 30, 2021	<u>\$ 4,449,457</u>	<u>\$ 9,900,513</u>	<u>\$ 14,349,970</u>
<b>University endowment composition</b>			
Donor-restricted endowment funds:			
Restricted in perpetuity		\$ 3,842,733	\$ 3,842,733
Appreciation		5,304,917	5,304,917
Board designated endowment:			
Departmental funds	1,901,660	512,480	2,414,140
University funds	1,855,140		1,855,140
Institutional real estate, net	692,657		692,657
CPMC Fund, Inc.		18,877	18,877
Interests in perpetual trusts held by others		221,506	221,506
University's endowment value	<u>\$ 4,449,457</u>	<u>\$ 9,900,513</u>	<u>\$ 14,349,970</u>

Note: The tables above do not include split-interest agreements, net of \$157,298 and pledges receivable, net of \$285,915.

**Reconciliation to Investments, at fair value**

Investments, at fair value		\$ 15,655,657
Add:		
Interests in perpetual trusts held by others	221,506	
CPMC Fund, Inc.	18,877	
Institutional real estate, net	692,657	
Investment receivables and payables	<u>104,199</u>	1,037,239
Subtract:		
Other long-term investments	(2,018,274)	
Split-interest agreements	(225,611)	
Funds held on behalf of others	<u>(99,041)</u>	<u>(2,342,926)</u>
University's endowment value		<u>\$ 14,349,970</u>

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	<b>2020</b>		
	<b>Without Donor Restrictions</b>	<b>With Donor Restrictions</b>	<b>Total</b>
<b>Changes in University endowment net assets</b>			
Opening balance - June 30, 2019	\$ 3,528,579	\$ 7,422,159	\$ 10,950,738
Investment return	203,356	359,346	562,702
New gifts	3,775	278,811	282,586
Appropriation for expenditure	(241,258)	(416,147)	(657,405)
Other changes:			
Transfers	79,094	39,306	118,400
Other / Reclassifications	(8,139)	8,139	-
	<u>70,955</u>	<u>47,445</u>	<u>118,400</u>
Closing balance - June 30, 2020	<u>\$ 3,565,407</u>	<u>\$ 7,691,614</u>	<u>\$ 11,257,021</u>
<b>University endowment composition</b>			
Donor-restricted endowment funds:			
Restricted in perpetuity		\$ 3,661,726	\$ 3,661,726
Appreciation		3,441,964	3,441,964
Board designated endowment:			
Departmental funds	\$ 1,413,017	395,321	1,808,338
University funds	1,476,882		1,476,882
Institutional real estate, net	675,508		675,508
CPMC Fund, Inc.		14,793	14,793
Interests in perpetual trusts held by others		177,810	177,810
University's endowment value	<u>\$ 3,565,407</u>	<u>\$ 7,691,614</u>	<u>\$ 11,257,021</u>

Note: The tables above do not include split-interest agreements, net of \$118,520 and pledges receivable, net of \$287,693.

**Reconciliation to Investments, at fair value**

Investments, at fair value		\$ 12,324,012
Add:		
Interests in perpetual trusts held by others	177,810	
CPMC Fund, Inc.	14,793	
Institutional real estate, net	675,508	
Investment receivables and payables	<u>74,388</u>	942,499
Subtract:		
Other long-term investments	(1,757,673)	
Split-interest agreements	(177,255)	
Funds held on behalf of others	<u>(74,562)</u>	(2,009,490)
University's endowment value		<u>\$ 11,257,021</u>

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**Return Objectives and Risk Parameters**

Endowment assets include those assets of donor-restricted funds that the University must hold in perpetuity or for a donor-specified period(s) as well as Board-designated funds. Under the University's investment policies, as approved by the Board of Trustees, the endowment assets are invested in a manner that is intended to produce performance which exceeds that of relevant indices for each asset class while assuming a moderate level of investment risk.

**Strategies Employed for Achieving Objectives**

The University relies on a total return strategy in which investment returns are achieved through both capital appreciation (realized and unrealized) and current yield (interest and dividends). The University targets a diversified asset allocation to achieve its long-term return objectives within prudent risk constraints.

**Endowment Spending Rule**

The endowment spending rule utilized by the University is designed to be directly responsive to both investment returns and the current level of price inflation. Its long-term objectives are:

- To protect the corpus of the endowment by spending no more than the real investment return;
- To cushion spending against market volatility; and
- To provide specific spending instructions and multiyear spending projections based on explicit future investment return assumptions.

The current endowment spending rule is based on two factors: first, the market value multiplied by a target spending rate that may range from 4.5 to 5.0 percent, which provides a response to investment market conditions; and second, the prior year's spending plus inflation, which ties spending increases to operating needs and cushions spending against market volatility. This allows the University to maintain the purchasing power of the endowment assets held in perpetuity or for a specified term as well as to provide additional real growth through new gifts and investment return.

As a general policy, each fiscal year's distribution is calculated by adding together the following:

- a. The market value of the endowment at a point twelve months prior to the beginning of the given fiscal year, multiplied by the target spending rate, multiplied by a 40 percent weighting; and
- b. Endowment spending in the year immediately preceding the given fiscal year, grown or reduced by an inflation factor, which is defined as the Higher Education Price Index ("HEPI"), multiplied by a 60 percent weighting.

The Trustees conduct a special review in any year in which either projected endowment distributions are 0.5 percent higher or lower than the target spending rate, or if the increase in endowment distributions over the previous year is more than 3 percentage points higher or lower than HEPI. Additionally, from time to time, management may recommend and the Trustees may approve a temporary override of the spending rule to ensure the University's ability to sustain the permanent nature of the endowment.

In addition to the base spending rate described above, an additional payout component was approved as a temporary measure by the Trustees in 2008, applied as a percentage of the prior year beginning market value for certain endowments in categories key to the University's current

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development efforts, primarily endowments for purposes core to the University’s educational and research mission, including financial aid and faculty support. For the years ended June 30, 2021 and 2020, the additional payout rate was 0.65 percent and 0.70 percent, respectively. The additional payout component is reviewed by the Trustees regularly and has currently been extended through the end of fiscal year 2022.

**Underwater Endowment Funds**

From time to time, the fair value of assets associated with individual donor-restricted endowment funds may fall below the original gift value, which represents the total of the initial and subsequent donor contribution amounts. When this occurs, the deficit is classified as a reduction of donor-restricted net assets. As of June 30, 2021, no such deficits existed. As of June 30, 2020, deficits totaling \$2.7 million existed in funds which combined had an original gift value of \$181.6 million and a current market value of \$178.9 million. The deficits resulted from market fluctuations that occurred after the investment of recent contributions and authorized appropriation from an endowment that was deemed prudent.

**8. Accounts Receivable**

Accounts receivable, net, consists of the following as of June 30:

	<u>2021</u>	<u>2020</u>
Patient receivables, net of contractual allowances	\$ 160,179	\$ 160,292
Government agencies	123,937	74,835
NewYork-Presbyterian Hospital	137,363	151,127
Patent and licensing	8,440	6,169
Student receivables	73,067	85,339
Investment income receivable	4,103	5,160
Other receivables	147,762	157,531
	<u>654,851</u>	<u>640,453</u>
Less: Allowance for doubtful accounts	(67,163)	(97,287)
Accounts receivable, net	<u>\$ 587,688</u>	<u>\$ 543,166</u>

Patient receivables for medical services are net of an allowance for contractual reserves in the amount of \$334.7 million and \$246.4 million at June 30, 2021 and 2020, respectively.

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**9. Student Loans Receivable and Financial Aid**

The University participates in various federal loan programs, in addition to administering institutional loan programs. Loans receivable from students are recorded in “Other Assets” and as of June 30 are as follows:

	<u>2021</u>	<u>2020</u>
Government revolving loans	\$ 42,388	\$ 47,951
Institutional loans	<u>25,024</u>	<u>28,772</u>
Gross student loans	67,412	76,723
Less: Allowance for doubtful collections	<u>(2,462)</u>	<u>(2,494)</u>
Student loans receivable, net	<u>\$ 64,950</u>	<u>\$ 74,229</u>

Government revolving loans are funded principally with federal advances to the University under the Federal Perkins Loan Program and certain other programs. The Federal Perkins Loan Program expired on September 30, 2017 and no new disbursements were permitted after June 30, 2018, but there are outstanding balances from loans awarded in previous years. Balances under the Federal Perkins Loan Program totaled \$38.8 million and \$47.9 million and advances under the other federally sponsored loan programs are \$15.6 million and \$14.5 million as of June 30, 2021 and 2020, respectively. These advances are classified as liabilities on the consolidated statements of financial position. Interest earned on the revolving and institutional loan programs is reinvested to support additional loans. The repayment and interest rate terms of the institutional loans vary considerably.

Management regularly assesses the adequacy of the allowance for doubtful collections by performing ongoing evaluation of the student loan and student accounts receivable portfolios. Loans receivable under federally guaranteed student loan programs are subject to significant restrictions.

In addition to the loans identified above, the University processes and authorizes loans to students through the William D. Ford Federal Direct Loan Program. The amounts due under this loan program are not recorded in the University’s consolidated financial statements since the University does not guarantee any federal loan funds related to this program. Loans issued under this program were \$314.5 million and \$275.2 million for the years ended June 30, 2021 and 2020, respectively.

Undergraduate financial aid represents grants and awards for all or part of a student’s tuition and fees, and in certain other instances, items such as room and board. Graduate financial aid represents grants and awards for all or part of a student’s tuition and fees. Funding from external sources is obtained through government and private grants and contracts as well as private gifts and payout from certain endowment funds.



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Financial aid granted to students is summarized as follows for the year ended June 30:

	2021			2020		
	University Sources	External Sources	Total Financial Aid	University Sources	External Sources	Total Financial Aid
Undergraduate	\$ 137,111	\$ 64,024	\$ 201,135	\$ 139,668	\$ 63,084	\$ 202,752
Graduate	212,526	89,325	301,851	198,659	91,101	289,760
Total financial aid grants	<u>\$ 349,637</u>	<u>\$ 153,349</u>	<u>\$ 502,986</u>	<u>\$ 338,327</u>	<u>\$ 154,185</u>	<u>\$ 492,512</u>

Agency activities such as tuition aid grants and Federal Pell Grant Program awards are not included in the University's consolidated financial statements. Both receipts and disbursements for these agency transactions were \$12.0 million and \$11.8 million in years ended June 30, 2021 and 2020, respectively.

**10. Pledges Receivable**

Unconditional promises to give appear as pledges receivable and revenue of the appropriate net asset category. Pledges are recorded net of an allowance for uncollectible contributions and a discount to reflect the net present value based on projected cash flows. Periodically unconditional promises to give are reviewed for collectability. As a result, the allowance for uncollectible contributions may be adjusted and some contributions may be adjusted or cancelled. Such changes will be reflected in the consolidated financial statements.

Unconditional promises, and their expected collection dates, were as follows at June 30:

	2021	2020
Less than one year	\$ 217,914	\$ 212,388
One to five years	327,146	351,737
More than five years	184,541	172,881
Total unconditional promises	<u>729,601</u>	<u>737,006</u>
Less: Allowance for doubtful contributions	(33,854)	(27,860)
Less: Net present value discount	(72,894)	(82,794)
Net pledges receivable	<u>\$ 622,853</u>	<u>\$ 626,352</u>

New pledges recorded in the years ended June 30, 2021 and 2020, were discounted at an average annual rate of 1.08 percent and 0.89 percent, respectively, using a rate that considers market and credit risk. Credit risk is also considered in the allowance for doubtful contributions.

Pledges receivable were intended for the following purposes as of June 30:

	2021	2020
Endowment for educational and general purposes	\$ 285,915	\$ 287,693
New construction and modernization of plant	182,176	166,711
Support of University operations	154,762	171,948
Net pledges receivable	<u>\$ 622,853</u>	<u>\$ 626,352</u>

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The University also has other outstanding pledges of \$55.7 million as of June 30, 2021. These pledges represent either gifts with donor-imposed conditions, containing both a barrier and a right of return/release, or other pledges that have not met the requirements for recognition.

**11. Land, Buildings, and Equipment**

Investments in land, buildings, and equipment, net, consisted of the following at June 30:

	2021			2020		
	Total Land, Buildings, and Equipment	Accumulated Depreciation	Net Land, Buildings, and Equipment	Total Land, Buildings, and Equipment	Accumulated Depreciation	Net Land, Buildings, and Equipment
Land	\$ 504,793	\$ -	\$ 504,793	\$ 504,394	\$ -	\$ 504,394
Building and building improvements	6,778,681	3,493,789	3,284,892	6,635,480	3,261,865	3,373,615
Construction in progress	996,106		996,106	794,765		794,765
Equipment	704,693	463,318	241,375	646,877	411,129	235,748
Total	<u>\$ 8,984,273</u>	<u>\$ 3,957,107</u>	<u>\$ 5,027,166</u>	<u>\$ 8,581,516</u>	<u>\$ 3,672,994</u>	<u>\$ 4,908,522</u>

The University uses componentized depreciation to calculate depreciation expense for buildings and building improvements for research facilities included in operations. The costs of research facilities are separated into the building shell, building service systems, and fixed equipment, and each component is separately depreciated.

Equipment includes physical assets owned by the University as well as software costs and moveable equipment acquired through finance leases.

Building and building improvements include physical assets owned by the University as well as leasehold improvements, financed space leases, and construction in progress. The net book value of financed space leases at June 30, 2021 and 2020, was \$65.5 million and \$68.1 million, respectively.

**12. Accrued Employee Benefit Liabilities**

Accrued employee benefit liabilities arise from employment at the University. These include liabilities for pension, postretirement benefits, postemployment benefits, unused vacation, and deferred compensation.

Postemployment benefits relating to workers' compensation, short-term disability, and continuation of medical benefits for those on long-term disability are provided to former or inactive employees after employment but before retirement. The University records the costs of such benefits on an accrual basis if the employee has provided the services from which those benefits are derived. As of June 30, 2021 and 2020, the actuarially computed liabilities on the University's consolidated statements of financial position are \$59.6 million and \$56.5 million, respectively.

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**13. Pension and Other Postretirement Benefit Costs**

**Pension Plan Benefits**

The University has four non-contributory pension plans (the “pension plans”) for supporting staff employees. All four pension plans are subject to collective bargaining agreements. Two of the plans include defined benefits for past and future service. Two of the pension plans provide defined benefits for service prior to January 1 and July 1, 1976, respectively. For these two pension plans, future benefits are provided by defined contribution plans. Charges to expenditures for the defined contribution segments of the plans amounted to \$5.5 million and \$5.4 million for the years ended June 30, 2021 and 2020, respectively.

In addition, the University provides retirement benefits for full-time faculty, officers, and certain other employees under a separate defined contribution plan (the “officer plan”). University contributions for the officer plan reported in operating expenses were \$140.0 million and \$162.4 million for the years ended June 30, 2021 and 2020, respectively.

**Postretirement Health Care and Life Insurance Benefits**

The University provides postretirement health care and life insurance benefits for certain employees. The University accrues the estimated cost of these benefits over the years that eligible employees render service.

**Obligations and Funded Status**

The University follows authoritative guidance, which requires recognition on the consolidated statements of financial position of the difference between benefit obligations and any plan assets of the University’s defined benefit and other postretirement benefit plans. In addition, the authoritative guidance requires unamortized amounts (e.g., net actuarial gains or losses and prior service cost or credits) to be recognized as changes to net assets without donor restrictions and that those amounts be adjusted as they are subsequently recognized as components of net periodic pension cost.

Amounts recognized in net assets without donor restrictions are as follows:

	<b>Pension Plan Benefits</b>		<b>Other Postretirement Benefits</b>	
	<b>2021</b>	<b>2020</b>	<b>2021</b>	<b>2020</b>
Net actuarial (gain) / loss	\$ 41,831	\$ 67,659	\$ (84,082)	\$ (32,798)
Prior service (credit) / cost	117	181		
Total amount recognized	<u>\$ 41,948</u>	<u>\$ 67,840</u>	<u>\$ (84,082)</u>	<u>\$ (32,798)</u>

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The components of accrued benefit costs for pension benefits and other postretirement benefits are as follows:

	<b>Pension Plan Benefits</b>		<b>Other Postretirement Benefits</b>	
	<b>2021</b>	<b>2020</b>	<b>2021</b>	<b>2020</b>
<b>Change in benefit obligation:</b>				
Benefit obligation, beginning of year	\$ 274,358	\$ 235,721	\$ 151,358	\$ 131,347
Service cost	11,665	9,624	7,596	6,644
Interest cost	8,849	9,177	4,753	5,284
Plan participants' contributions			5,974	6,001
Actuarial (gain) / loss	(4,589)	27,338	(11,772)	12,072
Federal subsidy			539	588
Net disbursements and transfers	(13,075)	(7,502)	(11,237)	(10,578)
Benefit obligation, end of year	<u>277,208</u>	<u>274,358</u>	<u>147,211</u>	<u>151,358</u>
<b>Change in plan assets:</b>				
Fair value of assets, beginning of year	219,020	199,232	211,725	211,319
Actual return on plan assets	28,368	18,730	53,781	4,983
Employer contributions	11,285	8,560		
Plan participants' contributions			5,974	6,001
Net disbursements and transfers	(13,075)	(7,502)	(11,237)	(10,578)
Fair value of assets, end of year	<u>245,598</u>	<u>219,020</u>	<u>260,243</u>	<u>211,725</u>
Net amount recognized	<u>\$ (31,610)</u>	<u>\$ (55,338)</u>	<u>\$ 113,032</u>	<u>\$ 60,367</u>

**Weighted-average assumptions used to determine end of year benefit obligation**

	<b>2021</b>	<b>2020</b>
Discount rate	2.25% to 3.10%	2.15% to 3.15%
Rate of compensation increase	3.00%	3.00%

The accumulated benefit obligations for the two underfunded pension plans at June 30, 2021 and 2020, were \$243.6 and \$235.2 million, respectively.

At June 30, 2021 and 2020, the projected benefit obligation exceeded the pension plan assets for two of the four plans. The projected benefit obligation for the pension plans with a benefit obligation in excess of plan assets were as follows:

<b>End of year</b>	<b>2021</b>	<b>2020</b>
Projected benefit obligation	\$ 267,393	\$ 263,240
Fair value of plan assets	233,359	205,345

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The accumulated postretirement benefit obligation for the other postretirement benefit plan and the fair value of plan assets with plan assets in excess of the accumulated postretirement benefit obligation was as follows:

<b>End of year</b>	<b>2021</b>	<b>2020</b>
Accumulated postretirement benefit obligation	\$ 147,211	\$ 151,358
Fair value of plan assets	260,243	211,725

A 6.25 percent annual rate of increase in the per capita cost of covered health care benefits for the other postretirement benefit plan was assumed for 2022. The rate was assumed to decrease gradually to 4.75 percent for year ended June 30, 2028 and remain at that level thereafter. Assumed health care cost trend rates have a significant effect on the amounts reported for the health care plans. A one-percentage-point change in assumed health care cost trend rates would have the following effect:

	<b>1-%-point increase</b>	<b>1-%-point decrease</b>
Effect on accumulated postretirement benefit obligation	\$ 19,633	\$ (15,730)

The asset allocation for the two defined benefit plans for both past and future service at June 30, 2021 and 2020, and the target allocation for 2022, by asset category, follows:

<b>Asset category</b>	<b>Target allocation</b>	<b>Percentage of plan assets at year end</b>	
	<b>2022</b>	<b>2021</b>	<b>2020</b>
U.S. large cap equity and global equity funds	26%	18%	18%
International equities (non-U.S.)	14%	21%	21%
High yield fixed income securities	10%	10%	10%
U.S. core fixed income	50%	51%	51%
	<u>100%</u>	<u>100%</u>	<u>100%</u>

The asset allocation for the two defined benefit plans for prior service only at June 30, 2021 and 2020, and the target allocation for 2022, by asset category, follows:

<b>Asset category</b>	<b>Target allocation</b>	<b>Percentage of plan assets at year end</b>	
	<b>2022</b>	<b>2021</b>	<b>2020</b>
U.S. large cap equity	10%	0%	0%
International equities (non-U.S.)	5%	4%	4%
High yield fixed income securities	5%	5%	5%
U.S. core fixed income	80%	91%	91%
	<u>100%</u>	<u>100%</u>	<u>100%</u>

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The following presents investments of the pension plans as of June 30, 2021. The Plans' investments in common collective trusts are valued at NAV as a practical expedient and are therefore excluded from the fair value hierarchy and are reported as NAV. Level 3 assets represent fixed income related investment contracts with a major life insurance company.

	<u>Level 1</u>	<u>Level 2</u>	<u>Level 3</u>	<u>NAV</u>	<u>Total</u>
Common collective trust funds					
Global equity				\$ 90,873	\$ 90,873
Fixed income				152,769	152,769
Fixed income investment contracts			\$ 1,956		1,956
Investments, at fair value	\$ -		\$ 1,956	\$ 243,642	\$ 245,598

The following table is a roll forward of the amounts for investments classified within Level 3 as described above.

	<u>June 30, 2020</u>	<u>Purchases (Gross)</u>	<u>Sales (Gross)</u>	<u>Investment gain/(loss)</u>	<u>June 30, 2021</u>
Investment contracts	\$ 1,991	\$ -	\$ (161)	\$ 126	\$ 1,956
Total level 3 investments	\$ 1,991	\$ -	\$ (161)	\$ 126	\$ 1,956

The following presents investments of the pension plans as of June 30, 2020:

	<u>Level 1</u>	<u>Level 2</u>	<u>Level 3</u>	<u>NAV</u>	<u>Total</u>
Common collective trust funds					
Global equity				\$ 81,409	\$ 81,409
Fixed income				135,620	135,620
Fixed income investment contracts			\$ 1,991		1,991
Investments, at fair value	\$ -		\$ 1,991	\$ 217,029	\$ 219,020

The following table is a roll forward of the amounts for investments classified within Level 3 as described above.

	<u>June 30, 2019</u>	<u>Purchases (Gross)</u>	<u>Sales (Gross)</u>	<u>Investment gain/(loss)</u>	<u>June 30, 2020</u>
Investment contracts	\$ 2,061	\$ -	\$ (170)	\$ 100	\$ 1,991
Total level 3 investments	\$ 2,061	\$ -	\$ (170)	\$ 100	\$ 1,991

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The asset allocation for the other postretirement benefit plan at June 30, 2021 and 2020, and the target allocation for 2022, by asset category, follows:

Asset category	Target allocation	Percentage of plan assets at year's end	
	2022	2021	2020
U.S. large cap equity and global equity funds	52%	38%	38%
International equities (non-U.S.)	16%	30%	30%
U.S. fixed income	32%	32%	32%
	<u>100%</u>	<u>100%</u>	<u>100%</u>

The following presents investments of the other postretirement benefit plan as of June 30, 2021. The Plans' investments in common collective trusts are valued at NAV as a practical expedient and are therefore excluded from the fair value hierarchy and reported as NAV.

	Level 1	Level 2	Level 3	NAV	Total
Common collective trust funds					
Global equity				\$ 176,724	\$ 176,724
Fixed income				83,519	83,519
Investments, at fair value				<u>\$ 260,243</u>	<u>\$ 260,243</u>

The following presents investments of the other postretirement benefit plan as of June 30, 2020:

	Level 1	Level 2	Level 3	NAV	Total
Common collective trust funds					
Global equity				\$ 144,192	\$ 144,192
Fixed income				67,533	67,533
Investments, at fair value				<u>\$ 211,725</u>	<u>\$ 211,725</u>

**Net Periodic Benefit Cost**

The components of net periodic benefit cost for pension benefits and other postretirement benefits are as follows:

Components of net periodic benefit cost	Pension Plan Benefits		Other Postretirement Benefits	
	2021	2020	2021	2020
Service cost	\$ 11,665	\$ 9,624	\$ 7,596	\$ 6,644
Interest cost on projected benefit obligation	8,849	9,177	4,753	5,284
Expected return on assets	(11,351)	(10,459)	(13,063)	(13,037)
Amortization of prior service cost/(credit)	65	65		
Amortization of unrecognized net losses/(gain)	4,222	3,055	(964)	(2,743)
Net periodic benefit cost	<u>13,450</u>	<u>11,462</u>	<u>(1,678)</u>	<u>(3,852)</u>

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**Amounts recognized in the Consolidated Statements of Activities**

A summary of changes in plan assets and benefit obligations recognized in the consolidated statements of activities is as follows:

	<b>Pension Plan Benefits</b>		<b>Other Postretirement Benefits</b>	
	<b>2021</b>	<b>2020</b>	<b>2021</b>	<b>2020</b>
<b>Summary of changes in plan assets and benefit obligations recognized in the Consolidated Statements of Activities</b>				
Net periodic benefit cost - service cost	\$ 11,665	\$ 9,624	\$ 7,596	\$ 6,644
Total recognized in operating	<u>11,665</u>	<u>9,624</u>	<u>7,596</u>	<u>6,644</u>
Net periodic benefit cost other than service cost	1,785	1,838	(9,274)	(10,496)
Current year actuarial (gain)/loss	(21,605)	19,067	(52,248)	20,204
Amortization of actuarial gain/(loss)	(4,222)	(3,055)	964	2,743
Amortization of prior service credit/(cost)	(65)	(65)		
Total recognized in nonoperating	<u>(24,107)</u>	<u>17,785</u>	<u>(60,558)</u>	<u>12,451</u>
Total recognized in operating and nonoperating	<u>\$ (12,442)</u>	<u>\$ 27,409</u>	<u>\$ (52,962)</u>	<u>\$ 19,095</u>

Amounts in net assets without donor restrictions expected to be recognized in net periodic benefit cost in fiscal year 2022 are as follows:

	<b>Pension Plan Benefits</b>	<b>Other Postretirement Benefits</b>
Actuarial (gain)/loss	\$ 3,609	\$ (5,334)
Prior service (credit)/cost	65	
	<u>\$ 3,674</u>	<u>\$ (5,334)</u>

<b>Weighted-average assumptions used to determine net periodic pension cost</b>	<b>2021</b>	<b>2020</b>
Discount rate	2.15% to 3.15%	3.20% to 3.75%
Expected return on plan assets	3.75% to 5.50%	3.75% to 5.50%
Rate of compensation increase	3.00%	3.00%

To arrive at assumptions for expected long-term rates of return on assets in the pension plans and the postretirement benefit plan, the University considered historical returns and future expectations for returns in each asset class in the asset allocation for the previously described pension and postretirement benefit portfolios.

Assumed health care cost trend rates have a significant effect on the amounts reported for the other postretirement benefit plan. A one-percentage-point change in the assumed health care cost trend rates would have had the following effect:

	<b>1-% point Increase</b>	<b>1-% point Decrease</b>
Effect on total service and interest cost	\$ 2,476	\$ (1,888)



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**Expected Cash Flows**

Information about the expected cash flows for the plans is as follows:

	<u>Pension Plan Benefits</u>	<u>Other Postretirement Benefits</u>
<b>Expected University contributions</b>		
2022	\$ 13,275	\$ -
<b>Expected benefit payments</b>		
2022	8,344	4,841
2023	8,881	4,884
2024	9,438	5,059
2025	10,028	5,189
2026	10,603	6,283
2027-2031	62,399	34,621
Total	<u>\$ 109,693</u>	<u>\$ 60,877</u>

Total benefits expected to be paid include both the University's share of the benefit cost net of Medicare subsidies and the participants' share of the cost, which is funded by participant contributions to the other postretirement benefit plan. The University receives a Medicare Part D subsidy from the federal government as reimbursement for certain retiree health benefits paid to plan participants, which was approximately \$0.5 million in fiscal year 2021.

**14. Lease Obligations**

The University is the lessee of various equipment and space under noncancelable right of use and finance leases. Finance lease obligations at June 30, 2021 and 2020, were \$129.2 million and \$131.3 million, respectively. Right of use lease obligations at June 30, 2021 and 2020 were \$316.3 million and \$329.9 million, respectively.

Rental expense related to operating leases totaled \$40.8 million and \$38.1 million for fiscal years ended 2021 and 2020, respectively. Future minimum rental payments under right of use and finance leases are as follows:

	<u>Right of use</u>	<u>Finance</u>
<b>Future minimum rental payments:</b>		
2022	\$ 38,240	\$ 12,591
2023	34,851	10,624
2024	34,171	8,428
2025	33,058	7,637
2026	29,124	7,036
Thereafter	228,548	204,260
Total lease payments	<u>397,992</u>	<u>250,576</u>
Less: Imputed Interest	<u>(81,663)</u>	<u>(121,337)</u>
Present value of lease obligations at June 30, 2021	<u>\$ 316,329</u>	<u>\$ 129,239</u>

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Weighted-average remaining lease term and discount rate for right of use and finance leases are as follows:

	<u>2021</u>	<u>2020</u>
Weighted average remaining lease term (in years)		
Right of use leases	7.2	7.5
Finance leases	17.1	17.3
Weighted average discount rate		
Right of use leases	3.53%	3.51%
Finance leases	4.42%	4.34%

Cash paid for amounts included in the measurement of lease obligations is as follows:

	<u>2021</u>	<u>2020</u>
Operating cash flows for right of use leases	\$37,734	\$32,890
Operating cash flows for finance leases	\$5,831	\$5,632
Financing cash flows for finance leases	\$16,791	\$12,349

The University leases properties to customers under agreements that are classified as right of use leases. The University's lessor arrangements are all operating leases and do not include any sales-type or direct finance leases. Space and equipment leased to others are included in "Land, buildings, and equipment, net" and "Institutional real estate".

## **15. Conditional Asset Retirement Obligations**

Conditional asset retirement obligations are a legal obligation to perform an asset retirement activity in which the timing and/or method of settlement are conditioned on a future event that may or may not be within the control of the University. GAAP requires that the fair value of a liability be recognized in the period in which it occurred if a reasonable estimate of fair value can be made. Uncertainty with respect to the timing and/or method of settlement of the asset retirement obligation does not defer recognition of a liability.

Conditional asset retirement obligations related to remediation or disposal of asbestos, underground storage tanks, soil, radioactive sources, equipment, and miscellaneous other items were \$126.8 million and \$122.0 million at June 30, 2021 and 2020, respectively.

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**16. Bonds and Notes Payable**

Bonds and notes payable outstanding are as follows at June 30:

	<u>2021</u>	<u>2020</u>
Dormitory Authority of the State of New York, tax exempt revenue bonds, Columbia University issues:		
Series 2020 A, 2.11%, maturing FY2051	\$ 150,000	\$ 150,000
Series 2018 A, 2.45% to 3.41%, maturing FY2029 to FY2049	150,000	150,000
Series 2018 B, 2.98%, maturing FY2039	175,185	175,185
Series 2017 A, 2.40% to 3.49%, maturing FY2028 to FY2048	150,000	150,000
Series 2017 B, 1.96% to 2.61%, maturing FY2025 to FY2030	40,475	40,475
Series 2016 A-1, 1.67%, maturing FY2027	50,000	50,000
Series 2016 A-2, 1.35% to 2.89%, maturing FY2024 to FY2047	130,000	130,000
Series 2016 B, 1.03% to 2.04%, maturing FY2022 to FY2032	123,965	146,930
Series 2015 A, 1.95% to 3.00%, maturing FY2026 to FY2046	92,535	92,535
Series 2015 B, 1.48% to 1.88%, maturing FY2022 to FY2025	21,545	27,275
Series 2012 A, 1.79% to 1.92%, maturing FY2022 to FY2023	89,065	112,930
Series 2011 A, 3.36%, maturing FY2022	15,000	255,000
Series 2009 A, variable rate, 0.02%, maturing FY2039	117,000	117,000
Series 2003 B, variable rate, 0.02%, maturing FY2024 to FY2028	30,000	30,000
Series 2002 C, variable rates, 0.06% to 0.75%, maturing FY2025 to FY2027	23,300	23,300
Taxable Series 2021 A, 2.85%, maturing FY2051	125,000	
Taxable Series 2021 B, 1.52% to 2.59%, maturing FY2031 to FY2050	180,000	
Taxable Series 2020 B, 2.34%, maturing FY2024 to FY2030	75,000	75,000
Taxable Series 2020 C, 2.00%, maturing FY2022 to FY2024	150,000	150,000
Taxable Series 2015, 3.46%, maturing FY2046	75,000	75,000
Taxable Series 2012, 3.83%, maturing FY2043	100,000	100,000
New Jersey Economic Development Corporation, tax exempt		
Series 2002, variable rate, 0.07%, maturing FY2028	3,730	4,205
Medium-Term Notes, Taxable Series C 6.53% to 7.36%, maturing FY2022	1,210	6,049
Empire State Development Corporation issues:		
9.00%, maturing FY2029	4,852	5,304
Interest-free, due FY2022	8,100	8,100
Economic Development Corporation		
Interest-free, due FY2022	10,000	10,000
Taxable Commercial Paper, variable rate, 0.05% to 2.25%	125,028	150,000
Subtotal, principal payments	<u>2,215,990</u>	<u>2,234,288</u>
Unamortized bond premium	276,896	304,027
Unamortized cost of issuance	(4,016)	(4,829)
Subtotal, bond premium and cost of issuance	<u>272,880</u>	<u>299,198</u>
Total bonds and notes payable	<u>\$ 2,488,870</u>	<u>\$ 2,533,486</u>

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Estimated principal payments on bonds and notes payable and taxable commercial paper are summarized below:

<u>Fiscal Year</u>	<u>Principal</u>
2022	\$ 146,447
2023	121,692
2024	101,395
2025	64,988
2026	71,625
Thereafter (through 2051)	1,584,815
Subtotal, Bonds and Notes Payable	<u>\$ 2,090,962</u>
Taxable Commercial Paper	125,028
Total, Principal Payments	<u>\$ 2,215,990</u>

The University issues most of its tax-exempt debt through the Dormitory Authority of the State of New York (“DASNY”). The University did not issue tax-exempt debt in fiscal year 2021. In April 2021, the University redeemed \$225 million of its Series 2011A bonds.

In July 2020, the University issued \$125 million of Series 2021A taxable bonds. These bonds pay interest at 2.85% and mature in 2050. The proceeds from Series 2021A will be used for general corporate purposes.

In July 2020, the University issued \$180 million of Series 2021B taxable bonds. These bonds pay interest at 1.52%, 2.43% and 2.59% and mature in 2030, 2044, and 2049, respectively. The proceeds from Series 2021B will be used for general corporate purposes.

The University has a \$150 million taxable commercial paper program. Between July 2020 and February 2021, the University repaid \$150 million taxable commercial paper that was outstanding at June 30, 2020. In April 2021, the University issued \$125 million under its taxable commercial paper program, which was outstanding as of June 30, 2021.

The University recorded amortization of bond premium and issuance costs, net, of \$27.1 million and \$24.9 million for the years ended June 30, 2021 and 2020, respectively, as a reduction to interest expense.

As of June 30, 2021, the University had the following operating lines of credit: \$150 million expiring in May 2024; \$100 million expiring in November 2023; \$200 million expiring in October 2022; \$100 million expiring in June 2022; and \$50 million expiring in July 2021. Additionally, the University had two \$100 million standby lines of credit supporting self-liquidity for variable rate debt outstanding, expiring in January 2022 and January 2023. The lines are provided by six different lending institutions and, as of June 30, 2021, no balances were outstanding on the lines of credit.

The University has administrative covenants on its tax-exempt debt and lines of credit, with which it was in compliance as of June 30, 2021 and 2020.

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On October 1, 2008, the University entered into a \$200 million notional value fixed payer interest rate swap agreement to protect against the risk of interest rate changes. The estimated fair value of the swap liability was \$83.4 million and \$110.7 million at June 30, 2021 and 2020, respectively. The fair value of the swap is obtained by taking the present value of all future cash flows on the swap implied by the forward curve.

The University has letters of credit with various financial institutions totaling \$55.2 million at June 30, 2021 and 2020, respectively, primarily to secure certain self-insured liabilities in accordance with New York State requirements related to workers' compensation. There have been no draws under the letters of credit.

**17. Insurance**

In connection with managing financial risks through various third-party insurance programs, the University is self-insured in certain areas. Funded self-insurance liabilities primarily cover deductibles on general liability, trustees and officers' liability, and property insurance claims. Self-insurance liabilities are actuarially calculated on an annual basis. The University's core liability coverage is purchased through Pinnacle RRG, a Vermont-based risk retention group with seventeen other universities.

The University obtains medical malpractice insurance through MCIC and MLMIC. MCIC is a group-captive insurance company owned by the University, The Johns Hopkins Hospital, The Johns Hopkins University, University of Rochester Medical Center, Weill Cornell Medical College, Yale New Haven Health, Yale University School of Medicine, and NYP. MLMIC is a mutual company where policyholders are owners with full voting rights to elect the company's Board of Directors, thereby having direct input into vital areas of operation. The governing Board is comprised primarily of practicing physicians, dentists, and hospital administrators. More than 2,000 of the University's faculty physicians and dentists are enrolled in MCIC or MLMIC. The University has recorded self-insurance and medical malpractice liabilities of approximately \$356.7 million and \$332.4 million as of June 30, 2021 and 2020, respectively in "Other long-term liabilities". The medical malpractice liabilities of approximately \$216.5 million and \$208.7 million as of June 30, 2021 and 2020, respectively, are reported gross with an offsetting receivable for anticipated recoveries of \$145.2 million and \$140.7 million, respectively, recorded in "Other assets".

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**18. Affiliations and Related Party Transactions**

The University maintains several clinical and education affiliation agreements with other organizations. Revenues and expenses from these agreements are accounted for in the operating activities section of the consolidated statements of activities. The most significant affiliation agreement is with NYP.

The University receives reimbursement from NYP for the provision of medical, professional, and supervisory staff services as well as other technical assistance. NYP provides funding to clinical departments for specific purposes including administration, supervision, and teaching of the NYP resident staff and salary support for faculty and staff providing services to NYP. In addition, NYP provides funding for clinical programs that the University and NYP would like to see developed or expanded. NYP also provides the departments with certain facilities and services (outpatient faculty practice offices, nursing, telecommunications, etc.) for which the University is invoiced on a monthly basis. Finally, the University and NYP collaborate and fund joint projects for which specific agreements are negotiated.

In addition, the University and NYP negotiate a joint budget, which forms the basis for the affiliation agreement. The fiscal year 2021 joint budget was approximately \$390.7 million. The payments to NYP for goods and services were \$108.1 million. The majority of revenues received pursuant to this agreement are reflected in the consolidated financial statements as a portion of “Patient care revenue” and the majority of the expenses related to this agreement are reflected in “Patient care expense”.

The University records both receivables from and payables to NYP on the consolidated statements of financial position. The University has no liability for obligations and debt incurred by NYP. The University and NYP operate a radiological imaging center, ColumbiaDoctors/NewYork-Presbyterian Imaging, Inc. (CDNYPI). CDNYPI is a not-for-profit membership corporation, which was incorporated to operate pursuant to the terms and provisions of Article 28 of the New York Public Health Law, whereby it provides a full range of general radiology and interventional radiology services. In order to provide for efficient delivery of services and to secure a high level of expertise from existing resources, CDNYPI has entered into clinical and administrative agreements with the University and NYP. The revenue generated from these agreements was \$34.6 million and \$33.3 million for the years ended June 30, 2021 and 2020, respectively. In addition, the University recorded an interest in CDNYPI in the amount of \$15.1 million and \$7.1 million as of June 30, 2021 and 2020, respectively.

The University controls a not-for-profit practice entity and three professional corporations and, as such, consolidates these entities into the University’s consolidated financial statements.

From time to time endowment funds held for the benefit of the University may be transferred from the CPMC Fund, Inc. to the University pursuant to the consent of the Trustees of the CPMC Fund, Inc. There were no transfers during the years ending June 30, 2021 and 2020.

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**19. Liquidity and Availability of Resources**

As part of the University's liquidity management, financial assets are structured to be available as its general expenditures, liabilities, and other obligations come due. In addition, the University may invest cash in excess of daily requirements in short-term and/or liquid investments. To further help manage unanticipated liquidity needs, the University has committed bank lines of credit along with a taxable commercial paper program.

The University's financial assets and liquidity resources available for general expenditures within one year of the date of the consolidated statements of financial position are as follows:

	<u>2021</u>	<u>2020</u>
<b>Financial Assets:</b>		
Cash and cash equivalents	\$ 754,556	\$ 974,112
Accounts receivable, net	549,336	509,433
Pledges receivable for operations and plant, net	119,771	122,414
Operating investments	1,727,252	1,489,509
Approved endowment payout for subsequent year	554,972	551,907
Other financial assets	22,107	17,157
Total financial assets available within one year	<u>3,727,994</u>	<u>3,664,532</u>
<b>Liquidity resources:</b>		
Taxable commercial paper program	150,000	150,000
Less: Taxable commercial paper issued	(125,000)	(150,000)
Bank lines of credit (undrawn)	800,000	800,000
Total liquidity resources available	<u>825,000</u>	<u>800,000</u>
Total financial assets and liquidity resources available within one year	<u>\$ 4,552,994</u>	<u>\$ 4,464,532</u>

Additionally, the University has board-designated funds functioning as endowments of \$4.3 and \$3.3 billion as of June 30, 2021 and 2020, respectively. Although the University does not intend to spend from these endowments other than amounts appropriated for general expenditure as part of its annual appropriation process, \$3.8 and \$2.9 billion, respectively, of these endowments without donor restrictions could be made available if necessary. However, both the funds functioning as endowment and donor-restricted endowments contain investments with lock-up provisions that reduce the total investments that could be made available (see Note 6 for disclosures about investments).

**The Trustees of Columbia University in the City of New York**  
**Notes to the Consolidated Financial Statements**  
**For the Years Ended June 30, 2021 and 2020**  
**(in thousands of dollars, unless otherwise noted)**

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**20. Contingencies and Commitments**

From time to time, various claims and suits generally incident to the conduct of normal business are pending or may arise against the University.

In the opinion of counsel and management of the University, after taking into account insurance coverage, losses, if any, from the resolution of pending litigation should not have a material effect on the University's financial position or results of operations.

All funds expended in connection with government grants and contracts are subject to audit by government agencies. While the ultimate liability, if any, from audits of government grants and contracts by government agencies, claims, and suits is presently not determinable, it should not, in the opinion of counsel and management, have a material effect on the University's financial position or results of activities.

The University is subject to laws and regulations concerning environmental remediation and will, from time to time, establish reserves for potential obligations that management considers probable and for which reasonable estimates can be made (see Note 15 for disclosures about conditional asset retirement obligations). These estimates may change depending upon the nature and extent of contamination, appropriate remediation technologies, and regulatory approvals. The University is not aware of any existing conditions that it currently believes are likely to have a material adverse effect on the University's financial position, changes in net assets, or cash flows.

The University's capital improvement program and related commitments include projects that address the major strategic objectives of the University. As part of the capital improvement program, the University has entered into contracts to purchase properties with an aggregate value of \$44.3 million. As of June 30, 2021, approximately \$43.4 million is still outstanding.

The University has made commitments related to its expansion in Manhattanville, certain of which are based upon events in the future which would result in cash and in-kind payments from the University. Those that are estimable have been recorded as liabilities.



**The Trustees of Columbia University in the City of New York**  
**Notes to the Consolidated Financial Statements**  
**For the Years Ended June 30, 2021 and 2020**  
(in thousands of dollars, unless otherwise noted)

**21. Expenses by Functional and Natural Classification**

Expenses are reported for the University's primary program activities. The consolidated statements of activities also report certain categories of expenditures that support more than one major program of the University. These expenses include operation and maintenance of plant, depreciation expense, and interest expense.

Expenses by functional and natural classification for the years ended June 30, 2021 and 2020 are as follows:

	2021				
	Expenses per Statement of Activities	Allocation	Natural Classification post Allocation		Final Allocated Expenses
			Compensation and Benefits	Other	
Instruction and educational administration	\$ 1,937,941	\$ 300,419	\$ 1,570,571	\$ 667,788	\$ 2,238,359
Research	701,610	105,443	434,682	372,371	807,053
Patient care expense	1,246,626	87,219	1,025,328	308,518	1,333,846
Operation and maintenance of plant	312,826	(312,827)	-	-	-
Institutional support	345,088	51,824	254,055	142,856	396,911
Auxiliary enterprise	147,938	120,219	101,430	166,727	268,157
Depreciation expense	290,839	(290,839)	-	-	-
Interest expense	61,458	(61,458)	-	-	-
Total operating expenses	5,044,326	-	3,386,066	1,658,260	5,044,326
Net periodic benefit cost other than service cost	(7,489)	-	(7,489)	-	(7,489)
Total expenses	\$ 5,036,837	\$ -	\$ 3,378,577	\$ 1,658,260	\$ 5,036,837

  

	2020				
	Expenses per Statement of Activities	Allocation	Natural Classification post Allocation		Final Allocated Expenses
			Compensation and Benefits	Other	
Instruction and educational administration	\$ 2,063,756	\$ 294,372	\$ 1,619,619	\$ 738,509	\$ 2,358,128
Research	660,091	102,566	412,436	350,221	762,657
Patient care expense	1,218,669	85,632	1,020,797	283,504	1,304,301
Operation and maintenance of plant	305,904	(305,904)	-	-	-
Institutional support	287,104	50,941	213,249	124,796	338,045
Auxiliary enterprise	161,309	117,978	110,511	168,776	279,287
Depreciation expense	292,769	(292,769)	-	-	-
Interest expense	52,816	(52,816)	-	-	-
Total operating expenses	5,042,418	-	3,376,612	1,665,806	5,042,418
Net periodic benefit cost other than service cost	(8,658)	-	(8,658)	-	(8,658)
Total expenses	\$ 5,033,760	\$ -	\$ 3,367,954	\$ 1,665,806	\$ 5,033,760

The allocation of operation and maintenance of plant is based on square footage occupancy. Depreciation expense includes depreciation of buildings, building improvements, and equipment. The allocation of depreciation on buildings and building improvements is based on square footage occupancy. Depreciation on equipment is allocated to the programs for which the equipment was purchased. Interest expense is allocated according to the same methodologies used for building depreciation.

**The Trustees of Columbia University in the City of New York**  
**Notes to the Consolidated Financial Statements**  
**For the Years Ended June 30, 2021 and 2020**  
(in thousands of dollars, unless otherwise noted)

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**22. Subsequent Events**

The University has performed an evaluation of subsequent events through October 20, 2021, which is the date the consolidated financial statements were issued.

**The Trustees of Columbia University in the City of New York**  
**Notes to the Consolidated Financial Statements**  
**For the Years Ended June 30, 2021 and 2020**  
(in thousands of dollars, unless otherwise noted)

**23. Financial Responsibility Standards**

The University participates in federal Title IV student financial assistance programs, which require it to meet standards of financial responsibility based on criteria determined by the U.S. Department of Education (ED), as set forth in 34 CFR 668.171. The criteria for private institutions include the annual calculation by ED of a financial responsibility composite score, as further outlined in 34 CFR 668.172, using audited financial statements submitted through ED's eZ-Audit system. The composite score has been and will continue to be based on three ratios: Primary Reserve, Equity, and Net Income. These ratios utilize the following financial data of the Institution, which are not otherwise presented in the financial statements or other notes to the financial statements, as of and for the year ended June 30, 2021:

Required input per standards	Ratio(s) Uses	Input Amount	Related financial statement amount not used as input on supplementary schedule
Property, plant and equipment, net - pre-implementation	Primary reserve	\$ 5,016,784	
Property, plant and equipment, net - post-implementation with outstanding debt for original purchase	Primary reserve	524,636	
Property, plant and equipment, net - post-implementation with outstanding debt for original purchase	Primary reserve	17,711	
Construction in progress	Primary reserve	396,359	
Total property, plant, and equipment, net	N/A		\$ 5,955,490
Institutional real estate			\$ 928,324
Land, buildings, and equipment, net			5,027,166
Total property, plant, and equipment, net			\$ 5,955,490
Long-term debt - for long-term purposes pre-implementation	Primary reserve	\$ 1,708,594	
Long-term debt - for long-term purposes post-implementation	Primary reserve	162,343	
Subtotal long-term debt for the purchase of PPE	Primary reserve		\$ 1,870,937
Other long-term debt	N/A		747,172
Total long-term debt	N/A		\$ 2,618,109
Bonds and notes payable			\$ 2,488,870
Capital leases			129,239
Total long-term debt			\$ 2,618,109
Net assets with donor restrictions: restricted by purpose or time			
Annuities and life income funds with donor restrictions	Primary reserve	\$ 112,901	
Term endowments with donor restrictions	Primary reserve	5,828,500	
Pledges	N/A		\$ 336,938
Unexpended capital and other	N/A		695,882
Net assets with donor restrictions: restricted in perpetuity	Primary reserve	4,396,210	
Total net assets with donor restrictions			\$ 11,370,431
Unsecured related party receivable	Primary reserve; Equity	\$ 14,633	
Inputs directly from the statement of activities			
Total expenses without donor restrictions (operating)	Primary reserve	\$ 5,044,326	
Plus: non-operating expenses and other losses	Primary reserve	4,244	
Total expenses and losses without donor restrictions	Primary reserve	\$ 5,048,570	
Total operating revenue and other additions	Net income	\$ 5,037,610	
Less: investment return appropriated for spending	Net income	(190,472)	
Plus: non-operating revenues and other gains	Net income	1,117,007	
Total revenue and gains without donor restrictions	Net income	\$ 5,964,145	

## **Supplemental Schedule**

**The Trustees of Columbia University in the City of New York**  
**Schedule of Expenditures of Federal Awards**  
**For year ended June 30, 2021**

<u>Federal Grantor / Pass-through Grantor</u>	<u>Assistance Listing No.</u>	<u>Award Identification No</u>	<u>Pass-through Contract Number</u>	<u>Passthrough Name</u>	<u>Subrecipients</u>	<u>R&amp;D Cluster</u> <u>Total Expenditures (Includes Subrecipients)</u>
<b>Research &amp; Development Cluster</b>						
<b>Department of Health &amp; Human Services</b>						
<b>Direct Awards</b>						
Centers for Disease Control and Prevention/DHHS	93.RD	75D30119C06701			\$231,072	\$1,473,491
Training in General, Pediatric, and Public Health Dentistry	93.059	1D88HP37554 0-01-00			\$0	\$758,498
Innovations in Applied Public Health Research	93.061	5R01TS000285-02-00			\$0	\$278,591
Prevention of Disease, Disability, and Death by Infectious Diseases	93.084	1U01CK000592-01-00			\$0	\$465,668
Food and Drug Administration Research	93.103	5R01FD006007 04			\$57,777	\$1,385,585
Maternal and Child Health Federal Consolidated Programs	93.110	6 R40MC32879-01-03			\$0	\$677
Nurse Anesthetist Traineeship	93.124	5A22HP33098-03-00			\$0	\$66,929
Emergency Medical Services for Children	93.127	5U03MC00007 21 00			\$257,985	\$589,929
Injury Prevention and Control Research and State and Community Based Programs	93.136	5R49CE003094-03-00			\$27,642	\$751,717
National Research Service Award in Primary Care Medicine	93.186	5T32HP10260 -13- 00			\$0	\$180,423

The accompanying footnotes are an integral part of the Schedule of Expenditures of Federal Awards

**The Trustees of Columbia University in the City of New York**  
**Schedule of Expenditures of Federal Awards**  
**For year ended June 30, 2021**

<u>Federal Grantor / Pass-through Grantor</u>	<u>Assistance Listing No.</u>	<u>Award Identification No</u>	<u>Pass-through Contract Number</u>	<u>Passthrough Name</u>	<u>Subrecipients</u>	<u>R&amp;D Cluster</u> <u>Total Expenditures (Includes Subrecipients)</u>
National Research Service Awards Health Services Research Training	93.225	5T32HS026121-04			\$0	\$390,630
Research on Healthcare Costs, Quality and Outcomes	93.226	5R01HS024274-04			\$720,491	\$3,257,342
Occupational Safety and Health Program	93.262	6K01OH011186-03M001			\$0	\$338
Centers for Disease Control and Prevention Investigations and Technical Assistance	93.283	5U01DP006436-03			\$184,696	\$907,919
Nurse Education, Practice Quality and Retention Grants	93.359	6UD7HP29872 02 04			\$0	\$50,150
CDC Undergraduate Public Health Scholars Program (CUPS): A Public Health Experience to Expose Undergraduates Interested in Minority Health to Public Health and the Public Health Professions	93.456	5NU50MN000003-04-01			\$0	\$431,176
Public Health Training Centers Program	93.516	5UB6HP31686-04-00			\$288,827	\$696,650
COVID-19-Ryan White HIV/AIDS Program AIDS Education and Training Centers Program COVID 19 Response	93.914	1H1LHA37344-01-00			\$129,321	\$219,217
Ryan White HIV/AIDS Dental Reimbursement and Community Based Dental Partnership Grants	93.924	6H65HA00014-17-00			\$134,249	\$360,572
HIV Demonstration, Research, Public and Professional Education Projects	93.941	6U01PS005202-01-01			\$172,635	\$182,180

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**The Trustees of Columbia University in the City of New York**  
**Schedule of Expenditures of Federal Awards**  
**For year ended June 30, 2021**

<u>Federal Grantor / Pass-through Grantor</u>	<u>Assistance Listing No.</u>	<u>Award Identification No.</u>	<u>Pass-through Contract Number</u>	<u>Passthrough Name</u>	<u>Subrecipients</u>	<u>Total Expenditures (Includes Subrecipients)</u>
Primary Care Medicine and Dentistry Clinician Educator Career Development Awards	93.976	5K02HP30811 -04-00			\$0	\$147,853
Sexually Transmitted Diseases (STD) Prevention and Control Grants	93.977	6NU62PS924513-03-03			\$0	\$-707
Sexually Transmitted Diseases (STD) Provider Education Grants	93.978	5NU62PS924586-02-00			\$0	\$482,966
<b>Total Direct Award Programs</b>					<b>\$2,204,695</b>	<b>\$13,077,794</b>
<b>Pass-through Awards</b>						
<b>Centers for Disease Control and Prevention/DHHS</b>						
Tuberculosis Trials Consortium	93.RD	DVAMC CU16-2550	15FED1511233-0003	DEPARTMENT OF VETERANS AFFAIRS	\$0	\$23,529
COVID-19-A Multi-site, Randomized, DoubleBlind, Multi-Arm Historical Control, Comparative Trial of the Safety & Efficacy of Hydroxychloroquine, & the Combo of Hydroxychloroquine and Famotidine	93.RD	FIMR 563372CU	75A50120C00078	FEINSTEIN INSTITUTE FOR MEDICAL RESEARCH	\$0	\$-4,306
COVID-19-Virtual Network to Investigate the Trajectory of COVID-19-Related Severe Outcomes	93.RD	WESTAT 6765-00SA005	75D30120C07986	WESTAT	\$0	\$92,782
COVID-19-Applied Research to Address the Coronavirus (COVID-19) Emerging Public Health Emergency, BAA NOTICE ID 75301-20-R-67897	93.RD	ABTAI 51352	75D30120C08150	ABT ASSOCIATES INC.	\$0	\$1,819,589
Continued Arsenic Testing for Hunterdon Healthcare Patients	93.RD	NJDEP 8882968	CDC CU20-1087	NEW JERSEY DEPT. OF ENVIRON. PROTECTION	\$0	\$1,041
ABTAI 44717-50759 Pandemic Influenza Study TASK ORDER NO. 50759	93.RD	ABTAI 44717-50759	HHSD200002013M53890B	ABT ASSOCIATES INC.	\$0	\$3,147
ABTAI 44717-50886 Pandemic Influenza Study TASK ORDER NO. 50886	93.RD	ABTAI 44717-51238	HHSD200002013M53890B/75D 30119F0	ABT ASSOCIATES INC.	\$0	\$333
Actigraphy, a non-invasive device to facilitate PAH trials and drugs development	93.RD	UCOL FY19.827.006	HHSF223201610046C	UNIVERSITY OF COLORADO	\$0	\$-4
Conduct Surveillance Activities for Safety and Effectiveness of Biologics	93.RD	IQVIA 100231	HHSF223201810023I	IQVIA GOVERNMENT SOLUTIONS	\$0	\$86,401
Alternative Dosing of Exemestane in Postmenopausal Women with Stage 0-II ER-Positive Breast Cancer a Randomized Presurgical Trial	93.RD	UTMDA 00004054	HHSN261201200034I	UNIVERSITY OF TEXAS M.D. ANDERSON CANCERCENTER	\$0	\$13,960
Biodosimetry After Radiologic and Nuclear Events	93.RD	ASELL PO 20170003	PO 20170003	ASELL LLC.	\$0	\$56,630
					\$0	\$2,093,102
<b>Prevention of Disease, Disability, and Death by Infectious Diseases</b>						
Northeast Regional Center for Excellence in Vector Borne Diseases	93.084	CU 81477-10822	6U01CK000509-01-09	CORNELL UNIVERSITY	\$0	\$257,753
					\$0	\$257,753
<b>Food and Drug Administration Research</b>						
Analgesic, Anesthetic, and Addiction Clinical Trial Translations, Innovations, Opportunities, and Networks (ACTTION) public-private partnership	93.103	URMC 417811G URFAOGR511088	5U01FD005936-05	UNIVERSITY OF ROCHESTER MEDICAL CENTER	\$0	\$51,215
					\$0	\$51,215

The accompanying footnotes are an integral part of the Schedule of Expenditures of Federal Awards

**The Trustees of Columbia University in the City of New York**  
**Schedule of Expenditures of Federal Awards**  
**For year ended June 30, 2021**

<u>Federal Grantor / Pass-through Grantor</u>	<u>Assistance Listing No.</u>	<u>Award Identification No</u>	<u>Pass-through Contract Number</u>	<u>Passthrough Name</u>	<u>Subrecipients</u>	<u>Total Expenditures (Includes Subrecipients)</u>	<b>R&amp;D Cluster</b>
<b>Injury Prevention and Control Research and State and Community Based Programs</b>							
Randomized Controlled Trial of Relay NYC s Nonfatal Overdose Response Program	93.136	NYMC 19-A0-00-1003246	1R01CE003154-01	NEW YORK UNIVERSITY MEDICAL CENTER	\$0	\$8,321	
Michigan Youth Violence Prevention Center (MI-YVPC) Community Engagement and Revitalization	93.136	UMICHG 3004386942	5U01CE002698-02	UNIVERSITY OF MICHIGAN	\$0	\$33,828	
Studying the Philadelphia Resilience Project as a Response to Overdose	93.136	UPENN 578261	6R01CE003143-01-01	UNIVERSITY OF PENNSYLVANIA	\$0	\$7,354	
					\$0	\$49,503	
<b>Research on Healthcare Costs, Quality and Outcomes</b>							
The effects of state sepsis mandates on hospital mortality, health care utilization, and costs	93.226	UPMC O0057761 (130289-1)	1R01HS025146-01A1	UNIVERSITY OF PITTSBURGH MEDICAL CENTER	\$0	\$-3	
IMProving Outcomes Related to patients Through Advanced Nursing Technology (IMPORTANT)	93.226	RFCUNY CM00005857-00	1R03HS027006-01A1	RESEARCH FOUNDATION OF CITY UNIVERSITY OF NEW YORK	\$0	\$4,050	
Consumer Assessment of Healthcare Providers and Systems CAHPS V	93.226	YU GR112701 (CON-80002977)	5U18HS016978-13	YALE UNIVERSITY	\$0	\$3,578	
Preventing Wrong Drug and Wrong Patient Errors with Indication Alerts in CPOE Systems	93.226	NWU SP0037488-PROJ0010282	R01HS024945	NORTHWESTERN UNIVERSITY	\$0	\$158,808	
Homecare-CONCERN: Building risk models for preventable hospitalizations and emergency department visits in homecare	93.226	VNSNY 4629 2020 CUSON	R01HS027742	VISITING NURSE SERVICE OF NEW YORK	\$0	\$20,927	
					\$0	\$187,360	
<b>Policy Research and Evaluation Grants</b>							
Supporting the Development of the Poverty Research Center at the University of Wisconsin	93.239	UWIMAD 703K802	1H79AE000103-01	UNIVERSITY OF WISCONSIN MADISON	\$0	\$91,008	
					\$0	\$91,008	
<b>Substance Abuse and Mental Health Services Projects of Regional and National Significance</b>							
Mental Disorders Prevalence Study	93.243	RTI 2-312-0217186-65729L	1H79FG000030-01	RESEARCH TRIANGLE INSTITUTE	\$0	\$303,233	
Integrated Healthcare + Housing	93.243	P2PPA CU62310-01	1H79SM062310-01	PATHWAYS TO HOUSING PA	\$0	\$21,256	
Medication Assisted Treatment Program at Project HOME	93.243	PROHOME CU62310-01	1H79TI081611-01	PROJECT H.O.M.E.	\$0	\$20,767	
2019 Providers Clinical Support System-Medicated Assisted Treatment	93.243	AAAP PCSSMAT19-15	1H79TI081968-01	AMERICAN ACADEMY OF ADDICTION PSYCHIATRY	\$0	\$109,318	
					\$0	\$454,574	
<b>Advanced Nursing Education Workforce Grant Program</b>							
HRSA Advanced Nursing Education Nurse Practitioner Residency (ANE-NPR) Program	93.247	BASSETT CU19-0741	HRSA 1T14HP33198-01-00	BASSETT HEALTHCARE NETWORK	\$0	\$56,291	
					\$0	\$56,291	
<b>Occupational Safety and Health Program</b>							
Multimodal Neuroimaging of Cognitive and Emotional Networks in Young Adults Exposed to 9/11 as Children	93.262	RFMH 27019	1U01OH011694-01	RESEARCH FOUNDATION FOR MENTAL HYGIENEINC	\$0	\$17,479	
Prenatal WTC Chemical Exposures, Birth Outcomes and CardiometabolicRisks	93.262	NYU 17-A1-00-006514-01	U01OH011299	NEW YORK UNIVERSITY MEDICAL CENTER	\$0	\$120,804	
					\$0	\$138,283	
<b>Centers for Disease Control and Prevention Investigations and Technical Assistance</b>							

The accompanying footnotes are an integral part of the Schedule of Expenditures of Federal Awards



**The Trustees of Columbia University in the City of New York**  
**Schedule of Expenditures of Federal Awards**  
**For year ended June 30, 2021**

<u>Federal Grantor / Pass-through Grantor</u>	<u>Assistance Listing No.</u>	<u>Award Identification No</u>	<u>Pass-through Contract Number</u>	<u>Passthrough Name</u>	<u>Subrecipients</u>	<u>Total Expenditures (Includes Subrecipients)</u>	<b>R&amp;D Cluster</b>
COVID-19-Virtual Network to Investigate the Trajectory of COVID-19 Related Severe Outcomes	93.283	Westat 6765-00-SA010	75D30120C07986	WESTAT	\$0	\$30,130	
						<u>\$0</u>	<u>\$30,130</u>
<b>Protecting and Improving Health Globally: Building and Strengthening Public Health Impact, Systems, Capacity and Security</b>							
Ethiopia SI GEEKS Data Triangulation	93.318	TFGH CU21-1643	NU2RGH001906	TASK FORCE FOR GLOBAL HEALTH INC	\$0	\$4,003	
						<u>\$0</u>	<u>\$4,003</u>
<b>Sickle Cell Treatment Demonstration Program</b>							
Northeast Region Sickle Cell Disease Treatment Demonstration Regional Collaborative Program	93.365	JH 2003735144	5U1EMC227864-06-00	JOHNS HOPKINS UNIVERSITY	\$0	\$46,355	
						<u>\$0</u>	<u>\$46,355</u>
<b>Strengthening Public Health Systems and Services through National Partnerships to Improve and Protect the Nation's Health</b>							
COVID-19-Heterogeneous forecast and nowcast of COVID -19 at county scale	93.421	CSTE 7456	5NU38OT000297-02-00	COUNCIL OF STATE AND TERRITORIAL EPIDEMIOLOGISTS	\$0	\$110,476	
COVID-19-COVID-19 Electronic Health Data Initiative	93.421	TFGH CD33-PCOR	NU38OT000316-03-02	TASK FORCE FOR GLOBAL HEALTH INC	\$0	\$66,753	
						<u>\$0</u>	<u>\$177,229</u>
<b>Opioid STR</b>							
Opioid Response Network: Collaborating, Advancing, Responding, Educating	93.788	AAAP SOR-CARE-40	1H79 TI083343-01	AMERICAN ACADEMY OF ADDICTION PSYCHIATRY	\$0	\$59,275	
FY 2018 Opioid State Targeted Response Technical Assistance (STR TA)	93.788	AAAP States 16-2	1H79TI080816-01	AMERICAN ACADEMY OF ADDICTION PSYCHIATRY	\$0	\$115,031	
						<u>\$0</u>	<u>\$174,306</u>
<b>Health Careers Opportunity Program</b>							
HCOP Northeast Regional Alliance (NERA) MedPrep Scholars Program	93.822	ISMMS 0253-6646-4609	1D18HP321210100	ICAHN SCHOOL OF MEDICINE AT MOUNT SINAI	\$0	\$58,334	
						<u>\$0</u>	<u>\$58,334</u>
<b>HIV Emergency Relief Project Grants</b>							
RYAN WHITE PART A CONTRACT 93-EVL-4645 FOR PLANNING AND EVALUATION (BASE)	93.914	PUBHS 93 EVL 4645	2H89HA00015-30-00	PUBLIC HEALTH SOLUTIONS	\$0	\$596,279	
						<u>\$0</u>	<u>\$596,279</u>
Total Pass-through Programs					<u>\$0</u>	<u>\$4,465,725</u>	
<b>Total Department of Health &amp; Human Services (Excluding NIH)</b>					<u>\$2,204,695</u>	<u>\$17,543,519</u>	
<b>National Institute of Health</b>							
<b>Direct Awards</b>							
Fogarty International Center/NIH/DHHS	93.RD	FIC CU19-1769			\$49,001	\$1,575,199	
						<u>\$0</u>	<u>\$514,589</u>
NAT CTR FOR ADV TRANS SCIENCES/NIH/DHHS	93.RD	2UL1TR001873-06			\$0	\$514,589	

The accompanying footnotes are an integral part of the Schedule of Expenditures of Federal Awards

**The Trustees of Columbia University in the City of New York**  
**Schedule of Expenditures of Federal Awards**  
**For year ended June 30, 2021**

<u>Federal Grantor / Pass-through Grantor</u>	<u>Assistance Listing No.</u>	<u>Award Identification No</u>	<u>Pass-through Contract Number</u>	<u>Passthrough Name</u>	<u>Subrecipients</u>	<u>R&amp;D Cluster</u> <u>Total Expenditures</u> <u>(Includes Subrecipients)</u>
Family Smoking Prevention and Tobacco Control Act Regulatory Research	93.077	5R21HL153700-02			\$0	\$210,242
Environmental Health	93.113	5R01ES025225-06			\$2,586,026	\$14,027,576
Oral Diseases and Disorders Research	93.121	5R01DE028135-04			\$562,287	\$4,363,475
NIEHS Superfund Hazardous Substances_Basic Research and Education	93.143	5P42ES010349-18			\$40,351	\$601,825
Human Genome Research	93.172	5RM1HG007257-09			\$842,081	\$6,084,654
Research Related to Deafness and Communication Disorders	93.173	5R01DC018060-03			\$1,011,310	\$7,300,231
Research and Training in Complementary and Integrative Health	93.213	5R61AT009989-02			\$81,376	\$207,404
National Center on Sleep Disorders Research	93.233	5R01HL141494-04			\$0	\$1,596,356
Mental Health Research Grants	93.242	5P50MH109429-04			\$6,027,793	\$32,821,508
Alcohol Research Programs	93.273	51R01AA027079-04			\$1,180,463	\$4,668,915
Drug Abuse and Addiction Research Programs	93.279	5UM1DA049415-03			\$6,199,857	\$27,628,267

The accompanying footnotes are an integral part of the Schedule of Expenditures of Federal Awards

**The Trustees of Columbia University in the City of New York**  
**Schedule of Expenditures of Federal Awards**  
**For year ended June 30, 2021**

<u>Federal Grantor / Pass-through Grantor</u>	<u>Assistance Listing No.</u>	<u>Award Identification No</u>	<u>Pass-through Contract Number</u>	<u>Passthrough Name</u>	<u>Subrecipients</u>	<u>R&amp;D Cluster</u> <u>Total Expenditures (Includes Subrecipients)</u>
Discovery and Applied Research for Technological Innovations to Improve Human Health	93.286	5P41EB027062-03			\$867,227	\$6,613,451
Minority Health and Health Disparities Research	93.307	5U01MD011279-05			\$1,083,486	\$5,379,144
Trans-NIH Research Support	93.310	3OT2OD026556-01S3			\$5,390,684	\$17,741,369
National Center for Advancing Translational Sciences	93.350	5UL1TR001873-05			\$407,353	\$14,056,625
Research Infrastructure Programs	93.351	1S10OD026749-01			\$29,092	\$925,623
21st Century Cures Act - Beau Biden Cancer Moonshot	93.353	5U01CA247573-02			\$0	\$767,174
Nursing Research	93.361	5R01NR018831-03			\$1,983,349	\$6,846,780
Cancer Cause and Prevention Research	93.393	5U01CA164920-09			\$3,281,845	\$18,354,270
Cancer Detection and Diagnosis Research	93.394	5R01CA228275-04			\$229,359	\$1,680,653
Cancer Treatment Research	93.395	5R01CA173481-09			\$366,661	\$4,886,077

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<u>Federal Grantor / Pass-through Grantor</u>	<u>Assistance Listing No.</u>	<u>Award Identification No</u>	<u>Pass-through Contract Number</u>	<u>Passthrough Name</u>	<u>Subrecipients</u>	<u>R&amp;D Cluster</u> <u>Total Expenditures (Includes Subrecipients)</u>
Cancer Biology Research	93.396	5R35CA197745-07			\$2,084,547	\$15,769,659
Cancer Centers Support Grants	93.397	2P30CA013696-46			\$430,062	\$9,605,262
Cancer Research Manpower	93.398	5T32CA203703-05			\$0	\$2,308,740
Cancer Control	93.399	5UG1CA189960-08			\$78,750	\$1,064,846
Preventing Heart Attacks and Strokes in High Need Areas	93.816	5R01AI120989-06			\$34,412	\$793,003
Cardiovascular Diseases Research	93.837	5R01HL139671-03			\$3,821,811	\$37,961,911
Lung Diseases Research	93.838	5R01HL093081-10			\$2,716,786	\$14,021,196
Blood Diseases and Resources Research	93.839	5R01HL148151-03			\$773,908	\$5,473,097
Arthritis, Musculoskeletal and Skin Diseases Research	93.846	5R01AR073180-03			\$1,185,773	\$11,455,027
Diabetes, Digestive, and Kidney Diseases Extramural Research	93.847	5U01DK123559-03			\$3,613,136	\$37,655,682
Extramural Research Programs in the Neurosciences and Neurological Disorders	93.853	5U01NS095869-04			\$10,816,741	\$52,958,460

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						<u>Total Expenditures (Includes Subrecipients)</u>
Allergy and Infectious Diseases Research	93.855	5U54AI138370-04			\$6,278,722	\$45,431,933
Biomedical Research and Research Training	93.859	5T32GM007367-46			\$1,016,298	\$33,734,988
Child Health and Human Development Extramural Research	93.865	5R01HD091003-05			\$3,152,702	\$12,345,518
Aging Research	93.866	5U01AG051412-05			\$17,303,019	\$72,606,842
Vision Research	93.867	5R24EY028758-02			\$1,471,123	\$13,978,781
Medical Library Assistance	93.879	5T15LM007079-30			\$784,759	\$3,795,977
International Research and Research Training	93.989	5R01TW011228-04			\$327,007	\$643,254
<b>Total Direct Award Programs</b>					<b>\$88,109,157</b>	<b>\$550,455,583</b>
<b>Pass-through Awards</b>						
<b>National Institutes of Health/DHHS</b>						
Direct activators of protein phosphatase 2A (PP2A) as novel Alzheimer s Disease (AD) therapeutics	93.RD	ATUX CU20-1222	1R43AG071040-01	ATUX ISKAY LLC	\$0	\$77,256
Strong Heart Study Arizona Field Center	93.RD	MERI 5001681646	75N2019D00023/TO-75N2019 F0001	MEDSTAR RESEARCH INSTITUTE	\$0	\$29,604
Integrated imaging and molecular analysis of glioblastoma using SCOPE-Seq on the AIR FLOW System	93.RD	CMICRO 021820	75N91019C00029	CELL MICROSYSTEMS	\$0	\$45,604
COVID-19-Multiplexed in-solution serological test for SARS-COV-2, human coronaviruses and other respiratory pathogens	93.RD	ASU ASUB00000660	75N91019D00024	ARIZONA STATE UNIVERSITY	\$0	\$291,638
Intrnl Multicenter, Adaptive, Randomized Double-Blind, Placebo-Controlled Trial of the Safety, Tolerability & Efficacy of Anti-Coronavirus Hyperimmune Intravenous Immunoglobulin for the T	93.RD	LEIDOS 21CTA-DC0021	75N91020F00009	LEIDOS BIOMEDICAL RESEARCH INC	\$0	\$6,801
CNT-Vectored Delivery of mRNA for HIV-Vaccines	93.RD	LUNA 33483.02ADARC	75N93019C00034 3441-ARM-2S 3	LUNA INNOVATIONS	\$0	\$137,955

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Whole Genome Sequencing: The intergenerational Impact of Genetic and Psychological Factors on Body Mass Index Study on African Americans	93.RD	NYU F1309-01	75N98019P03309	NEW YORK UNIVERSITY	\$0	\$14,278	
Patient-Derived Models Tissue Procurement Protocol for the National Cancer Institute	93.RD	LEIDOS 17X152	HHSN261200800001E	LEIDOS BIOMEDICAL RESEARCH INC	\$0	\$35,859	
PumpKIN Trial	93.RD	NERI CU18-1664	HHSN2682012000001	NEW ENGLAND RESEARCH INSTITUTES	\$0	\$5,799	
COVID-19-Adaptive Platform Treatment Trial for Outpatients with COVID-19 (Adapt Out COVID)	93.RD	ACTIV-2/A5401	HHSN272201700078C	PPD DEVELOPMENT	\$0	\$23,833	
Pharmacokinetics and Safety Profile of Digoxin in Infants with Single Ventricle Congenital Heart Disease	93.RD	DUKEU 243797	HHSN-275201800003I	DUKE UNIVERSITY	\$0	\$3,420	
Increasing Provider Awareness and Prescription of Buprenorphine for Opioid Use Disorder in a New York City Emergency Department	93.RD	SAEM CU19-3837	NIDA	SOCIETY FOR ACADEMIC EMERGENCY MEDICINE	\$0	\$6,496	
					\$0	\$678,543	
<b>National Institute of Diabetes and Digestive and Kidney Diseases/NIH/DHHS</b>							
Identification of unique nitric oxide-expressing hematopoietic stem cells and their special vascular niche	93.RD	BIDMC 01063258	1R01DK121889-01A	BETH ISRAEL DEACONESS MEDICAL CENTER	\$0	\$264,730	
ACTG Protocol Funding - Core Funding	93.RD	UCLA CRS 30329 CU 30606 A5401	2UM1AI068636-15	UNIVERSITY OF CALIFORNIA, LOS ANGELES	\$0	\$25,137	
Pilot Study of Denosumab in BRCA1/2 Mutation Carriers Scheduled for Risk-Reducing Salpingo-Oophorectomy	93.RD	UTMDA 3001109242/3001109711	HHSN261201200034I	UNIVERSITY OF TEXAS M.D. ANDERSON CANCERCENTER	\$0	\$42,350	
					\$0	\$332,217	
<b>Family Smoking Prevention and Tobacco Control Act Regulatory Research</b>							
The Exposure to Metals from ECigarettes (EMIT) Study	93.077	JHU 2004225064	1R01ES030025-01	JOHNS HOPKINS UNIVERSITY	\$0	\$57,987	
Examining the Effects of Advertising, Packaging, and Labeling, and Perceptions, Use, and Exposure of Combustible Tobacco Products	93.077	RUTGER PO 1406813	1U54CA229973-01	RUTGERS, THE STATE UNIVERSITY OF NJ DEPT. OF RADIOLOGY	\$0	\$79,155	
					\$0	\$137,142	
<b>Environmental Health</b>							
Air Particulate, Metals, and Cognitive Performance in an Aging Cohort- Roles of Circulating Extracellular Vesicles and Non-coding RNAs	93.113	HARVARD 112557-5108340	1R01ES027747-01	HARVARD UNIVERSITY	\$0	\$81,752	
The Effects of Environmental Exposures on Semen Quality and the Sperm Epigenome.	93.113	BWH 118582	1R01ES028712-01	BRIGHAM AND WOMEN'S HOSPITAL	\$0	\$28,201	
Impact of preconception and onward exposure to air pollution on growth trajectories of infants and children	93.113	DUKEU A03-3136	1R01ES029945-01A1	DUKE UNIVERSITY	\$0	\$9,547	
A national birth cohort study of prenatal factors and neurodevelopmental psychiatric disorders	93.113	RFMH 147870	1R01ES030966-01A1	RESEARCH FOUNDATION FOR MENTAL HYGIENEINC	\$0	\$122,901	
Urban air pollution and neurobehavioral trajectories in the ABCD study	93.113	USC 139981076	1R01ES031074-01A1	UNIVERSITY OF SOUTHERN CALIFORNIA	\$0	\$31,154	
Air Particulate Pollution and Stress: Effects and Mechanisms for Long-term Maternal Obesity Risks	93.113	ISMMS 0255-E141-4609	1R01ES032242-01	ICAHN SCHOOL OF MEDICINE AT MOUNT SINAI	\$0	\$47,438	
The Role of Air Pollution in Emotional Neurodevelopment and Risk for Psychiatric Disorders	93.113	USC 138935395	1R01ES032295-01	UNIVERSITY OF SOUTHERN CALIFORNIA	\$0	\$30,237	
Xenobiotic Receptors in the Crossroad of Xenobiotic Metabolism and Endobiotic Metabolism	93.113	UPITT AWD00000936 (133648-2)	1R35ES030429-01	UNIVERSITY OF PITTSBURGH	\$0	\$32,680	
Human Health Exposure Analysis Resource (HHEAR) Data Center	93.113	0255-C751-4609	2U2CES026555-02	ICAHN SCHOOL OF MEDICINE AT MOUNT SINAI	\$0	\$90,628	

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Personal Environmental Exposure Assessment using Wristbands for Epidemiological Studies in Disadvantaged Communities	93.113	OSU P0421A-B	4R33ES024718-02	OREGON STATE UNIVERSITY	\$9,387	\$143,634	
Stress-Chemical Interactions and Neurobehavior in School Age Children	93.113	ISMMS 0255-5545-4609	5R01ES013744-13	ICAHN SCHOOL OF MEDICINE AT MOUNT SINAI	\$0	\$74,965	
Participatory Interventions to Reduce Arsenic Exposure in American Indian Communities	93.113	JHU 2003073212	5R01ES025135-02	JOHNS HOPKINS UNIVERSITY	\$0	\$22,621	
Prenatal endocrine-disrupting chemicals and social/cognitive risk in mothers and infants: Potential biologic pathways	93.113	RFMH 26840	5R01ES027424	RESEARCH FOUNDATION FOR MENTAL HYGIENE INC	\$0	\$259,140	
Prenatal metal mixtures and neurodevelopment: Role of placental extracellular microRNAs	93.113	ISMMS 0255-B981-4609	5R01ES030302-02	ICAHN SCHOOL OF MEDICINE AT MOUNT SINAI	\$0	\$114,866	
Environmental Chemical Exposures and Longitudinal Changes of Glucose Metabolism, Insulin Sensitivity and B Cell Function in Youth	93.113	USC 133612921	5R21ES029681-02	UNIVERSITY OF SOUTHERN CALIFORNIA	\$0	\$16,391	
The Programming Research in Obesity, Growth, Environmental and Social Stress (PROGRESS) Cohort	93.113	ISMMS 0255-4921-4609	5R24ES028622-02	ICAHN SCHOOL OF MEDICINE AT MOUNT SINAI	\$0	\$7,288	
Coordinating Center for the Breast Cancer and the Environment Research Program	93.113	UWM 855K610	5U01ES026127-04	UNIVERSITY OF WISCONSIN MADISON	\$0	\$71,325	
Manganese-related Neurotoxicity in Asymptomatic Welders	93.113	PSU COLES019672	R01ES019672	PENNSYLVANIA STATE UNIVERSITY	\$0	\$14,503	
Arsenic and Immune Response to Influenza Vaccination in Pregnant Women and Newborns	93.113	JHU 2003603451	R01ES026973	JOHNS HOPKINS UNIVERSITY	\$0	\$15,720	
					\$9,387	\$1,214,991	
<b>Oral Diseases and Disorders Research</b>							
Protease/PAR2/TRPV4 Axis and Oral Cancer Pain	93.121	NYU F8807-03 S	3R01DE026806-02S1	NEW YORK UNIVERSITY	\$0	\$89,010	
Development of Minimally Invasive Drug Delivery System for TMJ Regeneration	93.121	WNT CU19-2978	R24DE028215	WNT SCIENTIFIC LLC	\$0	\$137,768	
					\$0	\$226,778	
<b>Injury Prevention and Control Research and State and Community Based Programs</b>							
Association of maternal inflammation with preterm delivery and maternal disease progression	93.136	Westat 6579-S61	HHSN2752018000011	WESTAT	\$0	\$137,946	
					\$0	\$137,946	
<b>Human Genome Research</b>							
Health Care Provider responses to receiving unsolicited genomic results	93.172	GENFD0001649725	1R01HG010004-01	CHILDREN'S HOSPITAL BOSTON	\$0	\$9,985	
Leveraging consanguinity and homozygosity to identify novel recessive variants	93.172	UCSF 11959sc	1R01HG010689-01	UNIVERSITY OF CALIFORNIA SAN FRANCISCO	\$0	\$356,825	
Developing Clinical Translational Tools to Communicate Genetic Risk to Individuals who are at Clinical High Risk for Psychosis	93.172	NYU F1228-01	1R21HG010420-01A1	NEW YORK UNIVERSITY	\$0	\$15,257	
LC/MS-Based Direct RNA Sequencing with Concomitant Capability to Sequence Multiple Base Modifications at Single-base Resolution	93.172	NYIT 1R56HG011099-01C1	1R56HG011099-01	NEW YORK INSTITUTE OF TECHNOLOGY	\$0	\$61,448	
Center for Integrated Cellular Analysis	93.172	NYGC 2019-0014-CU-01	1RM1HG011014-01	NEW YORK GENOME CENTER	\$0	\$96,089	
The Duke FUNCTION Center: Pioneering the comprehensive identification of combinatorial noncoding causes of disease	93.172	DU A034194	1RM1-HG011123-01A1	DUKE UNIVERSITY MEDICAL CENTER	\$0	\$72,828	
ELSI.hub: National Center for ELSI Resources and Analysis	93.172	SU 62196601-139696	1U24HG010733-01	STANFORD UNIVERSITY	\$8,746	\$645,269	

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New York Center for Collaborative Research in Genomics	93.172	NYGC UM1-CU-TLapp-04	1UM1HG008901-01	NEW YORK GENOME CENTER	\$0	\$64,422	
Exome sequencing in Diverse Populations in Colorado & Oregon	93.172	KAISER OOS030229-Columbia	2U01HG007292-06	KAISER FOUNDATION RESEARCH INSTITUTE--DIVISION OF RESEARCH	\$0	\$30,559	
New Methods for Constructing and Evaluating Polygenic Scores	93.172	SU 62472179-159655	5R01HG011432-02	STANFORD UNIVERSITY	\$0	\$39,025	
Tensor Array Methods for RNA-Seq Analysis	93.172	UMICHG SUBK00014336	7R01HG010731-03	UNIVERSITY OF MICHIGAN	\$0	\$25,599	
Fully Integrated Single Cell Imaging and RNA-Seq Library Preparation	93.172	CMICRO CU17-1067	9R44HG010003-02A1	CELL MICROSYSTEMS	\$0	\$66,141	
UW Center for Mendelian Genomics	93.172	UWSC11201	UM1HG006493	UNIVERSITY OF WASHINGTONSEATTLE WASHINGTON	\$0	\$16,569	
					\$8,746	\$1,500,016	
<b>Research Related to Deafness and Communication Disorders</b>							
Randomized Controlled Trial of Valganciclovir for Asymptomatic Cytomegalovirus Infected Hearing Impaired Infants (ValEAR Trial)	93.173	UUMC 10041913-010	1U01DC014706-01A1	UNIVERSITY OF UTAH MEDICAL CENTER	\$0	\$-347	
Implantable Microphones for Fully Implantable Hearing Prosthetics	93.173	MEA 530673	5R01DC016874-02	MASSACHUSETTS EYE AND EAR	\$0	\$30,986	
					\$0	\$30,639	
<b>Research and Training in Complementary and Integrative Health</b>							
Metals in the Trial to Assess Chelation Therapy 2 (TACT2)	93.213	MSMCM R01 AT009273	1R01AT009273-01	MOUNT SINAI MEDICAL CENTER-MIAMI	\$0	\$263,795	
Defining disease mechanisms in SLC35A2 epilepsy	93.213	UNCCH 5118022	1R01NS11507-01A1	UNIVERSITY OF NORTH CAROLINA AT CHAPEL HILL	\$0	\$97,138	
Comprehensive CBT via reSET for a Hub and Spoke MAT System of Care	93.213	PSU COLAT010118	1R21AT010118-01	PENNSYLVANIA STATE UNIVERSITY	\$0	\$67,361	
					\$0	\$428,294	
<b>Research on Healthcare Costs, Quality and Outcomes</b>							
COVID-19-Evaluating and Enhancing Health Information Technology for COVID-19 Emergency Response Workflow in a Specialized COVID-19 Hospital in a Medically Underserved Community	93.226	SUNYRF 100-1165500-90112	1R01HS028220-01	RESEARCH FOUNDATION OF THE STATE UNIVERSITY OF NEW YORK	\$0	\$7,022	
					\$0	\$7,022	
<b>Mental Health Research Grants</b>							
Neural dynamics underlying rule based decision-making	93.242	SRFMH 145453	1K08MH120434-01	RESEARCH FOUNDATION FOR MENTAL HYGIENEINC	\$0	\$62,355	
Hospital Discharge Planning and Transition to Outpatient Psychiatric Care	93.242	RFMH 26439	1R01MH106558-01A1	RESEARCH FOUNDATION FOR MENTAL HYGIENEINC	\$0	\$78,405	
2/2 Familial Early-Onset Suicide Attempt Biomarkers	93.242	RFMH 26230	1R01MH108032-01	RESEARCH FOUNDATION FOR MENTAL HYGIENEINC	\$0	\$86,416	
Biomarkers of Conversion Risk and Treatment Response in Early-Stage Schizophrenia	93.242	CUMC 213052-1	1R01MH110270-01A1	WEILL (JOAN AND SANFORD I.) MED. COLLEGE OF CORNELL UNIV.	\$0	\$65,084	
Improving Cognition via Exercise in Schizophrenia	93.242	MSSM 0255-3351-4609	1R01MH110623-01A1	ICAHN SCHOOL OF MEDICINE AT MOUNT SINAI	\$0	\$120,492	
Identifying Reproducible Brain Signatures of Obsessive Compulsive Profiles	93.242	RFMH 26719	1R01MH113250-01	RESEARCH FOUNDATION FOR MENTAL HYGIENEINC	\$0	\$64,579	
Addressing Psychiatrist Workforce Shortages in the U.S. with Psychiatric Advanced Practice Registered Nurses	93.242	UMARY 1802161	1R01MH113650-01	UNIVERSITY OF MARYLAND	\$0	\$3,545	

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An Adaptive Algorithm-Based Approach to Treatment for Adolescent Depression	93.242	UMINN N006073701	1R01MH113748-01	UNIVERSITY OF MINNESOTA	\$0	\$6,873	
The Neurobiology of Violence in a Psychosis-Risk Cohort	93.242	RFMH 26737	1R01MH113861-01	RESEARCH FOUNDATION FOR MENTAL HYGIENEINC	\$0	\$235,852	
2/5 Neurocognitive and neuroimaging biomarkers: predicting progression towards dementia in patients with treatment resistant late-life depression.	93.242	RFMH 26754	1R01MH114980-01	RESEARCH FOUNDATION FOR MENTAL HYGIENEINC	\$0	\$18,249	
Deconstructing the cellular control of hippocampal functions related to mental health: a role for birth order.	93.242	RFMH 27114	1R01MH115215-01	RESEARCH FOUNDATION FOR MENTAL HYGIENEINC	\$0	\$161,750	
Targeting cotransmission for circuit-specific pharmacotherapy	93.242	RFMH 27032	1R01MH117128-01	RESEARCH FOUNDATION FOR MENTAL HYGIENEINC	\$0	\$89,962	
Individualized Risk Prediction in Persons at Clinical High Risk for Psychosis Using Neuromelanin-Sensitive MRI	93.242	RFMH 27054	1R01MH117323-01	RESEARCH FOUNDATION FOR MENTAL HYGIENEINC	\$0	\$75,326	
Uncovering the Risk Architecture of Suicidal Behaviors: a Representative Sample at High Risk	93.242	RFMH 27322	1R01MH117360-01	RESEARCH FOUNDATION FOR MENTAL HYGIENEINC	\$0	\$75,389	
Inflammatory Biomarkers and Kynurenine Metabolites Tracking Suicidal Ideation and Behavior	93.242	VAI V3362-R1-2	1R01MH118211-01A1	VAN ANDEL INSTITUTE	\$0	\$128,154	
Maternal exposure to antidepressants and psychiatric outcomes among offspring in a national birth cohort	93.242	RFMH 141316	1R01MH118247-01	RESEARCH FOUNDATION FOR MENTAL HYGIENEINC	\$0	\$57,039	
Minor Consent Laws and HIV Prevention Among Adolescents in the United States	93.242	BU 4500003429	1R01MH119892-01A1	BOSTON UNIVERSITY SCHOOL OF MEDICINE	\$0	\$59,904	
OnTrackNY s Learning Healthcare System	93.242	RFMH 27327	1R01MH120597-01	RESEARCH FOUNDATION FOR MENTAL HYGIENEINC	\$0	\$119,871	
Maternal adversity, inflammation, and neurodevelopment: How intergenerational processes perpetuate disadvantage in a low-resource setting	93.242	RFMH 27494	1R01MH121070-01	RESEARCH FOUNDATION FOR MENTAL HYGIENEINC	\$0	\$125,959	
Origins and developmental sequelae of neurophysiological variability in infants at high risk for autism	93.242	TC 512160-01	1R01MH121605-01	TEACHERS COLLEGE COLUMBIA UNIVERSITY	\$0	\$19,692	
Behavioral and Neural Correlates of Deficits in Naturalistic Visual and Auditory Social Cognition in Individuals at Clinical High-Risk for Schizophrenia	93.242	RFMH 27622	1R01MH121790-01	RESEARCH FOUNDATION FOR MENTAL HYGIENEINC	\$0	\$4,817	
1/4 Leveraging EHR-linked biobanks for deep phenotyping, polygenic risk score modeling, and outcomes analysis in psychiatric disorders	93.242	RFMH 27354	1R01MH121921-01	RESEARCH FOUNDATION FOR MENTAL HYGIENEINC	\$0	\$86,620	
Testing the effectiveness: evidence-based transdiagnostic cognitive behavioral therapy approach for improving HIV treatment outcomes among violence-affected & virally unsuppressed women	93.242	BU 4500003536	1R01MH121998-01	BOSTON UNIVERSITY	\$0	\$7,960	
Validation of Pragmatic Implementation Measure for Task Sharing in Mental Health Services	93.242	NYUMC F1415-01	1R01MH122851-01	NEW YORK UNIVERSITY MEDICAL CENTER	\$0	\$19,970	
Glutamatergic Mechanisms of Psychosis and Target Engagement	93.242	RFMH 27637	1R01MH123142-01	RESEARCH FOUNDATION FOR MENTAL HYGIENEINC	\$0	\$54,474	
Adolescence, Motivation and the Maturation of the Prefrontal Cortex	93.242	RFMH 27501	1R01MH123153-01	RESEARCH FOUNDATION FOR MENTAL HYGIENEINC	\$0	\$128,589	
Synthesizing Best Practice to Accelerate Access to Emerging HIV Prevention Modalities	93.242	RFCUNY CM00004822-00	1R01MH123262-01	RESEARCH FOUNDATION OF CITY UNIVERSITY OF NEW YORK	\$0	\$136,852	
Neural substrates of deficits in naturalistic social cognition in schizophrenia	93.242	RFMH 27570	1R01MH123639-01	RESEARCH FOUNDATION FOR MENTAL HYGIENEINC	\$0	\$6,377	
1/2-Dopaminergic Dysfunction in Late-Life Depression (The D3 Study)	93.242	RFMH 27618	1R01MH123660-01	RESEARCH FOUNDATION FOR MENTAL HYGIENEINC	\$0	\$81,081	
A Data Science Framework for Empirically Evaluating and Deriving Reproducible and Transferrable RDoC Constructs in Youth	93.242	RFMH 27617	1R01MH124106-01	RESEARCH FOUNDATION FOR MENTAL HYGIENEINC	\$0	\$59,230	
Application of Advanced Quantitative Methods to Schizophrenia Research	93.242	RFMH 27727	1R01MH125030-01	RESEARCH FOUNDATION FOR MENTAL HYGIENEINC	\$0	\$35,666	

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**The Trustees of Columbia University in the City of New York**  
**Schedule of Expenditures of Federal Awards**  
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<u>Federal Grantor / Pass-through Grantor</u>	<u>Assistance Listing No.</u>	<u>Award Identification No</u>	<u>Pass-through Contract Number</u>	<u>Passthrough Name</u>	<u>Subrecipients</u>	<u>Total Expenditures (Includes Subrecipients)</u>	<u>R&amp;D Cluster</u>
IM ketamine for rapid reduction of suicidal thoughts in high-risk ED patients: a midazolam-controlled trial	93.242	RFMH 27640	1R01MH125155-01	RESEARCH FOUNDATION FOR MENTAL HYGIENEINC	\$0	\$13,250	
Nonparametric depth-based methods for analyzing high dimensional data. Applications to biomedical r	93.242	500667-78050	1R21MH120534-01	NORTHEASTERN UNIVERSITY	\$0	\$45,421	
Prenatal and Neonatal Risk Factors for Adverse Neurodevelopmental Outcomes in Childhood and Early Adulthood	93.242	SUBK00009692	1R21MH120824-01A1	UNIVERSITY OF MICHIGAN	\$0	\$10,048	
An adolescent sensitive period for thalamo-prefrontal circuit maturation	93.242	RFMH 27400	1R21MH121334-01	RESEARCH FOUNDATION FOR MENTAL HYGIENEINC	\$0	\$38,597	
Development of dopamine D2 receptor-targeted DARTs	93.242	RFMH 27807	1R21MH126499-01	RESEARCH FOUNDATION FOR MENTAL HYGIENEINC	\$0	\$25,033	
Does the Addition of Cognitive Remediation to Coordinated Specialty Care Services Improve Functional Outcome?	93.242	RFMH 27104	1R34MH118318-01	RESEARCH FOUNDATION FOR MENTAL HYGIENEINC	\$0	\$127,633	
Engaging Black Youth in Depression and Suicide Prevention Treatment with Urban Schools: A Preliminary Study	93.242	NYU F1106-01	1R34MH119290-01	NEW YORK UNIVERSITY	\$0	\$79,167	
Optimizing Study Design to Test a Community-level Intervention to Reduce Intersectional Stigma and Increase HIV Testing and Prevention among African-American/Black MSM	93.242	CCNY 00003796-00	1R34MH121295-01	CITY COLLEGE OF NEW YORK	\$0	\$29,454	
Web-Based Therapist Training on Complicated Grief Therapy	93.242	CFT C001	1R41MH118126-01A1	CENTER FOR TELEPSYCHOLOGY	\$10,204	\$50,577	
NNCI Synapse: Development of a mobile application to disseminate neuroscience training to medical professionals	93.242	CFSI CU17-1085	1R44MH11546-01	THE CENTER FOR SOCIAL INNOVATION	\$0	\$38,257	
Application of Advanced Quantitative Methods to Schizophrenia Research in Macedonia	93.242	RFMH 27303	1R56MH117769-01A1	RESEARCH FOUNDATION FOR MENTAL HYGIENEINC	\$0	\$16,698	
Imaging the Neurodevelopmental Trajectory of Depression and Anxiety with HCP Protocols	93.242	MGH 235921	1R56MH121426-01	MASSACHUSETTS GENERAL HOSPITAL	\$0	\$47,590	
D-serine augmentation of neuroplasticity-based auditory learning in schizophrenia	93.242	RFMH 27132	1R60MH116093	RESEARCH FOUNDATION FOR MENTAL HYGIENEINC	\$0	\$64,792	
Gaze-contingent music reward therapy for social anxiety	93.242	RFMH 26951	1R61MH116089-01	RESEARCH FOUNDATION FOR MENTAL HYGIENEINC	\$0	\$6,604	
A Translational and Neurocomputational Evaluation of a D1R Partial Agonist for Schizophrenia	93.242	YU GR110672(CON 80002564)	1U01MH121766-01	YALE UNIVERSITY	\$0	\$106,510	
HIV Center for Clinical and Behavioral Studies	93.242	SRFMH 151533	2P30MH043520-30	RESEARCH FOUNDATION FOR MENTAL HYGIENEINC	\$0	\$265,374	
Antecedents of Suicidal Behavior Related Neurobiology	93.242	RFMH 27823	2P50MH090964-05	RESEARCH FOUNDATION FOR MENTAL HYGIENEINC	\$0	\$468,951	
Early Cortical Processing in Schizophrenia	93.242	RFMH 27066	2R01MH049334-27A1	RESEARCH FOUNDATION FOR MENTAL HYGIENEINC	\$0	\$165,778	
Pathways to successful aging among perinatally HIV-infected and exposed young adults: Risk, resilience, and the role of perinatal HIV infection	93.242	RFMH 143069	2R01MH069133-16	RESEARCH FOUNDATION FOR MENTAL HYGIENEINC	\$0	\$71,599	
Decisions Processes in Late-life Suicide	93.242	UPITT AWD00001169 (133478-1)	2R01MH085651-10	UNIVERSITY OF PITTSBURGH	\$0	\$20,745	
Biotyping Placebo and Treatment-Specific Responses for Precision Medicine	93.242	17-A0-00-007642-01	2R01MH099003-06	NEW YORK UNIVERSITY MEDICAL CENTER	\$0	\$135,710	
Three Generations at High and Low Risk for Depression Followed Longitudinally	93.242	RFMH 26658	2R1MH036197-29A1	RESEARCH FOUNDATION FOR MENTAL HYGIENEINC	\$0	\$37,564	
HIV Center for Clinical & Behavioral Studies-Administrative Supplement	93.242	SRFMH 145452	3P30MH043520-31S3	RESEARCH FOUNDATION FOR MENTAL HYGIENEINC	\$0	\$26,959	
Optimizing and Personalizing Interventions for Schizophrenia Across the Lifespan (OPAL)	93.242	RFMH 27097	3P50MH115843-02S2	RESEARCH FOUNDATION FOR MENTAL HYGIENEINC	\$0	\$1,853	

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<u>Federal Grantor / Pass-through Grantor</u>	<u>Assistance Listing No.</u>	<u>Award Identification No</u>	<u>Pass-through Contract Number</u>	<u>Passthrough Name</u>	<u>Subrecipients</u>	<u>Total Expenditures (Includes Subrecipients)</u>	<u>R&amp;D Cluster</u>
The Neurobiology of Violence in a Psychosis Risk Cohort	93.242	RFMH 26737	3R01MH113861-03S1	RESEARCH FOUNDATION FOR MENTAL HYGIENEINC	\$0	\$18,192	
Variational Inference to Reveal Genetic Heterogeneity Across Neuropsychiatric Traits	93.242	FIMR 504786CU	3R01MH117646-02S1	FEINSTEIN INSTITUTE FOR MEDICAL RESEARCH	\$0	\$24,222	
COVID-19-Adapting Coordinated Specialty Care in the Post COVID-19 Era	93.242	RFMH 27327	3R01MH120597-02S1	RESEARCH FOUNDATION FOR MENTAL HYGIENEINC	\$0	\$9,996	
COVID-19-StepWell: Stepped Care Mental Health and Substance Use Telehealth Services for COVID-19 Affected Patients	93.242	SRFMH 149806	3U19MH113203-04S3	RESEARCH FOUNDATION FOR MENTAL HYGIENEINC	\$0	\$71,724	
EEG/MRI Controlled TMS Real-Time Neural Feedback in Anti-Depressive Treatment	93.242	MUSC A00-1979-S001	4R33MH106775-04	MEDICAL UNIVERSITY OF SOUTH CAROLINA	\$0	\$103,497	
Targeting Dopaminergic Mechanisms of Slowing to Improve Late Life Depression (R33 Phase)	93.242	SRFMH 27103	4R33MH110029-03	RESEARCH FOUNDATION FOR MENTAL HYGIENEINC	\$0	\$140,530	
Integrating evidence-based MDD treatment in primary care: TB in Brazil as a model and point of-of-entry	93.242	SRFMH 26431	5K01MH104514-04	RESEARCH FOUNDATION FOR MENTAL HYGIENEINC	\$0	\$368	
Neural mechanisms for the genesis of conceptual information	93.242	SRFMH 144711	5K08MH115365-02	RESEARCH FOUNDATION FOR MENTAL HYGIENEINC	\$0	\$73,382	
Neural and Behavioral Mechanisms of Abstraction in Humans	93.242	SRFMH 146785	5K08MH121775-02	RESEARCH FOUNDATION FOR MENTAL HYGIENEINC	\$0	\$48,841	
HIV Center for Clinical and Behavioral Studies	93.242	RFMH 27385	5P30MH043520-31	RESEARCH FOUNDATION FOR MENTAL HYGIENEINC	\$0	\$64,047	
Antecedents of Suicidal Behavior Related Neurobiology	93.242	RFMH 153426	5P50MH090964-09	RESEARCH FOUNDATION FOR MENTAL HYGIENEINC	\$0	\$127,028	
Optimizing and Personalizing Interventions for Schizophrenia Across the Lifespan (OPAL)	93.242	RFMH 27699	5P50MH115843-03	RESEARCH FOUNDATION FOR MENTAL HYGIENEINC	\$0	\$320,718	
Intervening Early with Neglected Children: Key Behavioral and Neurobiological Outcomes in Adolescence	93.242	UDELAWARE 55078	5R01MH074374-12	UNIVERSITY OF DELAWARE	\$0	\$61,477	
Functionally selective D2R s, striatal circuit function and motivation	93.242	RFMH 26444	5R01MH093672-08	RESEARCH FOUNDATION FOR MENTAL HYGIENEINC	\$0	\$230,169	
Determinants for Resilience in Youth with HIV infection and Youth affected by HIV	93.242	HJFAMM 832613	5R01MH102151-03	JACKSON (HENRY M.) FOUNDTN. FOR ADVANCEMENT OF MILITARY MED.	\$0	\$5,885	
Improving the Emergency Department Management of Deliberate Self-Harm	93.242	UPENN 568947/10052478/19439	5R01MH107452-05	UNIVERSITY OF PENNSYLVANIA	\$0	\$42,807	
A unified intervention for young gay and bisexual men s minority stress, mental health, and HIV risk	93.242	YU GR105649 (CON-80001695)	5R01MH109413-04	YALE UNIVERSITY	\$0	\$-1	
Longitudinal Assessment of Neural Circuits in Adolescents with Anorexia Nervosa	93.242	RFMH 26643	5R01MH110445-04	RESEARCH FOUNDATION FOR MENTAL HYGIENEINC	\$0	\$48,228	
Cognitive ans Neural Mechanisms of the Accelerated Aging Phenotype in PTSD	93.242	RFMH 26738	5R01MH111596-03	RESEARCH FOUNDATION FOR MENTAL HYGIENEINC	\$0	\$449,389	
Hippocampal memory circuits in delusions	93.242	NYU 17-A1-00-006880-01	5R01MH112733-03	NEW YORK UNIVERSITY	\$0	\$159,087	
Deficient Belief Updating as a Convergent Computational Mechanism of Psychosis	93.242	RFMH 27033	5R01MH114965-02	RESEARCH FOUNDATION FOR MENTAL HYGIENEINC	\$0	\$95,548	
Evaluating Implementation Strategies to Scale-up Transdiagnostic Evidence-based Mental Health Care in Zambia (Mental Health- CBT)	93.242	CIDRZ M101S14F04	5R01MH115495-03	CENTRE FOR INFECTIOUS DISEASES RESEARCHIN ZAMBIA	\$0	\$50,896	
Effect of GABAergic Inhibition of Dendritic Spines on Synaptic Pruning in mPFC During Adolescence	93.242	SUNYRF 100-1151016-83329	5R01MH115900-03	RESEARCH FOUNDATION OF THE STATE UNIVERSITY OF NEW YORK	\$0	\$280,446	
Social Processing Deficits in Remitted Adolescent Depression	93.242	RFMH 27394	5R01MH119771-02	RESEARCH FOUNDATION FOR MENTAL HYGIENEINC	\$0	\$36,152	

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OnTrackChile for First Episode Psychosis	93.242	UOH CU17-1224	5R01MH15502-02	UNIVERSIDAD DE O'HIGGINS	\$0	\$275,715	
Ultra-high channel count electrophysiology and data processing for freely-moving animals	93.242	LEAF CU19-3964	5R44MH114783-03	LEAFLABS	\$0	\$228,740	
Clearscope	93.242	MBF SUBR44MH116827-03	5R44MH116827-03	MBF BIOSCIENCE	\$0	\$109,982	
High-throughput Physiological Micro-connectivity Mapping in Vivo	93.242	UCB 00010181	5RF1MH120680-02	UNIVERSITY OF CALIFORNIA, BERKELEY	\$0	\$52,014	
Genetic neuroscience: How human genes and alleles shape neuronal phenotypes	93.242	BRINST 5100482-5500001084	5U01MH115727-04	BROAD INSTITUTE	\$0	\$93,886	
Mobile Assessment for the Prediction of Suicide (MAPS)	93.242	OREGON 281450B	5U01MH1163923-02	UNIVERSITY OF OREGON	\$0	\$54,255	
PRIDE SSA - Partnerships in Research to Implement and Disseminate Sustainable and Scalable Evidence Based Practices in sub-Saharan Africa	93.242	RFMH 27470	5U19MH113203-02	RESEARCH FOUNDATION FOR MENTAL HYGIENEINC	\$0	\$54,196	
Peer-Led Healthy Lifestyle Program in Supportive Housing	93.242	WASHU WU-17-430	7R01MH10457-04	WASHINGTON UNIVERSITY	\$0	\$37,300	
Characterizing Cognition Across the Lifespan in Untreated Psychosis in China	93.242	NYU F8752-04	7R01MH108385-03	NEW YORK UNIVERSITY	\$0	\$17,794	
Temporal Dynamics of Neurophysiological Patterns as Treatment Targets in SZ	93.242	RFMH 26985	7R01MH109289-04	RESEARCH FOUNDATION FOR MENTAL HYGIENEINC	\$0	\$49,769	
Impact of Trauma Exposure on Critical Periods in Brain Development and Fear Processing in Children	93.242	WAYNE WSU20005-A4	7R01MH111682-04	WAYNE STATE UNIVERSITY	\$0	\$100,329	
Structural Stigma and HIV Prevention Outcomes	93.242	HARVARD 136051-5117272	7R01MH112384-05	HARVARD UNIVERSITY	\$0	\$119,056	
Generating a formal set of collaborative standards for sharing behavioral data and task designs to enable reproducibility in neuroscience	93.242	WAHU WU-21-182	7RF1MH120034-02	WASHINGTON UNIVERSITY	\$0	\$9,723	
Building a Coalition to Overcome Intersecting Stigmas and Improve HIV Prevention, Care Access, and Health Outcomes in New York City	93.242	SRFMH 147645	P30MH043520-31S1	RESEARCH FOUNDATION FOR MENTAL HYGIENEINC	\$0	\$6,919	
1/2 Task control circuit targets for obsessive compulsive behaviors in children	93.242	RFMH 27047	R01MH115024	RESEARCH FOUNDATION FOR MENTAL HYGIENEINC	\$0	\$58,823	
Thalamo-Prefrontal interactions in cognition: which cortical layers are involved?	93.242	RFMH 138638	R21MH117454-01	RESEARCH FOUNDATION FOR MENTAL HYGIENEINC	\$0	\$32,208	
					<b>\$10,204</b>	<b>\$7,934,033</b>	
<b>Alcohol Research Programs</b>							
A Randomized Trial of Abandoned Housing Remediation, Substance Abuse and Violence	93.273	UPENN 569453	1R01AA024941-01	UNIVERSITY OF PENNSYLVANIA	\$0	\$172,969	
Sexual Orientation, Discrimination, and Health Disparities in DSM-5 Alcohol Use Disorder	93.273	UMICHG 300914461	1R01AA0256841-01	UNIVERSITY OF MICHIGAN	\$0	\$12,337	
Dose and Pattern of Adverse Effects in the Diagnosis of Fetal Alcohol Spectrum Disorders: A Secondary Analysis of Data from Five Cohorts	93.273	WSU18044	1R01AA025905-01	WAYNE STATE UNIVERSITY	\$0	\$34,945	
Community I-STAR Mozambique : Community Implementation of SBIRT using Technology for Alcohol use Reduction in Mozambique	93.273	RFMH 27048	1R01AA025947-01	RESEARCH FOUNDATION FOR MENTAL HYGIENEINC	\$0	\$27,474	
Could long-acting medications facilitate ending AIDS by 2030 in southern Africa? An allocative efficiency analysis	93.273	NYUMC 19-A1-00-1001516	1R01AA027481-01A1	NEW YORK UNIVERSITY MEDICAL CENTER	\$0	\$80,046	
Impact of supportive policies on minority stress, drinking and health among women	93.273	UIL 16343	2R01AA013328-10A1	UNIVERSITY OF ILLINOIS, BOARD OF TRUSTEES	\$0	\$248,014	
Structural Analysis of Alcohol-Dependent Activation of GIRKs	93.273	ISMMS 0255-5042-4609	2R01AA018734-06A1	ICAHN SCHOOL OF MEDICINE AT MOUNT SINAI	\$0	\$15,388	

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Role of Alcohol Disparities in HIV Risk among Sexual Minority Youth	93.273	NWU 60057464 CU	3R01AA024409-05S1	NORTHWESTERN UNIVERSITY	\$0	\$26,481	
HealthCall: Enhancing brief intervention for HIV primary care alcohol dependence	93.273	RFMH 25998	5R01AA023163-05	RESEARCH FOUNDATION FOR MENTAL HYGIENEINC	\$0	\$13,972	
Alcohol Actions-Molecular Targets on Brain Proteins	93.273	UTEXAUS UTA16-000568	R01AA06399	UNIVERSITY OF TEXAS AT AUSTIN	\$0	\$3,415	
					\$0	\$635,041	
<b>Drug Abuse and Addiction Research Programs</b>							
Health and justice: a continuum of care for HIV and SU for justice involved youth	93.279	RFMH 130318	1 R01 DA043122-01	RESEARCH FOUNDATION FOR MENTAL HYGIENEINC	\$0	\$182,561	
COVID-19-COVID-19 Higher Ed Student Impact Study	93.279	RFMH 26191	1R01ADA038154-01	RESEARCH FOUNDATION FOR MENTAL HYGIENEINC	\$0	\$25,880	
Antecedents and Consequences of Cocaine Taking: Impact of Oxytocin	93.279	RFMH 26741	1R01DA041543-01	RESEARCH FOUNDATION FOR MENTAL HYGIENEINC	\$0	\$65,026	
Systems Biology of HIV, methamphetamine and antiretrovirals interactions	93.279	SCRIPPS 5-53656	1R01DA041750-01	SCRIPPS RESEARCH INSTITUTE	\$0	\$77,625	
Acute Pain Management and Longterm Opioid Use after Surgery	93.279	SBRI 2017-1217	1R01DA042299-01A1	SUNNYBROOK RESEARCH INSTITUTE	\$0	\$6,940	
Does medical cannabis reduce opioid analgesics in HIV+ and HIV adults with pain?	93.279	AECM 311147	1R01DA044171-01A1	ALBERT EINSTEIN COLLEGE OF MEDICINEESHIVA UNIVERSITY	\$0	\$15,325	
Drug Use Among Nightclub and Dance Festival Attendees in New York City	93.279	NYUSM 18-A1-00-007403-01	1R01DA044207-01A1	NEW YORK UNIVERSITY MEDICAL CENTER	\$0	\$58,365	
Social Networks, Physician Characteristics, and Inappropriate Prescribing of Commonly Misused Prescription Drugs	93.279	YU GR102657(CON-80001241)	1R01DA044981-01A1	YALE UNIVERSITY	\$0	\$35,871	
Micro- to Nanoscale Neurotransmitter Sensors	93.279	UCLA 2000GVG295	1R01DA045550-01	UNIVERSITY OF CALIFORNIA, LOS ANGELES	\$0	\$256,422	
Examining the synergistic effects of cannabis and prescription opioid policies on chronic pain, opioid prescribing, and opioid poisoning	93.279	19-A0-00-1002539	1R01DA045872-01A1	NEW YORK UNIVERSITY	\$0	\$285,683	
Missing Data Matters: Substance Use Disorder Clinical Trials	93.279	JHU 2004036781	1R01DA046534-01	JOHNS HOPKINS UNIVERSITY	\$0	\$1,089	
Sex-dependent effects of cannabis: Assessing abuse-related and pharmacokinetic differences between men and women	93.279	UCLA 2000 G XK823	1R01DA047296-01A1	UNIVERSITY OF CALIFORNIA, LOS ANGELES	\$0	\$28,869	
Opioid Overdoses Among Medicaid Beneficiaries: Predictors, Outcomes and State Policy Effect	93.279	RUTGER 1284	1R01DA047347-01	RUTGERS, THE STATE UNIVERSITY OF NJ DEPT. OF RADIOLOGY	\$0	\$9,672	
Impact of Medical and Recreational Marijuana Laws On Cannabis, Opioids And Psychiatric Medications: National Study of VA Patients, 2000 - 2024	93.279	1015580/3/27298	1R01DA048860-01	RESEARCH FOUNDATION FOR MENTAL HYGIENEINC	\$0	\$140,416	
Leveraging Social Media to Develop The Cannabis Exposure Index (CEI), A standardized Measure of Cannabis Use	93.279	DARTC R1483	1R01DA050032-01A1	DARTMOUTH COLLEGE	\$0	\$51,978	
The role of thalamic dopamine D2 receptors in cocaine intake	93.279	RFMH 26705	1R21DA044329-01	RESEARCH FOUNDATION FOR MENTAL HYGIENEINC	\$0	\$-361	
Pharmacological Probes Based on Mitragynine Pseudoindoxyl	93.279	SLCP 807-1-01	1R21DA045884-01	ST. LOUIS COLLEGE OF PHARMACY	\$0	\$11,234	
Web-based Addiction Treatment Cultural Adaptation with American Indians	93.279	RFMH 26748	1R34DA040831-01A1	RESEARCH FOUNDATION FOR MENTAL HYGIENEINC	\$0	\$985	
Peer-based HIV Self-testing among High Risk Women Who Inject or Use Drugs in Kazakhstan, Central Asia	93.279	RFCUNY CM00005426-00	1R34DA049664-01A1	RESEARCH FOUNDATION OF CITY UNIVERSITY OF NEW YORK	\$0	\$26,508	
Development of Opioid Use Disorder Severity Scale	93.279	YU CON-80002907 (GR112223)	1U01DA051639-01	YALE UNIVERSITY	\$0	\$8,111	

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METHODOLOGY AND ADVANCED ANALYTICS RESOURCE CENTER (MAARC)	93.279	UofC AWD100228	1U2CDA050098-01	UNIVERSITY OF CHICAGO	\$0	\$27,198
Facilitating Opioid Care Connections: System level strategies to improve use of MAT and movement through the opioid care cascade for defendants in a new Opioid Court system	93.279	RFMH 27305	1UG1DA050071-01	RESEARCH FOUNDATION FOR MENTAL HYGIENEINC	\$0	\$249,615
An ultra-long-acting oral treatment for opioid use disorder	93.279	RFMH 27347	1UG3DA047709-01	RESEARCH FOUNDATION FOR MENTAL HYGIENEINC	\$0	\$97,273
Evaluation of Safety and Pharmacokinetics of Naltrexone Implant	93.279	RFMH 27041	1UG3DA047720-01	RESEARCH FOUNDATION FOR MENTAL HYGIENEINC	\$0	\$53,888
Vaccines for Fentanyl and Its Derivatives: A Strategy to Reduce Illicit Use and Overdose	93.279	UMINN N007622802	1UG3DA048386-01	UNIVERSITY OF MINNESOTA	\$0	\$19,005
Combining Pregabalin with Lofexidine: Can it Increase the Success of Transition to Naltrexone?	93.279	UPENN 578203	1UG3DA049694-01	UNIVERSITY OF PENNSYLVANIA	\$0	\$4,131
Monitoring the Future: Drug Use and Lifestyles of American Youth	93.279	UMICHG 3004489406	2R01DA001411-43	UNIVERSITY OF MICHIGAN	\$0	\$45,765
NIDA Clinical Trials Network: Greater New York Node	93.279	NYU 20-00-00-003671	2UG1DA013035-19	NEW YORK UNIVERSITY	\$0	\$80,270
The Florida Node Alliance of the National Drug Abuse Treatment Clinical Trials Network (CTN 104)	93.279	UMIAMI OS00000272	2UG1DA013720-21	UNIVERSITY OF MIAMI	\$0	\$475,135
The Cumulative Risk of Substance Exposure and Early Life Adversity on Child Health Development and Outcomes	93.279	AMH R34DA050288-A	3R34DA050288-01S1	AVERA MCKENNAN HOSP & UNIV HEALTH CTR	\$0	\$54,863
NIDA Clinical Trials Network: New York Node (CTN-0097)	93.279	NYU 20-A0-S3-003671	3UG1DA013035-17SB	NEW YORK UNIVERSITY MEDICAL CENTER	\$0	\$60,681
COVID-19-Methadone in the Time of COVID: A natural experiment on the impact of relaxed methadone regulations on treatment outcome	93.279	21-A0-R2-003671	3UG1DA013035-19S3	NEW YORK UNIVERSITY	\$0	\$61,139
NIDA Clinical Trials Network: New York Node (CTN-0094)	93.279	NYU 20-A0-S3-003671	3UG1DA013035-19S4	NEW YORK UNIVERSITY MEDICAL CENTER	\$0	\$119,350
NIDA Clinical Trials Network: New York Node (CTN-0100)	93.279	NYU 20-A0-S2-003671/117236	3UG1DA013035-20S2	NEW YORK UNIVERSITY MEDICAL CENTER	\$0	\$1,307
Clinical Trials Network: Greater New York Node CTN-0094: Data	93.279	NYU 21-A0-S3-003671/117434	3UG1DA013035-20S4	NEW YORK UNIVERSITY MEDICAL CENTER	\$0	\$93,347
Clinical Trials Network: New England Node: CTN0099 ED-INNOVATION	93.279	YU GR109716	3UG1DA015831-19S1	YALE UNIVERSITY	\$0	\$193,972
Pharmacological Probes Based on Mitragynine Pseudoindoxyl	93.279	SLCP 807-1-01	4R33DA045884-03	ST. LOUIS COLLEGE OF PHARMACY	\$0	\$62,964
Evaluation of Safety and Pharmacokinetics of Naltrexone Implant	93.279	RFMH CU20-4657	4UH3DA047720-03	RESEARCH FOUNDATION FOR MENTAL HYGIENEINC	\$0	\$26,213
Cannabis Relapse: Influence of Tobacco Cessation	93.279	RFMH 27059	5R01DA031005-07	RESEARCH FOUNDATION FOR MENTAL HYGIENEINC	\$0	\$79,572
Impulsivity in Cocaine Abusers: Relationship to Drug-Taking and Treatment Outcome	93.279	RFMH 25925	5R01DA035846-05	RESEARCH FOUNDATION FOR MENTAL HYGIENEINC	\$0	\$127,249
Sexual Orientation Differences: Prevalence and Correlates of Substance Use and Abuse	93.279	PHI 00394	5R01DA036606-03	PUBLIC HEALTH INSTITUTE	\$0	\$2,131
HIV/Drug Abuse Prevention Research Ethics Training Institute	93.279	FORDUN FORD0048	5R25DA031608-09	FORDHAM UNIVERSITY	\$0	\$16,241
Phase 1a/1b Clinical Trials of Multivalent Opioid Vaccine	93.279	RFMH 27040	5UG3DA047711-02	RESEARCH FOUNDATION FOR MENTAL HYGIENEINC	\$0	\$247,278
Evaluation of safety and pharmacokinetics of naltrexone implant	93.279	RFMH 27041	5UG3DA047720-02	RESEARCH FOUNDATION FOR MENTAL HYGIENEINC	\$0	\$123,167

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						<u>Total Expenditures (Includes Subrecipients)</u>
Missing Data Matters: Substance Use Disorder Clinical Trials	93.279	UUTAH 10058454-01	7R01DA046534-04	UNIVERSITY OF UTAH	\$0	\$8,165
Functional connectome analysis of amphetamine action at dopamine neuron synapses	93.279	RFMH 26054	R01DA038966	RESEARCH FOUNDATION FOR MENTAL HYGIENEINC	\$0	\$56,951
Medical Marijuana Program Participation and Changes in Controlled Substance Use	93.279	RFMH 27031	R21DA045267-01	RESEARCH FOUNDATION FOR MENTAL HYGIENEINC	\$0	\$14,566
Evaluation of safety and pharmacokinetics of naltrexone implant	93.279	RFMH 27797	UH3DA047720-03	RESEARCH FOUNDATION FOR MENTAL HYGIENEINC	\$0	\$64,623
					<u>\$0</u>	<u>\$3,754,258</u>
<b>Discovery and Applied Research for Technological Innovations to Improve Human Health</b>						
Bio-electrochemical detectors for in vivo continuous monitoring	93.286	USCB KK1836	1R01EB022015-01A1	UNIVERSITY OF CALIFORNIA, SANTA BARBARA	\$0	\$135,350
Noninvasive Quantification of Brain Glucose Metabolism Using a Portable Positron Emission Tomography Camera.	93.286	RFMH 27000	1R01EB026481-01	RESEARCH FOUNDATION FOR MENTAL HYGIENEINC	\$0	\$83,405
COVID-19-An Ultrafast affordable RT-PCR device for the detection of SARSCoV-2	93.286	ROVER 2020.COLUMBIA.1	3U54HL143541-02S1	ROVER DIAGNOSTICS	\$0	\$126,392
Causal Inference for Neuroimaging	93.286	JH 2003851642	5R01EB016061-08	JOHNS HOPKINS UNIVERSITY	\$0	\$71,444
Tools for modeling state-dependent sensory encoding by neural populations across spatial and temporal scales	93.286	ORHSUN 1014876 COLUMBIA	5R01EB028155-02	OREGON HEALTH SCIENCES UNIVERSITY	\$0	\$170,458
FEBio Software Suite	93.286	UUTAH 10052732-COL	5U24EB029007-02	UNIVERSITY OF UTAH	\$0	\$33,500
Imaging Human brain Function with Minimal Mobility Restrictions	93.286	UMINN N006264801	U01EB025153	UNIVERSITY OF MINNESOTA	\$0	\$784,614
					<u>\$0</u>	<u>\$1,405,163</u>
<b>Minority Health and Health Disparities Research</b>						
Peer-Administered Asthma Self-Management Intervention in Urban Middle Schools	93.307	RIH 710-7137328	1R01MD012225-01	RHODE ISLAND HOSPITAL	\$0	\$26,044
Maternal trauma, circulating microRNA in extracellular vesicles, and programming of childhood respiratory outcomes	93.307	ISMMS 0255-B281-4609	1R01MD013310-01	ICAHN SCHOOL OF MEDICINE AT MOUNT SINAI	\$0	\$206,431
Social Stress Epigenetics and Cardio-Metabolic Health Among Latinos	93.307	EMORYU A193700	1R01MD013320-01A1	EMORY UNIVERSITY	\$0	\$71,193
Using agent-based modeling to compare strategies that can reduce rural-urban disparities in cardiovascular disease	93.307	UGA SUB00002060	1R01MD013886-01	UNIVERSITY OF GEORGIA	\$0	\$21,086
Identifying and exploring solutions to the ethical challenges of Apol1 testing of donors with recent African ancestry through mixed methods research with stakeholders	93.307	WU-20-108-MOD-2	1R01MD014161-01	WASHINGTON UNIVERSITY	\$0	\$49,751
Data Driven Methods for Missing Data Imputation in Surgical Disparities Research	93.307	GWU 19-M111	5R01MD013901-02	GEORGE WASHINGTON UNIVERSITY	\$0	\$30,502
Yale Transdisciplinary Collaborative Center for Health Disparities Research (YALE-TCC)	93.307	GR109819 (CON-80002412)	5U54MD010711-04	YALE UNIVERSITY	\$0	\$19,264
					<u>\$0</u>	<u>\$424,271</u>
<b>Trans-NIH Research Support</b>						
Physical Activity Genomics, Epigenomics/transcriptomics Site	93.310	ISMMS 0255-2446-4609	1U24DK112331-01	ICAHN SCHOOL OF MEDICINE AT MOUNT SINAI	\$0	\$23,669
CHEAR Center for Data Science	93.310	0255-0225-4609	1U2CES026555-01	ICAHN SCHOOL OF MEDICINE AT MOUNT SINAI	\$0	\$28,038

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National Exposure Assessment Laboratory at Emory	93.310	EMORYU A065065	1U2CES026560-01	EMORY UNIVERSITY	\$0	\$73,839	
Mount Sinai CHEAR Network Laboratory HUB	93.310	ISMMS 0255-0515-4609	1U2CES026561-01	ICAHN SCHOOL OF MEDICINE AT MOUNT SINAI	\$0	\$104,686	
Environmental Influences on Child Health Outcomes (ECHO) Coordinating Center	93.310	DUKEU A03-2319	1U2COD023375-01	DUKE UNIVERSITY	\$0	\$31,804	
Data and Research Support Center	93.310	VUMC59350	1U2COD23196-01	VANDERBILT UNIVERSITY MEDICAL CENTER	\$0	\$1,832,091	
Exposome Contributors to Child Health Originating from National Fetal Growth Study (ECCHO-NFGS)	93.310	A00-2818-S001	1UG3OD023316-01	MEDICAL UNIVERSITY OF SOUTH CAROLINA	\$0	\$496,673	
Breaking The Cycle Of Intergenerational Disadvantage: Neurodevelopment Among Puerto Rican Children	93.310	RFMH 150349	1UG3OD023328-01	RESEARCH FOUNDATION FOR MENTAL HYGIENEINC	\$0	\$335,445	
ECHO Consortium on Perinatal Programming of Neurodevelopment	93.310	ISMMS 0255-2294-4609	1UG3OD023337-01	ICAHN SCHOOL OF MEDICINE AT MOUNT SINAI	\$0	\$91,370	
An integrated and diverse genomic medicine program for undiagnosed diseases	93.310	DUKEU A033653	2U01HG007672-05	DUKE UNIVERSITY MEDICAL CENTER	\$0	\$198,739	
COVID-19-Antibody library display for precision screening of antibody responses to SARS-CoV-2	93.310	KUCR FY2021-048	3DP5OD023118-05S1	UNIVERSITY OF KANSAS CENTER FOR RESEARCH, INC.	\$0	\$15,209	
Quasi-mechanistic modeling of cell line drug response using neural networks as time evolution operators	93.310	1090580-437271	3OT2OD026675-01S3	CARNEGIE MELLON UNIVERSITY	\$0	\$37,579	
Environmental Influences on Child Health Outcomes in the Northern Plains Safe Passage Study Cohort	93.310	AMH 5UH3OD023279-B2	4UH3OD023279	AVERA MCKENNAN HOSP & UNIV HEALTH CTR	\$0	\$355,023	
Environmental Influences on Child Health Outcomes in the Northern Plains Safe Passage Study Cohort	93.310	AVERA 5UH3OD023279-A3	4UH3OD023279-04	AVERA MCKENNAN HOSP & UNIV HEALTH CTR	\$0	\$427,148	
Children s Respiratory Research and Environment Workgroup (CREW)	93.310	UWM 000000907	5UH3OD023282-04	UNIVERSITY OF WISCONSIN MADISON	\$0	\$691,392	
Re-engineering Precision Therapeutics Through N-of-1 Trials	93.310	FIMR 500811CU	7R01LM012836-03	FEINSTEIN INSTITUTE FOR MEDICAL RESEARCH	\$0	\$13,895	
					\$0	\$4,756,600	
<b>National Center for Advancing Translational Sciences</b>							
Gut Microbiota in the Modulation of Outcomes after Liver Transplant	93.350	VCU FP00011749 SA001	1R21TR003095-01A1	VIRGINIA COMMONWEALTH UNIVERSITY	\$0	\$20,820	
Open Health Natural Language Processing Collaboratory	93.350	MAORO COL-231278/65497608	1U01TR002062-01	MAYO CLINIC -- ROCHESTER	\$0	\$410,796	
Coordinated medical treatment of opioid use disorder and infectious disease	93.350	YU GR109957 (CON-80002430)	1U01TR002763-01	YALE UNIVERSITY	\$0	\$79,939	
Improving Clinical Trial Enrollment and Recruitment Education at CTSA hubs (I-CERCH)	93.350	VUMC 59243	1U24TR001579-01	VANDERBILT UNIVERSITY MEDICAL CENTER	\$0	\$19,688	
CD2H - National COVID Cohort Collaborative (N3C) Supplement	93.350	JHU 1011902-001	3U24TR002306-04S1	JOHNS HOPKINS UNIVERSITY	\$0	\$15,366	
University of Pittsburgh Clinical and Translational Science Institute ACT Supplement	93.350	AWD000000243 (134445-1)	3UL1TR001857-01S1	UNIVERSITY OF PITTSBURGH	\$48,493	\$97,034	
STeriods to REduce Systemic inflammation after neonatal heart Surgery	93.350	DUKEU 203-8371	5U01TR001803-02	DUKE UNIVERSITY	\$0	\$-1,998	
Systemic Inflammation in Microphysiological Models of Muscle and Vascular Disease	93.350	DUKEU A03-3576	5UH3TR002142-04	DUKE UNIVERSITY	\$0	\$191,088	
A First in Class Disease Modifying Therapy to Treat Alpha-1 Antitrypsin Deficiency a Genetically Linked Orphan Disease (UH3 Phase II)	93.350	000518169-SC009	5UH3TR002450-03	UNIVERSITY OF ALABAMA AT BIRMINGHAM	\$0	\$57,949	

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					Subrecipients	Total Expenditures (Includes Subrecipients)
					\$48,493	\$890,682
<b>21st Century Cures Act - Beau Biden Cancer Moonshot</b>						
Advancing the Quality of Cancer Care through Behavioral Economics and Implementation Science	93.353	UPENN 580281	1-P50-CA-244690-01	UNIVERSITY OF PENNSYLVANIA	\$0	\$31,379
Transition to Metastatic State: Lung Cancer, Pancreatic Cancer and Brain Metastasis-Functional Unit 3	93.353	MSKCC BD524105B	5U2CCA233284-03	MEMORIAL SLOAN-KETTERING CANCER CENTER	\$0	\$135,904
					\$0	\$167,283
<b>Nursing Research</b>						
Neighborhoods, networks, and the HIV care continuum among HIV infected MSM in NYC	93.361	NYBC IDP-NIH620	1R01MH118960-01A1	NEW YORK BLOOD CENTER	\$0	\$54,021
Improving Ethical Care for Patients who are Incapacitated with No Evident Advance Directives or Surrogates (INEADS)	93.361	ISMMS 0255-E151-4609	1R21NR019319-01	ICAHN SCHOOL OF MEDICINE AT MOUNT SINAI	\$0	\$52,713
The role of host-microbial interactions in altering preterm birth risk among black women	93.361	UPENN 579470	2R01NR014784-06	UNIVERSITY OF PENNSYLVANIA	\$0	\$76,473
Should we return patient reported outcomes to human subjects participants? exploring ethical obligations	93.361	WCMC 203318	3R00NR016275-05S1	CORNELL UNIVERSITY	\$0	\$20,642
					\$0	\$203,849
<b>Cancer Cause and Prevention Research</b>						
(PQ#9) Targeting leaky ryanodine receptor (RyR2) to treat and prevent chemotherapy-associated cognitive dysfunction in patients with breast cancer	93.393	IU IN4687657COL	1R01CA206025-01	INDIANA UNIVERSITY	\$0	\$80,469
Predictors of long-term cardiovascular disease among breast cancer survivors in an integrated health system	93.393	KFDNI RNG209338-CU-01	1R01CA214057-01A1	KAISER FOUNDATION RESEARCH INSTITUTE-DIVISION OF RESEARCH	\$0	\$14,763
Enhancing responses to immune checkpoint blockade in melanoma via modulation of the microbiome	93.393	UTMD 3001244409	1R01CA219896-01A1	UNIVERSITY OF TEXAS M.D. ANDERSON CANCERCENTER	\$0	\$114,111
Tumor Immune Contexture and Breast Cancer Disparities: A Multi-Disciplinary Study in Women of African and European Ancestry	93.393	RPCI 394-01	1R01CA247281-01A1	ROSWELL PARK CANCER INSTITUTE	\$0	\$23,220
Addressing Cancer-Related Financial Hardship through Delivery of a Proactive Financial Navigation Intervention	93.393	FHCRC 0001027347	1R01CA248656-01	HUTCHINSON (FRED) CANCER RESEARCH CENTER	\$0	\$47,322
Cell lineage determinants of p53-driven fate outcomes in vivo	93.393	ISMMS 0255-E071-4609	1R01CA257548-01	ICAHN SCHOOL OF MEDICINE AT MOUNT SINAI	\$0	\$36,282
Leveraging tumor registries and pathology specimens to facilitate genetic testing and traceback for ovarian cancer	93.393	KFDNI OOS030500-COLU-01	1U01CA244323-01	KAISER FOUNDATION RESEARCH INSTITUTE-DIVISION OF RESEARCH	\$0	\$106,031
A web-based patient reported symptom monitoring and self-management portal for adolescent and young adult breast cancer survivors	93.393	DFCI 1315801	1U01CA246648-01A1	DANA-FARBER CANCER INSTITUTE	\$0	\$14,623
Structural Cell Biology of DNA Repair Machines	93.393	LBLN 7341650	2P01CA092584-16	LAWRENCE BERKELEY NATIONAL LABORATORY	\$0	\$46,558
Role of Histone and Histone-like Mutations in the Oncogenesis of Human Cancers	93.393	RFU SUB00000166	2P01CA196539-06	ROCKEFELLER UNIVERSITY	\$0	\$129,599
The NYU Women s Health Study	93.393	NYU 20-A0-S2-001427	2U01CA182934-06	NEW YORK UNIVERSITY	\$0	\$79,420
Integration of Clinical and Molecular Biomarkers for Melanoma Survival	93.393	UNMEX 3RCQ4	5P01CA206980-03	UNIVERSITY OF NEW MEXICO	\$0	\$3,801
EMPOWER Study: Promoting Breast Cancer Screening in Women Who Survived Childhood Cancer	93.393	DUKE A033139	5R01CA134722-08	DUKE UNIVERSITY MEDICAL CENTER	\$0	\$24,449
Role of the p53 C-terminal domain in tissue homeostasis, tumor suppression, and oncogenesis	93.393	ISMMS 0255-0481-4609	5R01CA196234-05	ICAHN SCHOOL OF MEDICINE AT MOUNT SINAI	\$0	\$77,206

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Adoption, Diffusion, And Implementation of Tobacco 21 Policies To Address Health Disparities	93.393	RUTGER 1160319	5R01CA231139-02	RUTGERS, THE STATE UNIVERSITY OF NJ DEPT. OF RADIOLOGY	\$0	\$28,595	
Detroit Research on Cancer Survivors	93.393	WSU20042	5U01AA199240-03	WAYNE STATE UNIVERSITY	\$0	\$6,585	
Genetics of Prostate Cancer in South Africa	93.393	WHC 1242102	5U01CA184374-03	WITS HEALTH CONSORTIUM	\$0	\$541	
Genetics of Prostate Cancer in South Africa	93.393	DFCI 1204304	5U01CA184374-04	DANA-FARBER CANCER INSTITUTE	\$0	\$828	
19-M116 Mechanisms and Genomics of Esophageal Carcinogenes	93.393	19-M116	7R01CA208711-05	GEORGE WASHINGTON UNIVERSITY	\$0	\$16,563	
Advanced Development and Dissemination of EMERSE for Cancer Phenotyping from Medical Records	93.393	UMICHG 3004700011	U24CA204863	UNIVERSITY OF MICHIGAN	\$0	\$43,739	
					\$0	\$894,705	
<b>Cancer Detection and Diagnosis Research</b>							
Precision Management of Cystic Precursors to Pancreatic Cancer	93.394	MGH 234610	1R01CA237133-01A1	MASSACHUSETTS GENERAL HOSPITAL	\$0	\$33,049	
Circulating Biomarker Consortium for Pancreatic Cancer Early Detection	93.394	DFCI 1283204	1U01CA210171-01	DANA-FARBER CANCER INSTITUTE	\$0	\$51,236	
High Resolution Microendoscopy for the Management of Esophageal Neoplasia	93.394	BCMh 700000989	5R01CA181275-06	BAYLOR COLLEGE OF MEDICINE--HOUSTON	\$0	\$15,735	
Using Markers to Improve Pancreatic Cancer Screening and surveillance	93.394	JHU 2004290640	5U01CA210170-03	JOHNS HOPKINS UNIVERSITY	\$0	\$17,243	
Computational modeling of tumor burden by CT to advance cancer therapeutics	93.394	INOVA FP-152539-A	R01CA194783	INOVA HEALTH SYSTEM	\$0	\$83,527	
Quantitative imaging tools to derive DW-MRI oncological biomarkers	93.394	MSKCC BD522043A	U01CA211205	MEMORIAL SLOAN-KETTERING CANCER CENTER	\$0	\$175,016	
					\$0	\$375,806	
<b>Cancer Treatment Research</b>							
Investigating the molecular mechanism that mediates the addiction of inflammatory breast cancer cells to HDAC6 function	93.395	ISMMS 0255-1701-4609	1R01CA201162-01A1	ICAHN SCHOOL OF MEDICINE AT MOUNT SINAI	\$0	\$37,468	
Using Arginine Metabolic Therapies for Sarcoma	93.395	WUSOM WU-20-149	1R01CA227115-01A1	WASHINGTON UNIVERSITY SCHOOL OF MEDICINE IN ST. LOUIS	\$0	\$11,912	
Towards Precision ImmunoOncology: Unraveling the Genomic Determinants and Mechanisms Underlying Immunotherapy Sensitivity and Resistance	93.395	MSKCC BD524104A	1R35CA232097-01	MEMORIAL SLOAN-KETTERING CANCER CENTER	\$0	\$7,988	
Study Chair-NIH National Clinical Trials Network (NCTN)	93.395	CHOP 20198767	1U10CA180886-01	CHILDREN'S HOSPITAL OF PHILADELPHIA	\$0	\$7,754	
ECOG-ACRIN Integrated Leukemia Translational Research Center	93.395	MSKCC BD525251B	1UG1CA233332-01	MEMORIAL SLOAN-KETTERING CANCER CENTER	\$0	\$113,424	
Discovery of Anticancer Agents from Diverse Natural Origin	93.395	UNCG 20190268.1	2P01CA125066-11A1	UNIVERSITY OF NORTH CAROLINA GREENSBORO	\$0	\$33,000	
A Phase II, Open Label, Multi-Center Study in Adults with Recurrent High Grade Glioma	93.395	ONCI CU19-1093	2R44CA192427-04	ONCOCEUTICS IN	\$0	\$25,629	
SWOG Network Group Operations Center of the NCTN	93.395	OHSU 1013080	2U10CA180888-06	OREGON HEALTH SCIENCES UNIVERSITY	\$0	\$147,996	
Administrative Supplement for VICKtOrY Early Clinical Trials Consortium	93.395	GR109625 (CON-80002374)	2UM1CA186689-06	YALE UNIVERSITY	\$0	\$23,385	
Alliance for Clinical Trials in Oncology Operations Center	93.395	BWH 123469	3U10CA180821-07S1	BRIGHAM AND WOMEN'S HOSPITAL	\$0	\$39,046	

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The Genomic Determinants and Mechanisms Underlying Immunotherapy Efficacy and Resistance	93.395	CLEVELCL 1496-SUB	5R35CA232097-03	CLEVELAND CLINIC	\$0	\$54,148	
Maximizing Local Access to Therapeutic Deliveries in Glioblastoma	93.395	WFUHS 441111 CORE 3	P01CA207206	WAKE FOREST UNIVERSITY	\$0	\$262,920	
					\$0	\$748,694	
<b>Cancer Biology Research</b>							
Targeting metabolic stress to induce pancreatic tumor cell death	93.396	UMICHG SUBK00012257	1R01CA244931-01A1	UNIVERSITY OF MICHIGAN	\$0	\$37,698	
Nuclear Dysfunction in Cancer: The Role of Mechanical Stresses Transmitted by the LINC Complex	93.396	UFLRDA SUB0002193	1U01CA225566-01A1	UNIVERSITY OF FLORIDA	\$0	\$-6,277	
Dectin-1 signaling drives pancreatic oncogenesis by inducing macrophage-mediated adaptive immune suppression Collab. Activities to Promote Cancer Cachexia Rsch. (Admin Supp - CT)	93.396	NYU 18-S1-00-006678	3R01CA215471-01A1S1	NEW YORK UNIVERSITY MEDICAL CENTER	\$0	\$81,000	
Nuclear Dysfunction in Cancer: The Role of Mechanical Stresses Transmitted by the LINC Complex	93.396	TAMU M2101419	U01CA225566	TEXAS A&M UNIVERSITY	\$0	\$48,321	
					\$0	\$160,742	
<b>Cancer Centers Support Grants</b>							
MSK SPORE in Lymphoma-(Project 4: Targeting Acetyltransferase Gene Inactivation in Diffuse Large B Cell Lymphoma)	93.397	MSKCC BD520439D	1P50CA192937-01A1	MEMORIAL SLOAN-KETTERING CANCER CENTER	\$0	\$189,928	
Towards Understanding Prostate Cancer Heterogeneity	93.397	WCRC 204024	1P50CA211024-01A1	WEILL (JOAN AND SANFORD I.) MED. COLLEGE OF CORNELL UNIV.	\$0	\$127,549	
Investigation of a nonparticle albumin-bound mTOR inhibitor, nabrapamycin, for the intravesical treatment of BCG recurrent or refractory non-muscle invasive transitional cell bladder cancer	93.397	AADI 12-2573	1R42CA171552-01	AADI, LLC	\$0	\$-1	
Cultural Adaptation of a Decision Aid to Reduce Mammography Over screening among Older, Hispanic, Spanish-Speaking Women.	93.397	FCCC 12301-56	3P30CA006927-54S2	FOX CHASE CANCER CENTER	\$0	\$4,396	
Single-cell transcriptomic analysis of childhood Burkitt lymphoma	93.397	MSKCC BD527979	5P50CA192937-05	MEMORIAL SLOAN-KETTERING CANCER CENTER	\$0	\$58,649	
Systems Pharmacology of Therapeutic and Adverse Responses to Immune Checkpoint and Small Molecule Drugs	93.397	HMS 152308.5115347.0411	5U54CA225088-02	HARVARD MEDICAL SCHOOL	\$0	\$137,463	
					\$0	\$517,984	
<b>Cancer Control</b>							
NRG Oncology NCORP Research Base	93.399	NCORP-Kachnic-GY6	2UG1CA189867-06	NRG ONCOLOGY	\$0	\$67,061	
STUDY CHAIR: COG NCORP Research Base	93.399	CHOP 2U10CA180886	2UG1CA189955-06	CHILDREN'S HOSPITAL OF PHILADELPHIA	\$0	\$18,025	
SWOG NCORP Research Base	93.399	ORHSUN 1014562 COLUMBIA	2UG1CA189974-06	OREGON HEALTH SCIENCES UNIVERSITY	\$0	\$269,298	
					\$0	\$354,384	
<b>Supporting and Maintaining a Surveillance System for Chronic Kidney Disease (CKD) in the United States</b>							
Genomic and Transcriptomic Analysis of Emphysema and Subclinical ILD	93.833	UV GB10323 2147850	1R01HL131565-01	UNIVERSITY OF VIRGINIA	\$0	\$7,741	
					\$0	\$7,741	
<b>Cardiovascular Diseases Research</b>							
RAGE/DIAPH1 and Myocardial Infarction (Project 1)	93.837	NYUMC 18-A0-00-1001609	1P01HL146367-01	NEW YORK UNIVERSITY MEDICAL CENTER	\$0	\$10,383	
Risk Stratification in Older Persons with Acute Myocardial Infarction: SILVER-AM	93.837	YU CU13-1532	1R01HL115295-01	YALE UNIVERSITY	\$0	\$12,330	

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<u>Federal Grantor / Pass-through Grantor</u>	<u>Assistance Listing No.</u>	<u>Award Identification No</u>	<u>Pass-through Contract Number</u>	<u>Passthrough Name</u>	<u>Subrecipients</u>	<u>Total Expenditures (Includes Subrecipients)</u>	<u>R&amp;D Cluster</u>
Transitioning from Risk Factors to Heart Failure: Prevalence, Pathogenesis, and Phenomics	93.837	WFUHS 114487	1R01HL127028-01	WAKE FOREST UNIVERSITY	\$0	\$20,695	
Ezh2-mediated Epigenetic Effects and Alloimmunity	93.837	TEMPLE 257154-03-01	1R01HL127351-01A1	TEMPLE UNIVERSITY	\$0	\$124	
CMR Myocardial Tissue Based on Prediction of Ischemic MR Revascularization Response	93.837	CUMC 15040456-04	1R01HL128278-01	WEILL (JOAN AND SANFORD I.) MED. COLLEGE OF CORNELL UNIV.	\$0	\$3,245	
RAGE/mDla 1, Macrophage Trafficking and Inflammation In Regression of Diabetic Atherosclerosis	93.837	NYU 16-A1-00-006521-01	1R01HL132516-01A1	NEW YORK UNIVERSITY MEDICAL CENTER	\$0	\$13,672	
Multi-Component Technology Intervention for African American Emerging Adults With Asthma	93.837	WAYNE WSU17001	1R01HL133506-01	WAYNE STATE UNIVERSITY	\$0	\$38,967	
Telomeres and Female Fecundity	93.837	RUTGER 0070	1R01HL134840-01	RUTGERS, THE STATE UNIVERSITY OF NJ DEPT. OF RADIOLOGY	\$0	\$9,944	
A Longitudinal Epigenetic Study of Atherosclerosis	93.837	WUBGSM WFUHS 116827	1R01HL1350039-01	WAKE FOREST UNIVERSITY	\$0	-\$13,148	
Ambulatory blood pressure and falls in older treated patients with hypertension	93.837	KFDNI#OOS030382-CU	1R01HL136445-01A1	KAISER FOUNDATION RESEARCH INSTITUTE--DIVISION OF RESEARCH	\$0	\$49,322	
Cardiac MR imaging of hemorrhagic reperfusion injury after myocardial infarction	93.837	UPENN 574412	1R01HL137984-01A1	UNIVERSITY OF PENNSYLVANIA	\$0	\$80,000	
Evaluating novel approaches forestimating awake and sleep blood pressure	93.837	UAB 000518835-SC001	1R01HL139716-01A1	UNIVERSITY OF ALABAMA AT BIRMINGHAM	\$0	\$378,176	
Biomechanical Indicators of Bicuspid Aortic Valve Dysfunction	93.837	UTEXAUS CU17-2783	1R01HL142504-01	UNIVERSITY OF TEXAS AT AUSTIN	\$0	\$93,763	
Oxidation-mediated structural degeneration of Bioprosthetic Heart Valves	93.837	CHPHI 3201170622	1R01HL143008-01	CHILDREN'S HOSPITAL OF PHILADELPHIA	\$0	\$381,974	
Whole-genome sequencing analysis of coronary atherosclerosis and related traits	93.837	UTEXHOUS SA0000631	1R01HL146860-01A1	UNIVERSITY OF TEXAS HOUSTON HEALTH SCIENCE CENTER	\$0	\$67,627	
Deep probabilistic predictive models for stroke and coronary heart disease	93.837	NYU F1182-01	1R01HL148248-01	NEW YORK UNIVERSITY	\$0	\$295,298	
Nutritional Omics of Pulmonary Function Decline	93.837	RTI 4-312-0217030-65776L	1R01HL149352-01	RESEARCH TRIANGLE INSTITUTE	\$0	\$62,606	
A stress-induced promoter pause release program in cardiomyocytes protecting against myocardial infarction	93.837	UCSD 131709481 KR Invoice/PO 7	1R01HL15021	UNIVERSITY OF CALIFORNIA, SAN DIEGO	\$0	\$57,679	
Childhood Mass Trauma Exposure, Inflammatory Programming, and Psychopathology in Young Adulthood	93.837	RFMH 27522	1R01HL152385-01A1	RESEARCH FOUNDATION FOR MENTAL HYGIENEINC	\$0	\$65,316	
Research Education in Cardiovascular Conditions (RECV)	93.837	NYU F1416-01 S	1R25HL145323-01A1	NEW YORK UNIVERSITY	\$0	\$4,999	
Eating, Activity, and Weight-Related Problems Across the Life Course in Diverse Populations	93.837	UMINN P006297201	1R35HL139853-01	UNIVERSITY OF MINNESOTA	\$0	\$25,202	
Clinical Implementation of Clopidogrel Pharmacogenetics: The TAILOR-PCI Trial - CCC - Lead Application	93.837	MAORO COL-215432	1U01HL128606-01A1	MAYO CLINIC -- ROCHESTER	\$0	-\$559	
Administrative Coordinating Center (ACC) for the NHLBI Cardiovascular Development (CvDC) and Pediatric Cardiac Genomics (PCGC) Consortia	93.837	CINCMC 138281	1U01HL131003-01	CINCINNATTI CHILDREN'S MEDICAL CENTER	\$0	\$62,407	
Return of Genetic Results Administrative Supplement to ACC: Cardiovascular Development and Pediatric Cardiac Genomics Consortia	93.837	CHMCO 138281	1U01HL131003-04	CHILDREN'S HOSPITAL MEDICAL CENTER - OHIO	\$0	\$47,123	
Continuation of the nuMoM2b Heart Health Study	93.837	RTI 2-312-0217457-65971L	1U01HL145358-01A1	RESEARCH TRIANGLE INSTITUTE	\$17,163	\$96,932	
Atlanta MACS/WIHS Combined Cohort Study Clinical Research Site	93.837	EMORYU A322408	1U01HL46241-01	EMORY UNIVERSITY	\$0	\$48,479	

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**Schedule of Expenditures of Federal Awards**  
**For year ended June 30, 2021**

<u>Federal Grantor / Pass-through Grantor</u>	<u>Assistance Listing No.</u>	<u>Award Identification No</u>	<u>Pass-through Contract Number</u>	<u>Passthrough Name</u>	<u>Subrecipients</u>	<u>Total Expenditures (Includes Subrecipients)</u>	<u>R&amp;D Cluster</u>
Association of Second-Trimester Uterine Artery Doppler Abnormalities with Maternal Hypertension 2-7 Years After Delivery	93.837	RTI 21-312-0214047-65952L	1U10HL119991-01	RESEARCH TRIANGLE INSTITUTE	\$0	\$-1	
Pathways of Tissue Lipid Uptake	93.837	NYUMC 20-A1-00-003442	2R01HL045095-29A1	NEW YORK UNIVERSITY MEDICAL CENTER	\$0	\$8,873	
Structure and function of voltage-gated calcium channels	93.837	UCSF 12002sc	2R01HL080050-14A1	UNIVERSITY OF CALIFORNIA SAN FRANCISCO	\$0	\$65,505	
Quantitative Prediction of Disease and Outcomes from Next Generation SPECT and CT	93.837	CSMCLA CU 0001703992	2R01HL089765-10	CEDARS-SINAI MEDICAL CENTER	\$0	\$31,838	
Incorporation of a Hypertension Working Group into the Jackson Heart Study	93.837	UAB 000515198-002	2R01HL117323-04A1	UNIVERSITY OF ALABAMA AT BIRMINGHAM	\$0	\$45,186	
Serotonin Signaling in Mitral Valve Homeostasis, Maintenance and Restoration	93.837	GRT 00001011	2R01HL131872-05	CHILDREN'S HOSPITAL OF PHILADELPHIA	\$0	\$37,701	
Evaluation of Outcomes Following Mitral Valve Repair/Replacement In Severe Chronic Ischemic Mitral Regurgitation	93.837	0255-A343-4605	2U01HL088942-12	ICAHN SCHOOL OF MEDICINE AT MOUNT SINAI	\$0	\$4,840	
PRE-DETERMINE: Biologic Makers and MRI SCD Cohort Study	93.837	BWH 13-1204	5R01HL091069	BRIGHAM AND WOMEN'S HOSPITAL	\$0	\$1,800	
SVRIII: Brain Connectome and Neurodevelopment Outcomes	93.837	UPITT CU19-3219	5R01HL128818-05	UNIVERSITY OF PITTSBURGH	\$0	\$3,799	
Serotonin Signaling in Mitral Valve Homeostasis, Maintenance and Restoration	93.837	CHPHI FP20409 Sub06 01	5R01HL131872-02	CHILDREN'S HOSPITAL OF PHILADELPHIA	\$0	\$37,863	
Optically Guided Catheter Ablation of Atrial Fibrillation	93.837	CWRU RES514542	5R01HL149369-02	CASE WESTERN RESERVE UNIVERSITY	\$0	\$314,807	
Constructing a hypertension continuum of care for HIV-infected formerly incarcerated Black men	93.837	100-1091654-83591	5R25HL10544610	STATE UNIVERSITY OF NEW YORK, DOWNSTATEMEDICAL CENTER	\$0	\$-1,432	
Chronic Hypertension and Pregnancy-CHAP Clinical Coordinating Center	93.837	UAB 00503570-002	5U01HL120338-02	UNIVERSITY OF ALABAMA AT BIRMINGHAM	\$12,333	\$68,709	
Multicenter Interventional Lymphangioliomyomatosis Early Disease Trial	93.837	UCINCI 010575-008	5U01HL131755-03	UNIVERSITY OF CINCINNATI, COLLEGE OF MEDICINE	\$0	\$18,636	
The association between social determinants of health and adverse pregnancy outcomes with future cardiometabolic health: a nuMoM2b-HHS study	93.837	RTI 9-312-0214047-65910L	5U10HL119991-04	RESEARCH TRIANGLE INSTITUTE	\$0	\$20,000	
Role of angiogenic Notch in uterine decidualization and placentation	93.837	RUTGER 0780	7R01HL127013-03	RUTGERS, THE STATE UNIVERSITY OF NJ DEPT. OF RADIOLOGY	\$0	\$10,098	
A Longitudinal Epigenetic Study of Atherosclerosis	93.837	DUKE A032468	7R01HL135009-04	DUKE UNIVERSITY	\$0	\$35,044	
TRANSFORM-HF Study	93.837	YU GR104830	7U01HL125511-02	YALE UNIVERSITY	\$0	\$833	
Notch in Angiogenesis and Vascular Biology	93.837	UII 16880-00	R01HL112626	UNIVERSITY OF ILLINOIS, BOARD OF TRUSTEES	\$0	\$6,938	
Population Effects of Motivation Interviewing on Pediatric Obesity in Primary Care	93.837	AAP 101905-Columbia	R01HL128231-01A1	AMERICAN ACADEMY OF PEDIATRICS	\$0	\$11,930	
Pediatric Heart Network U24HL135691	93.837	NERI CU17-3862	U24HL135691	NEW ENGLAND RESEARCH INSTITUTES	\$0	\$88	
1/2 A randomized controlled trial of pravastatin to prevent preeclampsia in high-risk women	93.837	OSU 60076777	UH3HL140131	OHIO STATE UNIVERSITY	\$0	\$19,106	
					\$29,496	\$2,654,717	
<b>Lung Diseases Research</b>							
COVID-19-Collaborative Cohort of Cohorts for COVID-19 Research (C4R)	93.838	RTI 22-312-0217571-66178	1OT2HL156812-01	RESEARCH TRIANGLE INSTITUTE	\$1,239,524	\$2,250,508	

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**Schedule of Expenditures of Federal Awards**  
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<u>Federal Grantor / Pass-through Grantor</u>	<u>Assistance Listing No.</u>	<u>Award Identification No</u>	<u>Pass-through Contract Number</u>	<u>Passthrough Name</u>	<u>Subrecipients</u>	<u>Total Expenditures (Includes Subrecipients)</u>	<u>R&amp;D Cluster</u>
Frailty and patient centered outcomes in candidates for lung transplantation	93.838	UCSF 10296sc	1R01HL134851-01A1	UNIVERSITY OF CALIFORNIA SAN FRANCISCO	\$0	\$49,091	
Sleep and Well-being in High Risk Youth	93.838	RFMH 26555	1R01HL134856-01	RESEARCH FOUNDATION FOR MENTAL HYGIENEINC	\$0	\$26,564	
The CAPTURE Study: Validating a Unique COPD Screening Tool inPrimary Care	93.838	WCMC 203539-6	1R01HL136682-01	WEILL (JOAN AND SANFORD I.) MED. COLLEGE OF CORNELL UNIV.	\$0	\$25,793	
The Road to Destination Therapy: Optimizing Long-Term Mechanical Cardiopulmonary Support forPulmonary Hypertension	93.838	VUMC 67475	1R01HL140231-01A1	VANDERBILT UNIVERSITY MEDICAL CENTER	\$0	\$39,995	
Understanding the Origins of Early COPD	93.838	WCMC 192243-1	1R01HL144718-01A1	WEILL (JOAN AND SANFORD I.) MED. COLLEGE OF CORNELL UNIV.	\$0	\$7,875	
Impact of Prenatal Vitamin A Deficiency on Cell Fate Alterations in Adult Airway Hyper Responsiveness	93.838	AECM 311707	1R01HL145302-01A1	ALBERT EINSTEIN COLLEGE OF MEDICINEESHIVA UNIVERSITY	\$0	\$77,324	
Detecting pleiotropic effects through integration of omics data	93.838	YALE GR105810 (CON-80001760)	1R01HL145660-01A1	YALE UNIVERSITY	\$0	\$234,335	
Genetic and developmental mechanisms of congenital diaphragmatic hernia	93.838	UWIS 0000000031	1R01HL146859-01	UNIVERSITY OF WISCONSIN MADISON	\$0	\$17,840	
BEside Exclusion of Pulmonary Emboli in Children without Exposure to Radiation-BEEPER	93.838	IUSM 8486-CU	1R01HL148247-01A1	INDIANA UNIVERSITY	\$0	\$31,463	
Evaluation of the Asthma Management Program to Promote Activity for Students In Schools (AsthmaPASS)	93.838	AECM 311874	1R61HL147908-01A1	ALBERT EINSTEIN COLLEGE OF MEDICINEESHIVA UNIVERSITY	\$0	\$15,231	
Data Fusion: A Sustainable Scalable, Open Source Registry Advancing PVD Research	93.838	UCOL FY20.369.007	1U01HL121518-01	UNIVERSITY OF COLORADO	\$0	\$-1	
ORal Bacterial EXtracts (ORBEX): Primary Prevention of Asthma and Wheezing in Children	93.838	UA 330411	1U01HL130045-01	UNIVERSITY OF ARIZONA	\$0	\$42,667	
SPIROMICS II: Biological underpinnings of COPD heterogeneity and progression	93.838	UCSF CU17-3435	1U01HL137880-01	UNIVERSITY OF CALIFORNIA SAN FRANCISCO	\$0	\$280,198	
Long Term Follow-up of the Lung Transplant Outcomes Group (LTOG) Cohort	93.838	UPENN 579545	1U01HL145435-01	UNIVERSITY OF PENNSYLVANIA	\$0	\$63,116	
SPIROMICS GIC Support	93.838	UNC-CH 5111451	1U24HL141762-01	UNIVERSITY OF NORTH CAROLINA AT CHAPEL HILL	\$0	\$19,160	
PATINA - Precision Administration of Treatment in Neutrophilic severe Asthma	93.838	BWH 118345	1UG1HL139124-01	BRIGHAM AND WOMEN'S HOSPITAL	\$0	\$6,015	
AZithromycin Therapy in Preschoolers with a Severe Wheezing Episode Diagnosed at the Emergency Department (AZ-SWED)	93.838	UA 585141	1UG3HL147016-01A1	UNIVERSITY OF ARIZONA	\$0	\$43,041	
(1 of 2) Genetic Epidemiology of COPD	93.838	NJMRCSS 20073011	2U01HL089897	NATIONAL JEWISH HEALTH	\$0	\$327,417	
CT-Based Modeling of Bone Micro Architecture and Fracture-Risk in COPD	93.838	UIO S00925-01	5R01HL142042-02	UNIVERSITY OF IOWA	\$0	\$181,183	
Pulmonary Vascular Disease Phenomic Program (PVDOMICS)Data Coordinating	93.838	CLEVELCL 743-SUB	5U01HL125177-03	CLEVELAND CLINIC	\$0	\$56,282	
Network Management Core (NEMO) for the Pulmonary Trials Cooperative (PTC)	93.838	CNVA00046691 (133106-18)	5U01HL128954-04	UNIVERSITY OF PITTSBURGH MEDICAL CENTER	\$0	\$32	
Data, Modeling, and Coordination Center for PreciSE Network	93.838	UNC-CH 5117256-H3COLUMBIA	5U24HL138998-03	UNIVERSITY OF NORTH CAROLINA AT CHAPEL HILL	\$0	\$43,247	
COVID-19-POST ACUTE SEQUELAE OF SARS-COV-2 INFECTION INITIATIVE	93.838	NYU 11-A-01	OT2HL161847-01	NEW YORK UNIVERSITY MEDICAL CENTER	\$0	\$27,290	
Azheimer s Disease Genetics Consortium	93.838	UPENN 579279	U01AG032984	UNIVERSITY OF PENNSYLVANIA	\$0	\$133,285	

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**Schedule of Expenditures of Federal Awards**  
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<u>Federal Grantor / Pass-through Grantor</u>	<u>Assistance Listing No.</u>	<u>Award Identification No</u>	<u>Pass-through Contract Number</u>	<u>Passthrough Name</u>	<u>R&amp;D Cluster</u>	
					<u>Subrecipients</u>	<u>Total Expenditures (Includes Subrecipients)</u>
					\$1,239,524	\$3,998,951
<b>Blood Diseases and Resources Research</b>						
CHOP 3201710624 Linking Endotypes and Outcomes in Pediatric Acute	93.839	CHOP 3201710624	1R01HL148054-01	CHILDREN'S HOSPITAL OF PHILADELPHIA	\$0	\$498
Composite Health Assesst. Model for Older Adults: Applying Pre-transplant Comorbidity, Geriatric Assessment, & Biomarkers to Predict Non-Relapse Mortality after Allogeneic Transplantation	93.839	CIBMTR CU19-2653	5U24HL138660-03	CIBMTR (CTR FOR INTERNTL BLOOD AND MARROW TRANSPLANT RSCH)	\$0	\$1,085
Immunobiology of Transfusion	93.839	UVA GB10756. PO#2218568	7P01HL132819-03	UNIVERSITY OF VIRGINIA	\$0	\$41,309
DISPLACE: Dissemination and Implementation of Stroke Prevention looking at the Care Environment	93.839	UAB 000524452-010	7R01HL133896-03	UNIVERSITY OF ALABAMA AT BIRMINGHAM	\$0	\$33,745
TET2-mediated transcriptional and epigenetic control of normal and malignant hematopoiesis	93.839	UTHSCSA 166754/165804	7R01HL146664-02	UNIVERSITY OF TEXAS HEALTH SCIENCE CENTER AT SAN ANTONIO	\$0	\$252,146
Platelet and megakaryocyte biology in the normal and injured lung	93.839	UCSF 10277sc	R01HL107386	UNIVERSITY OF CALIFORNIA SAN FRANCISCO	\$0	\$32,406
					\$0	\$361,189
<b>Translation and Implementation Science Research for Heart, Lung, Blood Diseases, and Sleep Disorders</b>						
Implementation of Childhood Obesity Treatment Innovations to Improve Outcomes of Low-Income Children: The Connect for Health II Study	93.840	MGH 234862	1R01HL146782-01	MASSACHUSETTS GENERAL HOSPITAL	\$0	\$16,924
Actions to Decrease Disparities in Risk and Engage in Shared Support for Blood Pressure Control (ADDRESS-BP) in Black	93.840	NYU 20-A1-00-1003342	UG3HL151310	NEW YORK UNIVERSITY	\$0	\$12,285
					\$0	\$29,209
<b>Arthritis, Musculoskeletal and Skin Diseases Research</b>						
Drugs, Germs, and Joints: Antibiotics, Gut Microbiota, and Juvenile Idiopathic Arthritis	93.846	RUTGERS 0252	1K23AR070286-02	RUTGERS, THE STATE UNIVERSITY OF NJ DEPT. OF RADIOLOGY	\$0	\$1,690
Multiscale models of fibrous interface mechanics	93.846	WU-21-59	1R01AR077793-01	WASHINGTON UNIVERSITY	\$0	\$146,667
Treatments Against RA and Effect on FDG PET/Ct: The Target Trial	93.846	BWH 113296	1U01AR068043-01	BRIGHAM AND WOMEN'S HOSPITAL	\$0	\$47,817
A sequenced-strategy for improving outcomes in patients with knee osteoarthritis pain	93.846	JHU 2004879865	4UH3AR077360-02	JOHNS HOPKINS UNIVERSITY	\$0	\$9,358
Engineering Polymers to Scavenge DAMPs in Arthritis and Lupus	93.846	DUKEU A031921	5R01AR073935-03	DUKE UNIVERSITY	\$0	\$304,497
Complement citrullination in RA pathogenesis	93.846	JHU 2004010096	5R01HL122967-04	JOHNS HOPKINS UNIVERSITY	\$0	\$20,487
Withdrawal of Hydroxychloroquine in Elderly Lupus Patients	93.846	NYU 111836	R34AR075283	NEW YORK UNIVERSITY MEDICAL CENTER	\$0	\$24,735
					\$0	\$555,251
<b>Diabetes, Digestive, and Kidney Diseases Extramural Research</b>						
Novel pharmacotherapy strategies for obesity in schizophrenia	93.847	UNC-CH 510499	1R01DK105526-01A1	UNIVERSITY OF NORTH CAROLINA AT CHAPEL HILL	\$0	\$25,301
RAGE/mDia 1, Macrophage Trafficking and Inflammation in High Fat Feeding	93.847	NYUMC 15-A0-00-005301-01	1R01DK109675-01	NEW YORK UNIVERSITY MEDICAL CENTER	\$0	\$15,370
Study of coding variants in human obesity and their functional characterization using human iPSC-derived cellular models	93.847	ISMMS 0255-2211-4609	1R01DK110113-01	ICAHN SCHOOL OF MEDICINE AT MOUNT SINAI	\$0	\$128,003
Pathogenesis of compromised bone quality and mechanics in chronic kidney disease	93.847	IUSM IN46887773CU	1R01DK110871-01	INDIANA UNIVERSITY SCHOOL OF MEDICINE	\$0	\$7,302

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<u>Federal Grantor / Pass-through Grantor</u>	<u>Assistance Listing No.</u>	<u>Award Identification No</u>	<u>Pass-through Contract Number</u>	<u>Passthrough Name</u>	<u>Subrecipients</u>	<u>R&amp;D Cluster</u> <u>Total Expenditures (Includes Subrecipients)</u>
Mechanisms mediating podocyte-parietal epithelial cell crosstalk in proliferative glomerulopathies	93.847	RFSUNY 89194/2/1163728	1R01DK12184601A1	RESEARCH FOUNDATION OF THE STATE UNIVERSITY OF NEW YORK	\$0	\$18,029
Targeting RAGE/DIAPH1: Novel Therapeutic Strategy for Diabetic Complications	93.847	NYUMC 20-A1-00-1002209	1R01DK122456-01A1	NEW YORK UNIVERSITY MEDICAL CENTER	\$0	\$28,241
Comparison of Intensive Behavioral Counseling vs. Medical Management to Treat Adolescent Severe Obesity	93.847	UMINN N008295601	1R01DK123273-01A1	UNIVERSITY OF MINNESOTA	\$0	\$20,119
Resilience to obesity in carriers of monogenic obesity mutations a study on the underlying mechanisms	93.847	ISMMS 0255-D641-4609	1R01DK124097-01A1	ICAHN SCHOOL OF MEDICINE AT MOUNT SINAI	\$0	\$132,413
QSM to Guide Iron Chelating Therapy in Transfusional Iron Overload	93.847	CUMC 211378	1R01K116126-01A1	WEILL (JOAN AND SANFORD I.) MED. COLLEGE OF CORNELL UNIV.	\$0	\$131,410
Converting gut endocrine cells to glucose-responsive insulin producing cells by selective Foxo1 inhibition to cure insulin-dependent diabetes	93.847	FBL CU18-2834	1R43DK120177-01A1	FORKHEAD BIOTHERAPEUTICS, LLC	\$0	\$21,228
Dissecting the Pathogenesis and Outcomes of PSC Using Mutomics by Studying the Exposome and Genome	93.847	COL-245818-03/PO#67519684	1RC2DK118619-01	MAYO CLINIC -- ROCHESTER	\$0	\$42,899
Integrating large scale genomics and functional studies to accelerate FSGS/NS discovery	93.847	BIDMC 01062791	1RC2DK122397-01A1	BETH ISRAEL DEACONESS MEDICAL CENTER	\$0	\$282,351
Center for Identification and Study of Individuals with Atypical Diabetes Mellitus	93.847	FP068366-01 H	1U54DK118612-01	UNIVERSITY OF CHICAGO	\$0	\$147,220
The Insulin-Only Bionic Pancreas Pivotal Trial: Testing the iLet in Adults and Children with Type 1 Diabetes	93.847	JCHR CU20-0743	1UC4DK108612-01	JAEB CENTER FOR HEALTH RESEARCH	\$0	\$123,732
Collaborative Islet Transplant Registry (CITR)	93.847	Emmes CU18-0268	1UC4DK114839-01	EMMES CORPORATION	\$0	\$2,297
Long-term Consequences of HIV in the Kidney	93.847	BCMH 7000000385	2P01DK056492-01	BAYLOR COLLEGE OF MEDICINE--HOUSTON	\$0	\$156,607
Probing the Biochemical Mechanisms of Amyloid Disease	93.847	SCRIPPS 5-53806	2R01DK046335-25A1	SCRIPPS RESEARCH INSTITUTE	\$0	\$75,194
Modulating pathogenic T cells in Type 1 diabetes	93.847	YU GR106198	2R01DK057846-15	YALE UNIVERSITY	\$0	\$32,116
Role of RTN1A in the Progression of Diabetic Nephropathy	93.847	ISMMS 0255-1032-4609	2R01DK109683-05	ICAHN SCHOOL OF MEDICINE AT MOUNT SINAI	\$0	\$39,852
Treatment Options For Type 2 Diabetes In Adolescents and Youth (Today) Trial T2P2	93.847	GWU 16-D06	2U01DK061230-12	GEORGE WASHINGTON UNIVERSITY	\$0	\$45,714
Glycemia Reduction Approaches in Diabetes: A Comparative Effectiveness (GRADE) Study	93.847	GW S-GRD1718-LL7	2U01DK098246-06	GEORGE WASHINGTON UNIVERSITY	\$0	\$823,392
Data Coordinating Center for Type 1 Diabetes TrialNet	93.847	USF 6163-1082-00-B	2U01DK106993-02	UNIVERSITY OF SOUTH FLORIDA	\$0	\$313,094
Effects of Biomedical Risk Factors: Neuro-cognition Using MRI: Long term follow-up of Diabetes Control & Complications Trial/Epidemiology of Diabetes Interventions & Complication Study	93.847	WCMC 194240	3DP3DK114812-01S1	WEILL (JOAN AND SANFORD I.) MED. COLLEGE OF CORNELL UNIV.	\$0	\$25,800
Epidemiology of Diabetes Interventions and Complications	93.847	CWRU RES516002	3U01DK094157-06S1	CASE WESTERN RESERVE UNIVERSITY	\$0	\$50,400
Glycemic Observation and Metabolic Outcomes in Mothers and Offspring	93.847	NWU 60057524 CU	3U01DK123759-02S1	NORTHWESTERN UNIVERSITY	\$0	\$35,448
Methylomics of Prenatal GDM: Natural History & Lifestyle Intervention in Children	93.847	LSU 50363-S3	5R01DK100790-02	LOUISIANA STATE UNIVERSITY (BOARD OF SUPERVISORS OF LSU & A&M)	\$0	\$110,207
Emotional Distress in a Comparative Effectiveness Trial of Diabetes Treatments	93.847	GWU CU14-1924	5R01DK104845-05	GEORGE WASHINGTON UNIVERSITY	\$0	\$13,921
siRNA Protection of Islet Grafts in Baboons	93.847	MSU RC108393CUNY	5R01DK105503-05	MICHIGAN STATE UNIVERSITY	\$0	\$2,646

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<u>Federal Grantor / Pass-through Grantor</u>	<u>Assistance Listing No.</u>	<u>Award Identification No</u>	<u>Pass-through Contract Number</u>	<u>Passthrough Name</u>	<u>Subrecipients</u>	<b>R&amp;D Cluster</b>
						<u>Total Expenditures (Includes Subrecipients)</u>
REPRIEVE A5332 Kidney Function Sub Study / Effect of Pitavastatin on Kidney Function in HIV-infected Persons	93.847	UCLA 1560 B XA412	5R01DK108438-04	UNIVERSITY OF CALIFORNIA, LOS ANGELES	\$0	\$52,710
Behavioral adherence in emerging adults with type 2 diabetes	93.847	SUNYRF 1138946-77867	5R01DK110456-03	RESEARCH FOUNDATION OF THE STATE UNIVERSITY OF NEW YORK	\$0	\$2,400
Prospective Longitudinal Study of IWITH Screen Failures Secondary to Histopathology	93.847	USCF 11509sc	5R01DK114180-03	UNIVERSITY OF CALIFORNIA SAN FRANCISCO	\$0	\$2,054
Childhood Food Insecurity in the Underserved	93.847	APA CU16-0377	5R25DK096944-03	ACADEMIC PEDIATRIC ASSOCIATION	\$0	\$226
Improving Medication Adherence in adolescents who had a Liver Transplant: iMALT	93.847	ISMMS 0255-A943-4609	5U01DK119200-02	ICAHN SCHOOL OF MEDICINE AT MOUNT SINAI	\$0	\$29,176
The Subgingival Microbiome and Impaired Glucose Regulation	93.847	UM P006923603	7R01DK102932-04	UNIVERSITY OF MINNESOTA	\$0	\$272,406
siRNA Protection of Composite Islet-Kidney Transplant in Baboons	93.847	MSU RC108392CUNY	7R01DK105468-04	MICHIGAN STATE UNIVERSITY	\$0	\$82,758
Trialnet Type 1 Diabetes Natural History Study	93.847	UFLRDA 260937	NIDDK	UNIVERSITY OF SOUTH FLORIDA	\$0	\$-2,962
Percutaneous Ultrasound Gastrostomy: Clinical Evaluation of a Feeding Tube Placement Method in the Pediatric Population	93.847	CoapTech R44DK123910-CUMC	R44DK123910	COAPTECH	\$0	\$20,768
Losartan for the Treatment of Pediatric NAFLD: A Phase 2 Randomized, Placebo-Controlled Trial (STOP-NAFLD).	93.847	JH 2003854718	U01DK061730	JOHNS HOPKINS UNIVERSITY	\$0	\$110
					\$0	\$3,309,952
<b>Extramural Research Programs in the Neurosciences and Neurological Disorders</b>						
Trajectories and modifiable risk factors of brain, gait, and cognitive decline in aging	93.853	AECM 311762	1R01AG062659-01A1	ALBERT EINSTEIN COLLEGE OF MEDICINE SHIVA UNIVERSITY	\$0	\$62,065
Targeting Endosomal Receptors for Treatment of Chronic Pain	93.853	NYU F1628-01	1R01DE029951-01	NEW YORK UNIVERSITY	\$0	\$30,073
Mechanisms of Early Recurrence in Intracranial Atherosclerotic Disease	93.853	UM SPC-000140	1R01NS084288-01A1	UNIVERSITY OF MIAMI	\$0	\$16,170
Close-loop intervention in epileptogenesis	93.853	SU 61104536-120534	1R01NS094668-01	STANFORD UNIVERSITY	\$0	\$9,915
Carotid Revascularization and Medical Management for Asymptomatic Carotid Stenosis Trial - Hemodynamics (CREST-H)	93.853	MAOJF COL-232483	1R01NS097876-01A1	MAYO CLINIC JACKSONVILLE	\$0	\$6,311
Long-term outcome in unruptured brain arteriovenous malformation patients	93.853	UCSF 10177sc	1R01NS099268-01A1	UNIVERSITY OF CALIFORNIA SAN FRANCISCO	\$0	\$112,253
Modeling enteric nervous system development and Hirschsprung's disease in human pluripotent stem cells	93.853	MSKCC BD520455	1R01NS099270-01	MEMORIAL SLOAN-KETTERING CANCER CENTER	\$0	\$87,213
MRI Predictors of Disease and Disability Progression in African Americans With Multiple Sclerosis	93.853	ISMMS 0255-4191-4609	1R01NS10081-01A1	ICAHN SCHOOL OF MEDICINE AT MOUNT SINAI	\$0	\$42,676
The Effect of Lower Pressure over the Life Course on Late-life Cognition in Black	93.853	UMICHG 300465879	1R01NS102715-01	UNIVERSITY OF MICHIGAN	\$0	\$57,589
Novel regulation and function of the lncRNA Gomafu in human neurons	93.853	EMORYU A228115	1R01NS110110-01A1	EMORY UNIVERSITY	\$0	\$66,024
Understanding the fast and slow spatiotemporal dynamics of human seizures	93.853	BU 4500003407	1R01NS110669-01	BOSTON UNIVERSITY	\$0	\$155,314
Mitochondrial control of protein translation in Fragile X	93.853	YU GR107040 (CON-80001842)	1R01NS112706-01	YALE UNIVERSITY	\$0	\$214,211
Targeting Go and Grow in Glioblastoma	93.853	MAYO CJ COL-272751/PO #6753053	1R01NS118513-01	MAYO CLINIC JACKSONVILLE	\$0	\$91,157

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Corticospinal neuron dysfunction and degeneration in ALS: testing the role of corticomotor connectivity in motor neuron disease.	93.853	WMBMRI 112005-01	1R01NS119508-01	WINIFRED MASTERSON BURKE MED RES INST	\$0	\$103,281	
Mapping representational format across the human brain	93.853	BROWNU 00001239	1R21NS108380-01	BROWN UNIVERSITY	\$0	\$26	
Propagation patterns in microelectrode-recorded human interictal epileptiform discharges	93.853	UUTAH 10051440-01	1R21NS113031-01	UNIVERSITY OF UTAH	\$0	\$22,420	
A Randomized-Clinical Trial of a Communication Tool to Improve Access to Palliative Care for Patients with End-Stage Renal Disease	93.853	UWM 0000000108	1R56AG060991-01	UNIVERSITY OF WISCONSIN MADISON	\$0	\$9,905	
Routes to enhanced HIV neuropathogenesis through expression of subclinical levels of endogenous amyloid-beta	93.853	MSSM 0255-E021-4609	1R56NS119438-01	ICAHN SCHOOL OF MEDICINE AT MOUNT SINAI	\$0	\$203,751	
Unpacking the Importance of the Structural Injuries of MTBI	93.853	NYU 20-A0-00-1004792	1R56NS119767-01	NEW YORK UNIVERSITY	\$0	\$37,359	
Established Status Epilepticus Treatment Trial (ESSETT)	93.853	UV GB10094-14858/151272	1U01NS088031-01	UNIVERSITY OF VIRGINIA	\$0	\$-56	
Topiramate as a Disease Altering Therapy for Cryptogenic Sensory Peripheral Neuropathy (CSPN) (NN108) Study	93.853	MGH CU18-2043	1U01NS095388-01A1	MASSACHUSETTS GENERAL HOSPITAL	\$0	\$22,567	
Sleep for Stroke Management and Recovery Trial (Sleep SMART) Stroke Trial	93.853	UCINCI 011337-135721	1U01NS099043-01A1	UNIVERSITY OF CINCINNATI	\$0	\$11,030	
Clinical Study: Brain Oxygen Optimization in Severe TBI Phase -3 (BOOST-3) Trial CSPR # 002	93.853	UMICHG SUBK000009827	1U01NS099046-01A1	UNIVERSITY OF MICHIGAN	\$0	\$11,178	
High-Speed Volumetric imaging of neural activity throughout the livingbrain	93.853	UCB 00009591	1U01NS103489-01	UNIVERSITY OF CALIFORNIA, BERKELEY	\$0	\$228,232	
High density - cellular resolution multi-electrode arrays with spatially selective unidirectional and rotating fields for investigation of neuronal networks	93.853	UMINN N006207501	1U01NS103569-01	UNIVERSITY OF MINNESOTA	\$0	\$492,962	
Circuitry underlying response summation in mouse and primate: theory and experiment	93.853	SALK CU17-3850	1U01NS108683-01	SALK INSTITUTE FOR BIOLOGICAL STUDIES	\$0	\$180,946	
Mechanisms of Rapid, Flexible Cognitive Control in Human Prefrontal Cortex	93.853	BCMh 7000000870	1U01NS108923-01	BAYLOR COLLEGE OF MEDICINE--HOUSTON	\$0	\$53,546	
Optimization and dissemination of non-linear Acousto-Optic Lens microscopy for multiscale 3D two-photon imaging	93.853	UCL CU18-4210	1U01NS113273-01	UNIVERSITY COLLEGE LONDON	\$0	\$54,475	
Dynamic Neural Mechanisms of Audiovisual Speech Perception	93.853	BCMh 7000001115	1U01NS113339-01	BAYLOR COLLEGE OF MEDICINE--HOUSTON	\$0	\$14,401	
Study in Parkinson Disease of Exercise Phase 3 Clinical Trial: SPARX3	93.853	NU 60054977 COL	1U01NS113851-01	NORTHWESTERN UNIVERSITY	\$0	\$5,997	
Optimization, application and dissemination of high-speed hybrid multiphoton volumetric imaging technologies	93.853	RFU SUB00000144	1U01NS115530-01	ROCKEFELLER UNIVERSITY	\$0	\$198,630	
Towards a Complete Description of the Circuitry Underlying SharpWave-Mediated Memory Replay	93.853	SU CU17-0676	1U19NS104590-01	STANFORD UNIVERSITY	\$0	\$505,330	
Community Outreach and Engagement	93.853	3-312-0216124-66140L	1U24NS105535-01	RESEARCH TRIANGLE INSTITUTE	\$0	\$142,000	
Synergistic Interaction of amyloid-beta and alpha-synuclein in Lewy body Dementia - Project 3	93.853	MAOJF COL-259090	1U54NS110435-01A1	MAYO CLINIC JACKSONVILLE	\$0	\$560,912	
kHz-rate in Vivo Imaging of Neural Activity throughout the Living Brain	93.853	UCB 00009979	1UF1NS107696-01	UNIVERSITY OF CALIFORNIA, BERKELEY	\$0	\$75,195	
Shedding light on brain circuits mediating navigation of the odor plume in a natural environment	93.853	UCOL FY21.237.001	1UF1NS116241-01	UNIVERSITY OF COLORADO	\$0	\$53,177	
Risk Factors FOR Stroke and Cognitive Decline in a Tri-Ethnic Region	93.853	UMIAMI OS00000185	2R01NS029993-23A1	UNIVERSITY OF MIAMI	\$0	\$630,050	

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Maternal Outcomes and Neurodevelopmental Effects of Antiepileptic Drugs (MONEAD) II	93.853	SU 61865504-125439	2U01NS038455-16A1	STANFORD UNIVERSITY	\$0	\$3,693	
Vascular contributions to cognitive impairment and dementia and Stroke in a Bi-racial National Sample	93.853	UAB 000513792-005	2U01NS041588-17	UNIVERSITY OF ALABAMA AT BIRMINGHAM	\$0	\$127,136	
Growth and development of Striatum Cerebellum circuitry in subjects at risk for Huntington s Disease	93.853	UIO S01224-01	2U01NS055903-10	UNIVERSITY OF IOWA	\$0	\$436,154	
NSTN National Clinical Coordinating Center Administrative Agreement	93.853	UCINCI 011414-Adm-Marshall	2U01NS086872-06	UNIVERSITY OF CINCINNATI	\$0	\$1,662	
CReATe CAPTURE (Clinical Procedures To Support Research)	93.853	UMIAMI SPC-001425	2U54NS092091-06	UNIVERSITY OF MIAMI	\$0	\$16,806	
Carotid Revascularization Endarterectomy vs. Stent Trial	93.853	UMDNJ-99-705	3 R01 NS038384-05S1	RUTGERS, THE STATE UNIVERSITY OF NJ DEPT. OF RADIOLOGY	\$0	\$31,745	
Innate and Adaptive Immunity in Parkinson Disease - Clinical Research Core.	93.853	UAB 000519299-SP002-001	5P50NS108675-03	UNIVERSITY OF ALABAMA AT BIRMINGHAM	\$0	\$18,340	
Engineering stem cell therapies to understand and overcome glioblastoma adaption	93.853	UNC-CH 5109024	5R01NS099368-04	UNIVERSITY OF NORTH CAROLINA AT CHAPEL HILL	\$0	\$45,564	
ICH Recovery Grant	93.853	UCINCI 011078-010	5R01NS100417-02	UNIVERSITY OF CINCINNATI, COLLEGE OF MEDICINE	\$0	\$57,022	
Discovery and analysis of the C. elegans neuronal gene expression network (CENGEN)	93.853	YU GR101263 (CON-80002530)	5R01NS100547-03	YALE UNIVERSITY	\$0	\$236,682	
Androgen Receptors and Sex Differences in the Biological Clock	93.853	ORHSUN 1012987 COLUMBIA	5R01NS102962-04	OREGON HEALTH SCIENCES UNIVERSITY	\$0	\$60,032	
miR regulation of the neurovasculature function in health and disease	93.853	SCII 22199-208-490	5R01NS107344-03	SCINTILLON INSTITUTE	\$0	\$83,981	
Astrocytes-mediated regulation of Wnt/b-catenin pathway in ischemic brain repair	93.853	UPITT AWD000001584 (133896-1)	5R01NS110755-02	UNIVERSITY OF PITTSBURGH	\$0	\$10,907	
Lab-to-Marketplace: Commercialization of a stretchable microelectrode array	93.853	BEEDINC 2R44NS086118-03A1-CU	5R44NS086118-04	BIOMED STRETCH. ELASTIC DEVICES, LLC	\$0	\$146,188	
Carotid Revascularization and Medical Management for Asymptomatic Carotid Stenosis Trial (CREST-2) Trial (	93.853	MAOJF COU-224063-03	5U01NS080168-07	MAYO CLINIC JACKSONVILLE	\$0	\$24,759	
Optimizing flexible, active electrode arrays for chronic, large-scale recording and stimulation on the scale of 100,000 electrodes	93.853	DUKE A03-0340	5U01NS099697-03	DUKE UNIVERSITY	\$0	\$67,416	
Using Direct Brain Stimulation to Study Cognitive Electrophysiology	93.853	UPENN 577998	5U01NS113198-02	UNIVERSITY OF PENNSYLVANIA	\$0	\$167,911	
The Inherited Neuropathy Consortium (INC) RDCRC	93.853	UIO W001054741	5U54NS065712-10	UNIVERSITY OF IOWA	\$0	\$-9,990	
Targeting Kif11 to Treat Glioblastoma Invasion and Proliferation	93.853	MAOJF COL-232390	7R01NS073610-06	MAYO CLINIC JACKSONVILLE	\$0	\$90,719	
Clinical Pathological Study of Cognitive Impairment in Essential Tremor	93.853	UTSW GMO211107 PO0000002121A	7R01NS086736-07	UNIV. OF TEXAS SOUTHWESTERN MEDICAL CTR. AT DALLAS	\$0	\$243,027	
PATHOLOGOMICS - ESSENTIAL TREMOR IN THE BROADER CONTEXT OF NEURODEGENERATION	93.853	UTSW GMO210306 PO0000002284	7R01NS088257-07	UNIV. OF TEXAS SOUTHWESTERN MEDICAL CTR. AT DALLAS	\$0	\$60,779	
Identification and molecular characterization of somatic mutations in MCD	93.853	UNCCH 5116795	7R01NS094596-05	UNIVERSITY OF NORTH CAROLINA AT CHAPEL HILL	\$0	\$4,482	
Environmental Epidemiology of Essential Tremor	93.853	GMO210309 PO0000002288	7R01NS094607-06	UNIV. OF TEXAS SOUTHWESTERN MEDICAL CTR. AT DALLAS	\$0	\$27,333	
Mechanisms of Regulation of Progenitor Proliferation and Transformation	93.853	RFCUNY 42012-00-12	7R01NSO52738	RESEARCH FOUNDATION OF CITY UNIVERSITY OF NEW YORK	\$0	\$124,270	

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Autonomic and Imaging Biomarkers of SUDEP	93.853	UTEXHOUS 0014556B	7U01NS090407-06	UNIVERSITY OF TEXAS HOUSTON HEALTH SCIENCE CENTER	\$0	\$6,560	
EFFECTS OF AFQ056 ON LANGUAGE LEARNING IN YOUNG CHILDREN WITH FRAGILE X SYNDROME (FXS)	93.853	MGH CU18-1125	U01NS077423	MASSACHUSETTS GENERAL HOSPITAL	\$0	\$4,087	
Deep brain photoacoustic tomography at single-neuron resolution using arrays of photonic emitters and high-frequency ultrasound transducers	93.853	CALTECH 67C-1097568/S389076	U01NS099717	CALIFORNIA INSTITUTE OF TECHNOLOGY	\$0	\$277,992	
Wide Deployment of Massively Multiplexed Nanosystems for Brain Activity Mapping	93.853	CALTECH S389576	U01NS099726	CALIFORNIA INSTITUTE OF TECHNOLOGY	\$0	\$308,885	
Dynamic Neural Mechanisms of Audiovisual Speech Perception	93.853	BCMH CU21-1024	U01NS113339	UNIVERSITY OF PENNSYLVANIA	\$0	\$378,996	
Project 2 - Neural Basis of Motor Pattern Loops	93.853	CIT 21B-1098370	U19NS104655	CALIFORNIA INSTITUTE OF TECHNOLOGY	\$132,468	\$442,184	
					\$132,468	\$8,063,607	
<b>Allergy and Infectious Diseases Research</b>							
IL-33 Blockade as a Novel Therapeutic for T-cell Mediated Hypercytokinemia Syndromes	93.855	CHPHI 3200280521	1R01AI121250-01A1	CHILDREN'S HOSPITAL OF PHILADELPHIA	\$0	\$38,136	
Strategies for Tuberculosis Control in Prisons	93.855	SU 61485127-124916	1R01AI13005801	STANFORD UNIVERSITY	\$0	\$13,176	
Heme utilization by Mycobacterium tuberculosis	93.855	UAB 000521324-SC001	1R01AI137338-01A1	UNIVERSITY OF ALABAMA AT BIRMINGHAM	\$0	\$92,401	
The Role of Casual Contact and Migration in XDR TB Transmission in South Africa: a Geospatial, Genomic and Social Network study	93.855	EU T937299	1R01AI138646-01	EMORY UNIVERSITY	\$0	\$30,337	
New tools for antimalarial target identification	93.855	UCT30846	1R01AI143521-01	UNIVERSITY OF CAPE TOWN	\$0	\$24,334	
Emergence of bedaquiline and clofazimine resistance after interruption of drug-resistance TB therapy in high HIV prevalence setting	93.855	AECM 311663	1R01AL145679-01A1	ALBERT EINSTEIN COLLEGE OF MEDICINEESHIVA UNIVERSITY	\$0	\$16,206	
Differentially culturable tubercle Bacteria: The missing link in TB Transmission	93.855	WHC D1811140-04	1R01AL147349-01	WITS HEALTH CONSORTIUM	\$0	\$67,237	
Innovative contact tracing strategies for detecting TB in mobile rural and urban South African populations	93.855	2004483467	1R01AL147681-01	JOHNS HOPKINS UNIVERSITY	\$0	\$5,331	
HIV s Effects on Breast Cancer Treatment and Outcomes in South Africa	93.855	WHCL D1404280	1R01CA192627-01	WITS HEALTH CONSORTIUM	\$0	\$206	
Automated Visual Evaluation for Cervical Cancer Screening in HIV positive Women	93.855	UCT00028959	1R01CA250011-01	UNIVERSITY OF CAPE TOWN	\$0	\$108,920	
Novel predictors of survival among breast cancer patients with/without HIV in South Africa	93.855	WHC 2007170-01	1R01CA250012-01	WITS HEALTH CONSORTIUM	\$0	\$78,309	
Parasite-specific proteasome inhibitors to combat multi-drug resistant malaria	93.855	SU 61424825-123798	1R21AI127581-01	STANFORD UNIVERSITY	\$0	\$144,577	
Rhinovirus respiratory infection and sphingolipid metabolism	93.855	CUMC 182171	1R21AI140724-01	WEILL (JOAN AND SANFORD I.) MED. COLLEGE OF CORNELL UNIV.	\$0	\$32,237	
Identifying Men s Preferences for a Male Centered TB Care Intervention	93.855	FPD CU19-4110	1R21AI148852-01	FOUNDATION FOR PROFESSIONAL DEVELOPMENT	\$0	\$14,420	
Tissue-engineered lymph node stroma to study peripheral tolerance in autoimmune diabetes	93.855	UMIAMI OS00000474	1R56AI151217-01A1	UNIVERSITY OF MIAMI	\$0	\$54,026	
Hope in Action: A Clinical Trial of HIV-to-HIV Deceased Donor Kidney Transplantation	93.855	JHU 2003649381	1U01AI134591-01	JOHNS HOPKINS UNIVERSITY	\$0	\$3,547	
Targeting Inflammation and Alloimmunity in Heart Transplant Recipients with Tocilizumab, (Study)	93.855	MGH 232560	1U01AI136816-01	MASSACHUSETTS GENERAL HOSPITAL	\$0	\$1,597	

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HOPE in Action: A clinical trial of HIV-to-HIV Liver Transplantation	93.855	JH 2004360332	1U01AI138897-01	JOHNS HOPKINS UNIVERSITY	\$0	\$272	
Rapid Low-Cost Paper-based Radiation Biodosimetry that reveals individuals organ injuries	93.855	ASU B00000501	1U01AI148319-01	ARIZONA STATE UNIVERSITY	\$0	\$116,953	
MHC & KIR Sequencing and Association Analyses in the iGeneTrain Studies Effort	93.855	UPENN 580695	1U01AI152960-01	UNIVERSITY OF PENNSYLVANIA	\$0	\$20,454	
Molecular Mechanisms of Adjuvant Triplet Combinations	93.855	UCHICA AWD101938 (SUB00000486)	1U01AI160418-01	UNIVERSITY OF CHICAGO	\$0	\$75,388	
Congenital and Perinatal Infections Rare Diseases Clinical Research Consortium (RDCRC)	93.855	UAB 000522211-029	1U54AI150225-01	UNIVERSITY OF ALABAMA AT BIRMINGHAM	\$0	\$2,337	
INNER CITY ASTHMA CONSORTIUM (ICAC3): CORE	93.855	UWIS 0000000796	1UM1AI114271-01	UNIVERSITY OF WISCONSIN	\$0	\$999,035	
Function of antimalarial drug resistance proteins	93.855	GU 411310	2R01AI056312-10A1	GEORGETOWN UNIVERSITY	\$0	\$53,317	
Monochromatic 222 nm UV light: Development of safe, cost-effective technology for the efficient reduction of bacterial and viral infection and transmission	93.855	EPINIH SUB19-01	2R42AI125006-2A1	EDEN PARK ILLUMINATION	\$0	\$202,563	
Central Africa International Epidemiology Database to Evaluate AIDS (CA-leDEA)	93.855	AECM 31614BJ	2U01AI096299-07	ALBERT EINSTEIN COLLEGE OF MEDICINEESHIVA UNIVERSITY	\$0	\$105,326	
East Africa international Epidemiologic Database to Evaluate AIDS (leDEA) Regional Consortium	93.855	8073 COL	2U01AI09629911-11	INDIANA UNIVERSITY	\$0	\$51,185	
Vaccine induced immunity in the young and aged	93.855	EMORYU A335572	2U19AI057266-16	EMORY UNIVERSITY	\$0	\$102,887	
ALE09 - A Phase 2, Double-blind, Randomized, Placebo-controlled Multicenter Study to Evaluate Efficacy, Safety, and Tolerability of JBT-101 in Systemic Lupus Erythematosus	93.855	EMORYU A243204	2U19AI110483-06	EMORY UNIVERSITY	\$0	\$10,891	
HVTN Scientific Leadership (Hammer)	93.855	FHCRC 0001011814	2UM1AI068614-08	HUTCHINSON (FRED) CANCER RESEARCH CENTER	\$0	\$3,288	
CAPRISA Clinical Trials Units for AIDS/Tuberculosis Prevention and Treatment	93.855	CAPRISA1 2002 024027 08	2UM1AI069469-08	CENTRE FOR THE AIDS PROGRAMME OFRESEARCH IN SOUTH AFRICA	\$0	\$172,027	
COVID-19-Immune Tolerance Network	93.855	BRI FY21ITN440	2UM1AI109565-08	BENAROYA RESEARCH INSTITUTE	\$0	\$15,025	
Units for HIV/AIDS Clinical Trials Network	93.855	CAPRISA UM1AI069469	2UM1I069469-15	CENTRE FOR THE AIDS PROGRAMME OFRESEARCH IN SOUTH AFRICA	\$0	\$148,723	
HVTN Protocol Funding	93.855	FHCRC 0001062694	2UMAI068614-08	HUTCHINSON (FRED) CANCER RESEARCH CENTER	\$0	\$52,910	
Dynamics and Tuning of the MHC II Presented Peptidome	93.855	WCMC 203313	3R01AI37198-04S1	WEILL (JOAN AND SANFORD I.) MED. COLLEGE OF CORNELL UNIV.	\$0	\$44,231	
COVID-19-COVID-19 Prevention Network (CoVPN) Site Preparation	93.855	FHCRC 0001033117	3UM1AI068614-14	HUTCHINSON (FRED) CANCER RESEARCH CENTER	\$0	\$402,323	
COVID-19-CoVPN 3002 Protocol Funding (PF) - New York-Columbia P&S Clinical Research Site	93.855	FHCRC 0001035530	3UM1AI068614-14S1	HUTCHINSON (FRED) CANCER RESEARCH CENTER	\$0	\$896,162	
COVID-19-A randomized controlled study to assess SARS CoV-2 infection, viral shedding, and subsequent potenti	93.855	HCRC 0001064473	3UM1AI068614-15	HUTCHINSON (FRED) CANCER RESEARCH CENTER	\$0	\$36,108	
A randomized controlled study to assess SARS CoV-2 infection, viral shedding, and subsequent potential transmission in university students immunized with Moderna COVID-19 Vaccine	93.855	HCRC 0001064446	3UM1AI068614-15S1	HUTCHINSON (FRED) CANCER RESEARCH CENTER	\$0	\$32,536	
COVID-19-CoVPN Vaccine Site Preparation	93.855	PO20002667	3UM1AI06861914S1	FHI DEVELOPMENT 360 LLC	\$123,403	\$1,711,920	
COVID-19-ADAPT Out COVID: ACTIV-2/ACTG A5401	93.855	UCLA CRS 30329 CU 30606 A5401	3UM1AI068636-14S2	UNIVERSITY OF CALIFORNIA, LOS ANGELES	\$0	\$51,957	

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COVID-19-Human epidemiology and response to SARS-CoV-2 (HER	93.855	UWM 0000000642	3UM1AI114271-06S1	UNIVERSITY OF WISCONSIN MADISON	\$0	\$34,669	
COVID-19-Human epidemiology and response to SARS-CoV-2 (HEROS)	93.855	UWM 0000000886	3UM1AI114271-07S1	UNIVERSITY OF WISCONSIN MADISON	\$0	\$94,845	
Antimicrobial Resistant E. Coli before and after California Senate Bill 27 (ARES): a natural experiment	93.855	KFDNI RNG113791-Columbia	5R01AI30066-04	KAISER FOUNDATION RESEARCH INSTITUTE--DIVISION OF RESEARCH	\$0	\$65,565	
Optimizing Industrial-Scale GMP Processes for Recovering and Banking Deceased Donor Bone Marrow	93.855	OSSIIUM OOS030382-CU	5R44AI129444-03	OSSIIUM HEALTH, INC.	\$0	\$84,308	
School Inner-City Asthma Intervention Study	93.855	CHB GENFD0001578885	5U01AI110397-02	CHILDREN'S HOSPITAL BOSTON	\$0	\$521,563	
Dengue Human Immunology Project Consortium (DHIPC)	93.855	ISMM 0255-C160-4609	5U19AI118610-03	ICAHN SCHOOL OF MEDICINE AT MOUNT SINAI	\$0	\$54,818	
HVTN 703/ HPTN 081 Site Readiness	93.855	FHCRC 0000888693	5UM1AI068614-09	HUTCHINSON (FRED) CANCER RESEARCH CENTER	\$0	\$-1,312	
International Maternal Pediatric Adolescent AIDS Clinical Trials Network	93.855	JHC 2004512905	5UM1AI068632-14	JOHNS HOPKINS UNIVERSITY	\$0	\$56,864	
Immune Tolerance Network	93.855	BRI FY16ITN109	5UM1AI109565-02	BENAROYA RESEARCH INSTITUTE	\$0	\$37,156	
Immune Tolerance Network Efficacy of Belimumab and Rituximab Compared to Rituximab Alone for the Treatment of Primary Membranous Nephropathy	93.855	FY21ITN326	5UM1AI109565-06	BENAROYA RESEARCH INSTITUTE	\$0	\$23,233	
The molecular basis of the carbapenem resistance epidemic	93.855	HMH G10063-19028	7R01AI090155-10	HACKENSACK MERIDIAN HEALTH	\$0	\$149,793	
Optimizing clinical use of Polymyxin B: Teaching old drug to treat superbugs	93.855	UMICHG 3004415914	7R01AI119446-03	UNIVERSITY OF MICHIGAN	\$0	\$7,615	
COVID-19-Genetic and ecological determinants of coronavirus recombination	93.855	UCD A21-2861-S001	7R01AI149693-02	UNIVERSITY OF CALIFORNIA, DAVIS	\$0	\$58,357	
ACTG Protocol Funding - Core Funding	93.855	UCLA CU18-2702	7UM1AI068636-13	UNIVERSITY OF CALIFORNIA, LOS ANGELES	\$0	\$70,978	
A dual-beta-lactam strategy for treating multi drug resistant M abscessus	93.855	HMH 19022	R01AI141805	HACKENSACK MERIDIAN HEALTH	\$0	\$21,441	
Development of a novel broad-spectrum inhibitor of non-polio enteroviruses associated with acute flaccid myelitis	93.855	MBX CU19-2734	R43AI150001-01A1	MICROBIOTIX INC	\$0	\$80,919	
Composition and structure of antibody receptors at the surface of primary human cells during immune activation	93.855	UGA SUB00002365	U01AL148114	UNIVERSITY OF GEORGIA	\$0	\$86,625	
COVID-19-HPTN Unanticipated Clinical Trials costs	93.855	FHID P020002431	UM1 AI068619	FHI DEVELOPMENT 360 LLC	\$110,512	\$698,444	
HPTN 081/085 Protocol Funding - Implementation - Centralized Laboratory and Other Operational Support	93.855	FHID PO16003322	UM1 AIO68619	FHI DEVELOPMENT 360 LLC	\$0	\$-1,554	
COVID-19-CoVPN 3002: Astrazeneca Vaccine	93.855	FHID PO20002897	UM1AI068619	FHI DEVELOPMENT 360 LLC	\$1,422,299	\$5,058,651	
HVTN 405/HPTN 1901 Harlem	93.855	FHID PO20002147	UMI AI068619	FAMILY HEALTH INTERNATIONAL	\$0	\$69,562	
					<b>\$1,656,214</b>	<b>\$13,305,355</b>	
<b>National Cancer Institute/NIH/DHHS</b>							
The Role of RHOA in Diffuse Gastric Cancer	93.856	DFCI 1203001	1R01CA224428-01	DANA-FARBER CANCER INSTITUTE	\$0	\$169,913	
					<b>\$0</b>	<b>\$169,913</b>	
<b>Biomedical Research and Research Training</b>							

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Regulatory modifiers of coding variant penetrance	93.859	NYGC R01GM122924-COL-4	1R01GM122924-01	NEW YORK GENOME CENTER	\$0	\$43,589	
Efficient Statistical Learning Methods for Personalized Medicine Using Large Scale Biomedical Data.	93.859	UNC-CH 5110020	1R01GM124104-01A1	UNIVERSITY OF NORTH CAROLINA AT CHAPEL HILL	\$0	\$91,130	
Statistical Methods for Single-Cell Transcriptomics	93.859	UPENN 572782	1R01GM125301-01	UNIVERSITY OF PENNSYLVANIA	\$0	\$10,110	
The mechanism through which mRNA translation enhancer elements drive cap-independent translation	93.859	RFCUNY CM00002680-00	1R01GM128239-01A1	RESEARCH FOUNDATION OF CITY UNIVERSITY OF NEW YORK	\$0	\$120,143	
The role of collisions in rescuing stalled ribosomes in bacteria	93.859	JH 2005039040	1R01GM136960-01A1	JOHNS HOPKINS UNIVERSITY	\$0	\$8,480	
Kyaterekera Project: A Combination Intervention Addressing Sexual Risk-Taking Behaviors Among Vulnerable Women in Uganda	93.859	WASHU WU-19-203-MOD-1	1R01MH116768-01A1	WASHINGTON UNIVERSITY	\$0	\$62,080	
MAVEN: Developing Diverse Senior Scientists Leaders	93.859	FIMR AWD00001308-CU	1R25GM139082-01	FEINSTEIN INSTITUTE FOR MEDICAL RESEARCH	\$0	\$12,692	
Catalytic Platforms Using Aromatic Ions and Other Charged Species	93.859	CU 86380-11176	1R35GM127135-01	CORNELL UNIVERSITY	\$0	\$37,112	
Development and commercialization of a Sample Preparation System for Time-Resolved Cryo-Electron Microscopy	93.859	HS CU19-4008	1R42GM139495-01	HUMMINGBIRD SCIENTIFIC	\$0	\$75,639	
Structure-Based Antagonism of HIV1 Envelope Function in Cell Entry	93.859	DREXEL 910001-Columbia	2P01GM056550-22	DREXEL UNIVERSITY	\$0	\$288,470	
Modulation of KCNQ1 Channel Activity	93.859	UMIAMI OS00000504	2R01GM109762-05	UNIVERSITY OF MIAMI	\$0	\$229,867	
COVID-19-Efficient Statistical Learning Methods for Personalized Medicine Using Large Scale Biomedical Data.	93.859	UNC 5118007	3R01GM124104-03S1	UNIVERSITY OF NORTH CAROLINA AT CHAPEL HILL	\$0	\$92,121	
Center on Macromolecular Dynamics by NMR Spectroscopy	93.859	NYSBC G00914-01	5P41GM118302-02	NEW YORK STRUCTURAL BIOLOGY CENTER	\$0	\$95,170	
FEBio- Finite Elements for Biomechanics and Biophy	93.859	UTAH 10026950-COLUMBIA	5R01GM083925-12	UNIVERSITY OF UTAH	\$0	\$47,101	
FEBio - Finite Elements for Biomechanics and Biophysics	93.859	UTAH 10054274-Columbia	5R01GM083925-14	UNIVERSITY OF UTAH	\$0	\$112,435	
New Methods for the Synthesis of Biologically Active Peroxides	93.859	NYU F0501-01	5R01GM118730-04	NEW YORK UNIVERSITY	\$0	\$46,325	
Methods for integrated analysis of multi-level omics data	93.859	MGH 235245	7R01GM127862-03	MASSACHUSETTS GENERAL HOSPITAL	\$0	\$28,343	
UNDERSTANDING THE BIOLOGICAL FUNCTION OF MCM10	93.859	UMINN N005495702	R01GM074917	UNIVERSITY OF MINNESOTA	\$0	\$2,998	
A minimally invasive synthetic biology-driven approach for natural products discovery	93.859	RFU CU14-2989	U01GM110714-01A1	ROCKEFELLER UNIVERSITY	\$0	\$-2	
The role of the nuclear pore-associated Aladin protein in RNA export	93.859	UMICH SUBK00011359	U54 AI150470-08	UNIVERSITY OF MICHIGAN	\$0	\$173,617	
					<b>\$0</b>	<b>\$1,577,420</b>	
<b>Child Health and Human Development Extramural Research</b>							
Developmental Mechanisms of Trachea-Esophageal Birth Defects,project 1	93.865	CHMCO 140554	1P01HD093363-01	CINCINNATI CHILDREN'S MEDICAL CENTER	\$0	\$379,717	
Pediatric HIV/AIDS Cohort Study (PHACS): 2020	93.865	HARVARD 117267-0108-5115581	1P01HD103113-01	HARVARD UNIVERSITY	\$0	\$6,335	
Delivery mode, environment and the gut microbiome: influence on childhood body size	93.865	HFHS 87645	1R01HD082147-01A1	HENRY FORD HEALTH SYSTEM	\$0	\$15,389	

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Medical Optimization & Management of Pregnancies with Overt Type 2 Diabetes (MOMPOD)	93.865	UNC 5106225	1R01HD086139-01A1	UNIVERSITY OF NORTH CAROLINA AT CHAPEL HILL	\$0	\$12,786	
Impact of Combined Use of Depot Medroxyprogesterone Acetate Contraception and Tenofovir PreExposure Prophylaxis on Bone Health (Depo-PrEP)	93.865	UWSC9850	1R01HD089843-01A1	UNIVERSITY OF WASHINGTON/SEATTLE WASHINGTON	\$0	\$18,701	
WeCare	93.865	AAP CU18-0762	1R01HD090191-01	AMERICAN ACADEMY OF PEDIATRICS	\$0	\$19,063	
Sexual-Minority Health	93.865	UTAH 2C10048964	1R01HD0914505-01	UNIVERSITY OF UTAH	\$0	\$19,872	
FANMI: A community-based cohort model for HIV adolescent care in Haiti	93.865	204412	1R01HD091935-01A1	WEILL (JOAN AND SANFORD I.) MED. COLLEGE OF CORNELL UNIV.	\$0	\$40,542	
Using Smart Phones to Understand the Link between Social and Geographical Context and HIV Risk Behavior Among MSM	93.865	YU GR101489 (CON-80001024	1R01HD092185-01	YALE UNIVERSITY	\$0	\$18,015	
Socioeconomic Disparities in Cognitive & Neural Development in the First 3 Years	93.865	TC 512158-01	1R01HD093707-01	TEACHERS COLLEGE COLUMBIA UNIVERSITY	\$0	\$48,815	
Place matters - Adaptable Solutions to Violence at the Community Level	93.865	TUL-HSC-557611-20/21	1R01HD095609-01	TULANE UNIVERSITY	\$0	\$42,919	
Burden and Risk of Neurological and Cognitive Impairment in Pediatric Sickle Cell Anemia in Uganda (BRAIN SAFE II)	93.865	GHU CU18-3693	1R01HD096559-01A1	GLOBAL HEALTH UGANDA	\$0	\$128,837	
The NICU Antibiotics and Outcomes (NANO) Trial	93.865	UPITT AWD00001006 (133613-2 )	1R01HD097578-01A1	UNIVERSITY OF PITTSBURGH	\$0	\$34,160	
Community violence and disparities in maternal and infant health: effects and mechanisms	93.865	UC 00010352	1R01HD098138-01A1	UNIVERSITY OF CALIFORNIA, BERKELEY	\$0	\$10,876	
Extracellular Vesicles as Non-Invasive Predictors of Antidepressant Outcomes in Pediatric Anxiety	93.865	UCINCM 012344-003	1R01HD098757-01	UNIVERSITY OF CINCINNATI, COLLEGE OF MEDICINE	\$0	\$12,999	
Women s HIV Cohort Study: HIV infection and treatment among women of reproductive age	93.865	UM SPC-001401	1R01HD101352-01	UNIVERSITY OF MIAMI	\$0	\$26,993	
Neuro-behavioral Disorders after Appendectomy in Childhood	93.865	GRT-00000289	1R01HD101415-01	CHILDREN'S HOSPITAL OF PHILADELPHIA	\$0	\$58,648	
Using EV-microRNAs to identify a non-invasive biomarker of uterine fibroid outcomes	93.865	GWU 19-M30	1R21HD096248-01A1	GEORGE WASHINGTON UNIVERSITY	\$0	\$50,023	
The Role of Hypothalamic Pituitary-Adrenal Axis Dysregulation in Preterm Birth	93.865	HARVARD 117342-5115037	1R21HD102822-01	HARVARD UNIVERSITY	\$0	\$28,066	
Precision Gait Retraining for Children with Cerebral Palsy	93.865	ALTEC AP-082319-A	1R43HD100209-01	ALTEC INC	\$0	\$24,864	
The Alzheimer s Biomarker Consortium Down Syndrome (ABC-DS)	93.865	UPITT AWD00002130 (134286-3)	1U19AG068054-01	UNIVERSITY OF PITTSBURGH	\$0	\$389,207	
Novel retinoic acid receptor alphaselective antagonists--Project 1	93.865	UMINN P006822801	1U54HD093540-01	UNIVERSITY OF MINNESOTA	\$0	\$313,990	
Fragile Families and the Transition to Adulthood	93.865	PU SUB0000361	2R01HD036916-16A1	PRINCETON UNIVERSITY	\$0	\$46,038	
Predictive Informatics Monitoring in the Neonatal Intensive Care Unit	93.865	UV GB10607-PO#2230352	2R01HD072071-04A1	UNIVERSITY OF VIRGINIA	\$0	\$146,228	
A multi-modality, multi-scale approach to understanding parturition	93.865	UWIS 865K196	2R01HD072077-06	UNIVERSITY OF WISCONSIN MADISON	\$0	\$271,486	
Subi+Adherence-R2:Examining the longitudinal HIV treatment adherence among youth living with HIV (YLHIV) transitioning into young adulthood	93.865	WUSOM WU-21-267	2R01HD074949-07	WASHINGTON UNIVERSITY SCHOOL OF MEDICINE/IN ST. LOUIS	\$0	\$19,340	
Early life adversities and the emergence of risk and resilience: A longitudinal study of child development	93.865	UNC 5117284	2R01HD075875-07A1	UNIVERSITY OF NORTH CAROLINA AT CHAPEL HILL	\$0	\$16,011	

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Innovation across the spectrum of pediatric HIV care	93.865	MGH 235202	2R01HD079214-06A1	MASSACHUSETTS GENERAL HOSPITAL	\$0	\$16,717	
Mobile Augmented Screening (MAS) Tool to Increase Adolescent HIV Testing and Linkage to Care	93.865	DHE CU19-0372	2R42HD088325-02A1	DIGITAL HEALTH EMPOWERMENT	\$0	\$17,443	
The Maternal Fetal Medicine Unit Network	93.865	GWU CU14-1338	2U10HD036801-16	GEORGE WASHINGTON UNIVERSITY	\$392,600	\$1,411,800	
COVID-19-Fragile Families and the Transition to Adulthood	93.865	PU SUB0000462	3R01HD036916-17S1	PRINCETON UNIVERSITY	\$0	\$7,062	
Gene Mutation and Rescue in Diaphragmatic Hernia	93.865	MGH 230914	5P01HD068250-08	MASSACHUSETTS GENERAL HOSPITAL	\$0	\$177,882	
Parenting and Men s Health: The Utility of the fathers and Sons Program	93.865	UMICHG 3004148036	5R01HD084526-02	UNIVERSITY OF MICHIGAN	\$0	\$-1	
Molecular mechanisms of infection-mediated cervical ripening	93.865	UTSW GMO 160410	5R01HD086495-05	UNIV. OF TEXAS SOUTHWESTERN MEDICAL CTR. AT DALLAS	\$0	\$55,525	
Use of Novel Mobile Technology to Screen Sexual Partners for HIV and STIS	93.865	RFMH PO#128918	5R01HD088156-04	RESEARCH FOUNDATION FOR MENTAL HYGIENEINC	\$0	\$9,002	
Mechanisms by which steroid hormones modulate cervical extracellular matrix structure and function during pregnancy and provide therapeutic protection against preterm birth	93.865	UTSW GMO 170904 PO# 0000939B	5R01HD088481-05	UNIV. OF TEXAS SOUTHWESTERN MEDICAL CTR. AT DALLAS	\$0	\$109,309	
Building Research Capacity for Firearm Among Children	93.865	SUBK00011262	5R24HD087149-02	UNIVERSITY OF MICHIGAN	\$0	\$19,808	
The Pediatric HIV/AIDS Cohort Study (PHACS)	93.865	TUL-HSC-557530-19/20	5U01HD052104-14	TULANE UNIVERSITY	\$0	\$9,952	
PSDP Fellowship	93.865	DUKEU 3021482	7K12HD000850-35	DUKE UNIVERSITY MEDICAL CENTER	\$0	\$8,280	
Pediatric Scientist Development Program	93.865	WCWC 212826-7	7K12HD000850-37	WEILL (JOAN AND SANFORD I.) MED. COLLEGE OF CORNELL UNIV.	\$0	\$19,187	
Innovative PK/PD Approaches to Optimize TBM Treatment in Children (PATCH Study)	93.865	JHU 2002824937	R01HD074944-02	JOHNS HOPKINS UNIVERSITY	\$0	\$16,697	
Protection Against Cognitive Decline in MS: Longitudinal Investigation of Reserve	93.865	MSSM 0255-1471-4609	R01HD082176	ICAHN SCHOOL OF MEDICINE AT MOUNT SINAI	\$0	\$126,150	
					\$392,600	\$4,204,733	
<b>Aging Research</b>							
Royal Center for Personalized Trials: Physical Activity Promotion to Foster Healthy Aging	93.866	AWD00001307-CU	1P30AG063786-01	FEINSTEIN INSTITUTE FOR MEDICAL RESEARCH	\$0	\$86,256	
Re-visiting Methods for MCI Diagnosis to Improve Biomarker and Trial Findings	93.866	UCSD 73333288 (S9001382)	1R01AG049810-01A1	UNIVERSITY OF CALIFORNIA, SAN DIEGO	\$0	\$115,648	
Novel Cognitive and Functional Measures for Alzheimer s Disease Prevention Trials	93.866	SRFMH 139964	1R01AG051346-01A1	RESEARCH FOUNDATION FOR MENTAL HYGIENEINC	\$0	\$215,689	
Cognitive Function, Alzheimer s Disease and Related Disorders in the HAALSI Cohort	93.866	HARVARD 116362-5111693	1R01AG054066-01A1	HARVARD UNIVERSITY	\$0	\$36,093	
Slow wave sleep (SWS) and the effect of African ancestry on amyloid burden, a longitudinal study	93.866	NYU 17-A1-00-007453-01	1R01AG056531-01A1	NEW YORK UNIVERSITY	\$0	\$34,956	
Understanding cellular and transcriptional regulatory changes in human aging	93.866	AECM 311426	1R01AG057422-01A1	ALBERT EINSTEIN COLLEGE OF MEDICINEESHIVA UNIVERSITY	\$0	\$39,546	
Identifying the molecular systems, networks, and key molecules that underlie cognitive resilience	93.866	RUMC 17021705-Sub02	1R01AG057911-01	RUSH UNIVERSITY MEDICAL CENTER	\$0	\$72,297	
The Action for Health in Diabetes ADRD study (LookAHEAD-MIND)	93.866	WFUHS 162-100710-552702	1R01AG058571-01	WAKE FOREST UNIVERSITY	\$0	\$125,945	

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Child Maltreatment and Risk for Mild Cognitive Impairment and Alzheimer s Disease	93.866	RFCUNY CM00001842-00	1R01AG05863-01A	RESEARCH FOUNDATION OF CITY UNIVERSITY OF NEW YORK	\$0	\$100,425	
Stress, Epigenetics, and Aging	93.866	EMORYU A008616	1R01AG058704-01	EMORY UNIVERSITY	\$0	\$153,811	
Educational and Early Life Predictors of Mild Cognitive Impairment: New Evidence about Mediators and Moderators from High School & Beyond	93.866	UMINN H007058802	1R01AG058719-01A1	UNIVERSITY OF MINNESOTA	\$0	\$140,659	
Subclinical Vascular Contributions to Alzheimer s Disease: The Multi Ethnic Study of Atherosclerosis (MESA) Multisite Study of AD	93.866	WFUHS 551083	1R01AG058969-01	WAKE FOREST UNIVERSITY	\$0	\$525,593	
Predicting post-transplant mortality and global functional health based on pre-transplant functional status in liver transplantation	93.866	UCSF 10865sc	1R01AG059183-01	UNIVERSITY OF CALIFORNIA SAN FRANCISCO	\$0	\$40,000	
Assessing the interactive effect of lifetime and old age cognitive engagement on cognitive decline and dementia: cognitive reserve versus use it or lose it	93.866	UMICHG SUBK00011643	1R01AG062447-01A1	UNIVERSITY OF MICHIGAN	\$0	\$37,553	
Postoperative Delirium and Alzheimer s Disease Related Dementias	93.866	BWH 234365	1R01AG062509-01	BRIGHAM AND WOMEN'S HOSPITAL	\$0	\$97,195	
UCD A20-0610-S002 The Neuropathologic Landscape of Alzheimer s Disease Hispanic decedents	93.866	UCD A20-0610-S002	1R01AG062517-01A1	UNIVERSITY OF CALIFORNIA, DAVIS	\$0	\$59,728	
Dissecting the genomic etiology of non-Mendelian early-onset Alzheimer disease and related phenotypes	93.866	UMIAMI SPC-001236	1R01AG064614-01	UNIVERSITY OF MIAMI	\$0	\$148,892	
Beta1-selective blockade for prevention of postmenopausal bone loss: A randomized controlled trial	93.866	MAORO THE-277060	1R01AG065154-01A1	MAYO CLINIC -- ROCHESTER	\$0	\$186,592	
Statistical method for neural mechanism mediating and moderating cognitive system in Alzheimer s disease and aging research.	93.866	RFMH 27412	1R01AG065278-01A1	RESEARCH FOUNDATION FOR MENTAL HYGIENEINC	\$0	\$10,239	
Best Case/Worst Case: A Multisite Randomized Clinical Trial of Scenario Planning for Patients with End-Stage Kidney Disease	93.866	UWIS 000000686	1R01AG065365-01	UNIVERSITY OF WISCONSIN	\$0	\$3,564	
Spontaneous Speech and Health Disparities in Risk of Cognitive Decline: WHICAP Offspring Ancillary Study	93.866	KENT 403056-COL	1R01AG065432-01	KENT STATE UNIVERSITY	\$0	\$95,475	
National Cohort Studies of Alzheimer s Disease, Related Dementias and Air Pollution	93.866	HARVARD 112576-5113206	1R01AG066793-01	HARVARD UNIVERSITY	\$0	\$25,203	
Metabolic regulation of human DNA methylation clocks	93.866	RFMH 27496	1R01AG066828-01	RESEARCH FOUNDATION FOR MENTAL HYGIENEINC	\$0	\$32,433	
24-hour activity cycles to optimize cognitive resilience to Alzheimer s disease in African Americans: the Jackson Heart Study	93.866	UAB SC002-Pal	1R01AG067513-01	UNIVERSITY OF ALABAMA AT BIRMINGHAM	\$0	\$46,348	
Chaperome networks in Alzheimer s Disease	93.866	MSKCC BD528083	1R01AG067598-01A1	MEMORIAL SLOAN-KETTERING CANCER CENTER	\$0	\$14,056	
Social Convoys, Cognitive Reserve and Resilience, and Risk for Alzheimer s Disease and Related Dementias	93.866	RFMH 27627	1R01AG069041-01	RESEARCH FOUNDATION FOR MENTAL HYGIENEINC	\$0	\$47,449	
Social Convoys, Cognitive Reserve and Resilience, and Risk for Alzheimer s Disease and Related Dementias	93.866	RFMH 27627	1R01AG069041-01	RESEARCH FOUNDATION FOR MENTAL HYGIENEINC	\$0	\$13,328	
PP2A Dysregulation in the Pathogenesis of alphaSynucleinopathies	93.866	RUTGERS 0131	1R01NS101134-01	RUTGERS, THE STATE UNIVERSITY OF NJ DEPT. OF RADIOLOGY	\$0	\$23,126	
Sensation and Psychiatry: Linking Age-Related Hearing Loss to LateLife Depression and Cognitive Decline	93.866	RFMH 138639	1R21AG059130-01	RESEARCH FOUNDATION FOR MENTAL HYGIENEINC	\$0	\$6,851	
Acute Effects of Cannabis on Cognition and Mobility in Older HIV-Infected and Uninfected Women	93.866	AECM 311343	1R21AG059505-01	ALBERT EINSTEIN COLLEGE OF MEDICINEESHIVA UNIVERSITY	\$0	\$34,289	
Nurses documentation of patient diagnoses, symptoms and interventions for home care patients with Alzheimer s Disease and related dementias: A natural language processing study	93.866	VNSNY 4627C	1R21AG065753-01A1	VISITING NURSE SERVICE OF NEW YORK	\$0	\$19,968	
Relationship between CNS Tau burden and perioperative neurocognitive disorder	93.866	UOP 580814	1R21AG067114-01	UNIVERSITY OF PENNSYLVANIA	\$0	\$40,782	

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Screening to Improve Survival in AL Amyloidosis	93.866	TMC 5019000-SERV	1R21AG070502-01	TUFTS MEDICAL CENTER, INC.	\$0	\$58,559	
Development of a stress kinase inhibitor therapeutic candidate for Alzheimer s Disease and related dementia	93.866	NKT071388001	1R44 AG071388-01	NEUROKINE THERAPEUTICS	\$0	\$76,172	
Social convoys, cognitive reserve, and resilience across the lifespan	93.866	RFMH 140250	1R56AG059643-01	RESEARCH FOUNDATION FOR MENTAL HYGIENEINC	\$0	\$13,321	
Cell type influence on exosome signaling and early pathologic signatures in Alzheimers disease	93.866	SCRIPPS 5-54377	1R56AG062618-01A1	SCRIPPS RESEARCH INSTITUTE	\$0	\$300,077	
Hippocampal circuit plasticity in human normal aging and Alzheimer s Disease	93.866	RFMH 27645	1R56AG063372-01A1	RESEARCH FOUNDATION FOR MENTAL HYGIENEINC	\$0	\$104,025	
Exploring the Role of the Brain Epigenome: Cognitive Decline and Life Experience	93.866	RUMC 09111306-sub3	1RF1AG036042-01	RUSH UNIVERSITY MEDICAL CENTER	\$0	\$781,653	
Alzheimer s Disease & Related Dementias: Geography, Environments, and Mechanisms	93.866	USC 131604194	1RF1AG054068-01	UNIVERSITY OF SOUTHERN CALIFORNIA	\$0	\$191,116	
Genomic Characterization of Alzheimer s Disease Risk in the Puerto Rican population	93.866	UMIAMI 667606	1RF1AG054074-01	UNIVERSITY OF MIAMI	\$0	\$111,560	
Genetic Epidemiology of EarlyOnset Alzheimer s disease in Caribbean Hispanics and nonHispanic Whites	93.866	UMIAMI SPC-000135	1RF1AG054080-01	UNIVERSITY OF MIAMI	\$0	\$435,130	
Healthy Heart, Healthy Brain? A pooled life-course cohort for dementia risk assessment	93.866	11276sc	1RF1AG054443-01	UNIVERSITY OF CALIFORNIA SAN FRANCISCO	\$0	\$83,137	
Prevention of Alzheimer s disease in women: risks and benefits of hormone therapy	93.866	MAORO THE-234899-02	1RF1AG057547-01	MAYO CLINIC -- ROCHESTER	\$0	\$329,126	
The Effect of Vascular Risk Factors on Risk of Alzheimer s Disease and Related Dementias after Stroke (STROKE COG)	93.866	UMICHIG SUBK0001205	1RF1AG068410-01	UNIVERSITY OF MICHIGAN	\$0	\$15,455	
Replication and Extension in African Americans of AD Sequencing	93.866	UMIAMI SPC-000756	1U01AG052410-01	UNIVERSITY OF MIAMI	\$0	\$137,083	
Early Onset AD Consortium - the LEAD Study (LEADS)	93.866	IN-4683237-COL	1U01AG057195-01A1	INDIANA UNIVERSITY	\$0	\$94,436	
Therapeutic target discovery in ADSP data via comprehensive whole-genome analysis incorporating ethnic diversity and systems	93.866	BU 450003679	1U01AG058589-01A1	BOSTON UNIVERSITY	\$0	\$275,083	
The Alzheimer Disease Sequence Analysis Collaborative	93.866	CWRU RES515785	1U01AG058654-01A1	CASE WESTERN RESERVE UNIVERSITY	\$0	\$81,454	
Additional Sequencing Cohorts for the Alzheimer s Disease Sequencing Project	93.866	UMIAMI SPC-001303	1U01AG062943-01	UNIVERSITY OF MIAMI	\$0	\$82,557	
Preclinical development of a novel small molecule inhibitor of Alzheimer s disease-related cognitive impairment	93.866	NWU 60056114 CU	1U01AG066722-01	NORTHWESTERN UNIVERSITY	\$0	\$570,567	
Additional Sequencing for the Alzheimer s Disease Sequencing Project (ADSP)	93.866	UMIAMI OS00000156	1U01AG066767-1	UNIVERSITY OF MIAMI	\$0	\$115,153	
Ultrascale Machine Learning to Empower Discovery in Alzheimer s Disease Biobanks	93.866	USC 137299535	1U01AG068057-01	UNIVERSITY OF SOUTHERN CALIFORNIA	\$0	\$61,236	
Integrative Pathways to Health & Illness	93.866	UWIS 0000000079	1U19051426-01A1	UNIVERSITY OF WISCONSIN	\$0	\$160,734	
The Long Life Family Study: Columbia University	93.866	WUSOM WU-20-212	1U19AG063893-01	WASHINGTON UNIVERSITY SCHOOL OF MEDICINEIN ST. LOUIS	\$0	\$1,342,951	
ARTFL LEFFTDS Longitudinal Frontotemporal Lobar Degeneration (ALLFTD) - Project 1	93.866	MAORO BIA-263134	1U19AG063911-01	MAYO CLINIC -- ROCHESTER	\$0	\$32,839	
Coordinating Center for Genetics and Genomics of Alzheimer s Disease (CGAD)	93.866	UPENN 576386	1U54AG052427-01	UNIVERSITY OF PENNSYLVANIA	\$0	\$214,725	

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The Microvascular Aging and Eicosanoids Women s Evaluation of Systemic aging Tenacity (MAE-WEST) Specialized Center of Research Excellence (SCORE) on Sex Differences	93.866	CSMCLA 1761036	1U54AG065141-01	CEDARS-SINAI MEDICAL CENTER	\$0		\$13,675
Einstein Aging Study - Project 2	93.866	AECM 31172W	2P01AG003949-32	ALBERT EINSTEIN COLLEGE OF MEDICINEESHIVA UNIVERSITY	\$0		\$92,590
Improving Health Outcomes for an Aging Population	93.866	NBER 4135G.30.16.Columbia	2P01AG005842-30	NATIONAL BUREAU OF ECONOMIC RESEARCH	\$0		\$48,556
DNA Repair, Mutations and Cellular Aging	93.866	AECM 31168B	2P01AG017242-24	ALBERT EINSTEIN COLLEGE OF MEDICINEESHIVA UNIVERSITY	\$0		\$418,408
What Does Health Insurance Do? Evidence from the Oregon Health	93.866	NBER 4126B.COLUMBIA	2R01AG034151-06A1	NATIONAL BUREAU OF ECONOMIC RESEARCH	\$0		\$36,583
Pathogenesis of Postoperative Cognitive Dysfunction	93.866	MGH 235316	2R01AG041274-06A1	MASSACHUSETTS GENERAL HOSPITAL	\$0		\$135,000
Enhancing Retrospective Life History Data in the Health and Retirement Study	93.866	SUBK00010395	2R01AG051142-05	UNIVERSITY OF MICHIGAN	\$0		\$36,500
National Alzheimer s Coordinating Center	93.866	UWSC7720	2U01AGB016976-16	UNIVERSITY OF WASHINGTONSEATTLE WASHINGTON	\$0		\$35,080
Dominantly Inherited Alzheimer Network	93.866	WASHU CU20-0606	2U19AG032438-08	WASHINGTON UNIVERSITY	\$0		\$7,226
Biomarkers of Cognitive Decline Among Normal Individuals: The Biocard Cohort	93.866	JHU 2004408143	2U19AG033655-11	JOHNS HOPKINS UNIVERSITY	\$0		\$54,543
Genome Center for Alzheimer s Disease - CORE A	93.866	UPENN 581993	2U54AG052427-06	UNIVERSITY OF PENNSYLVANIA	\$0		\$3,895
Novel Cognitive and Functional Measures for Alzheimer s Disease Prevention Trials: Sensitivity to Biomarkers	93.866	RFMH 27026	3R01AG051346-03S1	RESEARCH FOUNDATION FOR MENTAL HYGIENEINC	\$0		\$8,977
Novel Cognitive and Functional Measure for Alzheimer s Disease Prevention Trials	93.866	RFMH 27026	3R01AG051346-03S2	RESEARCH FOUNDATION FOR MENTAL HYGIENEINC	\$0		\$2,743
Exploring the Latent Class Structure of Inhibition in Aging	93.866	USC 127427367	4R00AG055684-03	UNIVERSITY OF SOUTHERN CALIFORNIA	\$0		\$6,165
Risk Factors, Pathology and Clinical Expressions of AD	93.866	RUMC L97092581-Sub07	5R01AG015819-18	RUSH UNIVERSITY MEDICAL CENTER	\$0		\$132,104
Sustaining Quality of Life of the Aged: Heart Transplant or Mechanical Support?	93.866	NWU 60040682 CU	5R01AG047416-03	NORTHWESTERN UNIVERSITY	\$0		\$22,217
Tau-Sliceosome Interactions in Alzheimer s Disease	93.866	BCMh 7000000572	5R01AG053960-05	BAYLOR COLLEGE OF MEDICINE--HOUSTON	\$0		\$239,172
Pitavastatin to Reduce Physical Function Impairment and Frailty in HIV (PREPARE)	93.866	UCLA CU19-0515	5R01AG054366-03	UNIVERSITY OF CALIFORNIA, LOS ANGELES	\$0		\$32,750
Human tissue specific age-related gene expression changes, their genetic regulations and the link to human diseases	93.866	ISMMS 0255-4711-4609	5R01AG055501-03	ICAHN SCHOOL OF MEDICINE AT MOUNT SINAI	\$0		\$68,427
Probing Heterogeneity of Alzheimer s Disease using iPSCs	93.866	BWH 119586	5R01AG055909-03	BRIGHAM AND WOMEN'S HOSPITAL	\$0		\$40,135
Mindfulness Meditation and Insomnia in Alzheimer Disease Caregivers: Inflammatory and Biological Aging Mechanism	93.866	UCLA 2000 G VK311	5R01AG056424-02	UNIVERSITY OF CALIFORNIA, LOS ANGELES	\$0		\$26,624
Combinatorial Actions of Genetic Variants and Gender Bias of Alzheimer s Disease	93.866	UCSD 131780734	5R01AG057706-03	UNIVERSITY OF CALIFORNIA, SAN DIEGO	\$35,152		\$155,969
Life Course Process of Alzheimer s Disease: Sex Difference and Biosocial Mechanisms	93.866	5113228	5R01AG057800-02	UNIVERSITY OF NORTH CAROLINA AT CHAPEL HILL	\$0		\$22,950
Resilience to Alzheimer s disease in humans with exceptional longevity	93.866	AECOM 311234	5R01AG057909-04	ALBERT EINSTEIN COLLEGE OF MEDICINEESHIVA UNIVERSITY	\$0		\$121,509

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A Multicenter, Randomized, DoubleBlind, Placebo-Controlled, Ascending Dose Study: Evaluate the Safety, Tolerability, Pharmacokinetics (PK) & Pharmacodynamic (PD) Effects of Posiphen	93.866	UCSD 92880900	5U19AG010483-26	UNIVERSITY OF CALIFORNIA, SAN DIEGO	\$0	\$7,783	
Genetic Variant-Based Drug Discovery Targeting Conserved Pathways of Aging	93.866	AECM 31169B	5U19AG056278-04	ALBERT EINSTEIN COLLEGE OF MEDICINEESHIVA UNIVERSITY	\$0	\$256,051	
Temporal Trends, Novel Imaging and Molecular Characterization of Preclinical and Clinical Alzheimer s Disease in the Framingham Cohorts	93.866	UTHSCSA 164208/163074	7R01AG054076-03	UNIVERSITY OF TEXAS HEALTH SCIENCE CENTER AT SAN ANTONIO	\$0	\$25,694	
Functional connectivity network in default mode regions provides the underlying infrastructure for taskbased functional co-de/activation networks	93.866	WCMC 203070	7R01AG057962-03	WEILL (JOAN AND SANFORD I.) MED. COLLEGE OF CORNELL UNIV.	\$0	\$46,494	
ARTFL LEFFTDS Longitudinal Frontotemporal Lobar Degeneration (ALLFTD) - Clinical Core	93.866	MAORO COL-263134	IUI9AG063911-01	MAYO CLINIC -- ROCHESTER	\$0	\$175,322	
The Four Repeat Tauopathy Neuroimaging Initiative	93.866	UCSF 10375sc	R01AG038791	UNIVERSITY OF CALIFORNIA SAN FRANCISCO	\$0	\$74,885	
Combinatorial regulation of the enhancer codes in senescence	93.866	UCSD 131072963 MP Invoice/P0 S	R01AG061521	UNIVERSITY OF CALIFORNIA, SAN DIEGO	\$46,210	\$213,951	
Impact of Financial Incentives on Setting of Care for Older Adults with Alzheimer s Disease and Related Dementias	93.866	RAND SCON-00000378	R21AG069787	RAND CORPORATION	\$0	\$19,995	
Asian Cohort for Alzheimer s Disease (ACAD)	93.866	UOP 580820	R56A6069130	UNIVERSITY OF PENNSYLVANIA	\$0	\$59,767	
Health and Retirement Study Yrs 29-34	93.866	UMICHG 3005916841	U01AG009740	UNIVERSITY OF MICHIGAN	\$0	\$10,171	
Whole Genome Sequencing in Ethnically Diverse Cohorts for the ADSP Follow Up Study (FUS)	93.866	UMIAMI SPC-001254	U01AG057659	UNIVERSITY OF MIAMI	\$0	\$255,891	
Health and Retirement Study Yrs 29- 34: Harmonized Cognitive Assessment Protocol (HCAP)	93.866	UMICHG 3004832623	U01AG058499	UNIVERSITY OF MICHIGAN	\$0	\$22,305	
Alzheimer s Clinical Trials Consortium (ACTC) (U24)	93.866	USC 105637272	U24AG057437	UNIVERSITY OF SOUTHERN CALIFORNIA	\$0	\$182,381	
ARMADA: Advancing Reliable Measurement in Alzheimer s Disease and cognitive Aging	93.866	NWU 60048330CU	U2CAG057441	NORTHWESTERN UNIVERSITY	\$0	\$15,791	
					\$81,362	\$11,426,417	
<b>Vision Research</b>							
African Descent and Glaucoma Evaluation Study (ADAGES) IV: Alterations of the lamina cribrosa in progression	93.867	UAB 000512884-002	1R01EY026574-01A1	UNIVERSITY OF ALABAMA AT BIRMINGHAM	\$0	\$115,627	
The BCI (Brain Computer Interface) Glaucoma Study: Objective Home-Based Detection of Progressive Visual Function Loss in Glaucoma	93.867	DUMC A031422	1R01EY029885-01	DUKE UNIVERSITY MEDICAL CENTER	\$0	\$39,943	
HEY: Hispanic Study	93.867	UTEXAS 1R21EY029605-01(01)	1R21EY029605-01	UNIVERSITY OF TEXAS - RIO GRANDE VALLEY	\$0	\$3,387	
Cell Death Pathways in Glaucomatous Neurodegeneration	93.867	ROCHSTR 417821G / UR FAO GR511	2R01EY018606-11A1	UNIVERSITY OF ROCHESTER	\$0	\$98,631	
3D-Fast Optical Interface for Rapid Volumetric Neural Sensing and Modulation	93.867	UCOL FY20.946.002	5R21EY029458-02	UNIVERSITY OF COLORADO	\$0	\$9,430	
Translational Gene Therapy for CNGB1 Retinitis Pigmentosa	93.867	MSU RC108391UC	R24EY027285	MICHIGAN STATE UNIVERSITY	\$0	\$85,752	
					\$0	\$352,770	
<b>Medical Library Assistance</b>							
STAYing Healthy and Informed: Decoding HIV/AIDS Information and Resources for LGBT Youth Experiencing Homelessness in New York City	93.879	UMW CU 21-0340	1UG4LM012347-05	UNIVERSITY OF MASSACHUSETTS WORCESTER	\$0	\$16,586	
Casual Inference in Large - Scale Time - Series with Rare Events and Latent Variables	93.879	SIT 2102255-01	5R01LM011826-07	STEVENS INSTITUTE OF TECHNOLOGY	\$0	\$74,999	

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Mechanistic Machine Learning	93.879	UCD CU19-2358	7R01LM012734	UNIVERSITY OF COLORADO	\$0	\$118,760	
					\$0	\$210,345	
<b>National Institutes of Health Acquired Immunodeficiency Syndrome Research Loan Repayment Program</b>							
HIV Prevention Trials Network (HPTN) Leadership Group	93.936	FHI 0080-0025	U01 AI068619	FAMILY HEALTH INTERNATIONAL	\$14,977	\$159,297	
					\$14,977	\$159,297	
<b>International Research and Research Training</b>							
Injury and Trauma Research Training program for Botswana	93.989	UPenn 570884	1-D43-TW-010448-01	UNIVERSITY OF PENNSYLVANIA	\$0	\$12,809	
Capacity development for HIV and mental health research in Asia (CHIMERA)	93.989	AMFAR 109915-66-ISTA	1D43TW011302-01	AMERICAN FOUNDATION FOR AIDS RESEARCH (AMFAR)	\$0	\$22,796	
Circulating microRNAs in extracellular vesicles, household air pollution and lung development in Ghana	93.989	MSSM 0255-A051-4609	1R21TW010957-01	ICAHN SCHOOL OF MEDICINE AT MOUNT SINAI	\$0	\$8,663	
Effectiveness of the Diabetes Prevention Program in Urban Bamako, Mali: Small Steps, Big Rewards	93.989	USTTB - The TCU - 01 /1R21TW01	1R21TW011736-01	UNIVSTY. OF SCIENCES, TECHNIQUES & TECHNOLOGIES OF BAMAKO	\$0	\$11,005	
Bangladesh Center for Global Environmental and Occupational Health	93.989	UCHICAGO FP056723-D	1U2RTW010122-01	UNIVERSITY OF CHICAGO	\$0	\$3,535	
PALOP Mental Health Implementation Research Training	93.989	RFMH 27610	2D43TW009675-06	RESEARCH FOUNDATION FOR MENTAL HYGIENEINC	\$0	\$12,413	
KNMU-SUNY HIV Research Training Program	93.989	RFSUNY 100-1132446-74921	5DA43TW010046-03	RESEARCH FOUNDATION OF THE STATE UNIVERSITY OF NEW YORK	\$0	\$5,998	
					\$0	\$77,219	
<b>Maternal and Child Health Services Block Grant to the States</b>							
Provision of Prenatal and Clinical Genetic Counseling Services	93.994	SDH C029422	HRSA	NEW YORK STATE DEPARTMENT OF HEALTH	\$0	\$-12,501	
					\$0	\$-12,501	
Total Pass-through Programs					<b>\$3,623,471</b>	<b>\$78,368,668</b>	
<b>Total National Institute of Health</b>					<b>\$91,732,628</b>	<b>\$628,824,251</b>	
<b>Grand Total: Department of Health &amp; Human Services</b>					<b>\$93,937,323</b>	<b>\$646,367,770</b>	
<b>National Science Foundation</b>							
<b>Direct Awards</b>							
IPA: Rotator: Division Director, Division of Earth Sciences, Steven L. Goldstein	47.RD	NSF 2105861			\$0	\$175,200	
EFRI ACQUIRE: Development of Heterogenous Platform for Chip Based Quantum Information Applications	47.041	EFMA-1641094			\$587,957	\$5,777,926	
Collaborative Research: Continuation of the Dark Matter Search with XENON1T at LNGS	47.049	PHY-1719286			\$4,037,010	\$20,190,919	

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2018-2023 Ship Operations -R/V Marcus G. Langseth	47.050	OCE-1829304			\$3,587,683	\$29,946,283
BD Hubs: NORTHEAST: The Northeast Big Data Innovation Hub	47.070	OAC-1916585			\$525,818	\$11,461,074
NeuroNex Theory Team: Columbia University Theoretical Neuroscience Center	47.074	DBI-1707398			\$368,288	\$5,145,998
Testing the limits of deep neural network models of human vision with optimized stimuli	47.075	BCS-1948004			\$222,047	\$3,202,888
Graduate Research Fellowship Program (GRFP)	47.076	DGE-2036197			\$0	\$5,687,892
Supporting Antarctic Research with Ongoing Operations and Development of the USAP-DC Project Catalog and Data Repository	47.078	OPP-1936530			\$0	\$583,133
Collaborative Research: AccelNet: Clean Air Monitoring and Solutions Network (CAMS-Net)	47.079	OISE-2020677			\$0	\$25,271
NSF Convergence Accelerator Track C: Cloud-Accessible Integrated Quantum Simulator Based on Programmable Atom Arrays	47.083	OIA-2040702			\$431,504	\$1,840,123
<b>Total Direct Award Programs</b>					<b>\$9,760,307</b>	<b>\$84,036,707</b>
<b>Pass-through Awards</b>						
<b>Engineering</b>						
INSPIRE-Intentional Defaults for More Sustainable Infrastructure: Studying Interventions to Alleviate Biases in Upstream, Multi-Stakeholder Decisions	47.041	UV GA11247 155597	CBET-1744246	UNIVERSITY OF VIRGINIA	\$0	\$16,611
DMREF: Collaborative Research: Design of surface functionality through surface composition and structure	47.041	CMU 1122746-425274	CBET-1921946	CARNEGIE MELLON UNIVERSITY	\$0	\$113,905
SRN: Integrated Urban Infrastructure Solutions for Environmentally Sustainable, Healthy, and Liveable Cities	47.041	PU SUB0000355	CBET-1952884	PRINCETON UNIVERSITY	\$0	\$180,857
COVID-19-RAPID: Examining Greenspace Access Impacts on Well-being During the COVID-19 Pandemic	47.041	BARNARD CU-2029301	CBET-2029301	BARNARD COLLEGE	\$0	\$56,733

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						<u>Total Expenditures (Includes Subrecipients)</u>
Nanosystems Engineering Research Center for Directed Multiscale Assembly of Cellular Metamaterials with Nanoscale Precision:CELL-MET	47.041	BU 4500003733	EEC-1647837	BOSTON UNIVERSITY	\$0	\$283,417
EFRI NewLAW: New frontiers for topologically-protected propagation of light, sound, elastic and mechanical waves	47.041	UTA16-000936	EFMA-1641069	UNIVERSITY OF TEXAS AT AUSTIN	\$0	\$16,693
Mid-Infrared Topological Plasmon-Polaritons with 2D Materials	47.041	UMINN A006382202	EFMA-1741660	UNIVERSITY OF MINNESOTA	\$0	\$156,064
Sun-powered Smart Window with Wireless Control and Passive Cooling Coating	47.041	VATECHI 445588-19020	IIP-1738689	VIRGINIA TECHNICAL INSTITUTE	\$0	\$96,323
I-Corps Node (Track 2): New York City Regional Innovation Node (NYCRIN)	47.041	RFCUNY CM00000546-00	IIP-1740622	RESEARCH FOUNDATION OF CITY UNIVERSITY OF NEW YORK	\$0	\$208,279
STTR Phase I: Smartphone-based blood pressure monitoring via the oscillometric finger pressing method	47.041	DHL CU19-2585	NSF 1843514	DIGITOUCH HEALTH LLC	\$0	\$25,477
Novel Vapor Detection Capability for Agriculture, Commerce, Industrial Safety, and National Security	47.041	LELANTOS CU20-1290	NSF-2025955	LELANTOS	\$0	\$101,185
					\$0	\$1,255,544
<b>Mathematical and Physical Sciences</b>						
NRAO Student Observing Support Award to Aliya Babul	47.049	NRAO CU-203496	AST-1519126	NATIONAL RADIO ASTRONOMY OBSERVATORY	\$0	\$16,434
SII Planning: Interdisciplinary and Cross-Layer Research Agenda for the National Wireless Spectrum Center	47.049	RUTGER 1615	AST-2037845	RUTGERS, THE STATE UNIVERSITY OF NJ DEPT. OF RADIOLOGY	\$0	\$39,992
PHOTON UPCONVERSION BIOMATERIALS FOR LIGHT-ACTIVATED TISSUE ENGINEERING	47.049	RCSA #27455	CHE-2039044	RES. CORP. FOR SCIENCE ADVANCEMENT	\$0	\$118,715
Harnessing room-temperature quantum-dot-like states in 2D materials for nanoscale nonclassical light	47.049	MONTANA G108-21-W8416	DMR-2004437	MONTANA STATE UNIVERSITY	\$0	\$110,135
TRIPDS+X: VIS: Creating an Annual Data Science Forum	47.049	GIT AWD-102378-G1	DMS-1839340	GEORGIA INSTITUTE OF TECHNOLOGY	\$0	\$45,208
U.S. ATLAS Operations: Discovery and Measurement at the Energy Frontier	47.049	RFSUNY 76749/1136652/2M&O	PHY-1624739	STATE UNIV. OF NEW YORK STONY BROOK	\$0	\$138,285
TeV Astrophysics with the VERITAS Gamma Ray Observatory	47.049	BARNARD CU-1806554	PHY-1806554	BARNARD COLLEGE	\$0	\$98,078
MRI Consortium: Development of a Wide Field-of-View Camera for the Schwarzschild-Couder Gamma Ray Telescope	47.049	BARNARD CU-1828168	PHY-1828168	BARNARD COLLEGE	\$0	\$53,420
Participation in the Continuation of VERITAS Operations Program at FLWO	47.049	SAO SV0-09010	PHY-1913552	SMITHSONIAN ASTROPHYSICAL OBSERVATORY	\$0	\$39,547
					\$0	\$659,814
<b>Geosciences</b>						
Creating Better Forecasting and Predictive Capabilities for Coastal Flooding Due to Storms	47.050	UCAR SUBAWD001572	AGS-0856145	UNIVERSITY CORPORATION FOR ATMOSPHERIC RESEARCH	\$0	\$4,233
FESD Type I: VOICE: Volcano, Ocean, Ice, and Carbon Experiments	47.050	HARVARD 130783-5069512	AGS-1338832	HARVARD UNIVERSITY	\$0	\$184,627
Collaborative Research EaSM-3: Local and Remote Regional Climate Responses to Regional Forcings from Short-lived Climate Forcers	47.050	UCAR SUBAWD001104	AGS-1419571	UNIVERSITY CORPORATION FOR ATMOSPHERIC RESEARCH	\$0	\$80,903
Coupled Model Biases in the Sea Surface Temperature (SST) Distribution of the Global Tropics and Their Influence on Climate Change Projections	47.050	UMAINE UMS1113	AGS-1650037	UNIVERSITY OF MAINE	\$0	\$46,047
Creating better forecasting and predictive capabilities for coastal flooding due to storms	47.050	UCAR SUBAWD002256	AGS-1755088	UNIVERSITY CORPORATION FOR ATMOSPHERIC RESEARCH	\$0	\$91,284
Ocean Sciences for Rural Communities via Informal Science Education: Pop-Up/Drill Down Science	47.050	COL SA16-35	DRL-1515856	CONSORTIUM FOR OCEAN LEADERSHIP	\$0	\$10,900

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LDEO Operation of Continuous GNSS Stations in Russia	47.050	IRIS SU-19-1001-01-LDEO	EAR-1724509	INCORPORATED RESEARCH INSTITUTIONS FOR SEISMOLOGY	\$0	\$11,511	
CNH-L: Volcanism, Hydrology and Social Conflict: Lessons from Hellenistic and Roman-Era Egypt and Mesopotamia	47.050	YU GR104087(CON-80001396)	ICER-1824770	YALE UNIVERSITY	\$0	\$129,127	
Collaborative Research: Global Ocean Repeat Hydrography Carbon & Tracer Measurements, 2015-2020	47.050	UWASH UWSC8202	OCE-1433922	UNIVERSITY OF WASHINGTONSEATTLE WASHINGTON	\$0	\$146	
Collaborative Research: Global Ocean Repeat Hydrography, Carbon, and Tracer Measurements, 2015-2020	47.050	UCSD 59692302	OCE-1437015	UNIVERSITY OF CALIFORNIA, SAN DIEGO	\$0	\$215,765	
Collaborative Research: Modeling Ice-ocean Interaction for the Rapidly Evolving Ice Shelf Cavities of Pine Island and Thwaites Glaciers, Antarctica	47.050	UWASH UWSC9918	OCE-1643285	UNIVERSITY OF WASHINGTONSEATTLE WASHINGTON	\$0	\$19,154	
Alaska Amphibious Community Seismic Experiment	47.050	CU 80572-10908	OCE-1654568	CORNELL UNIVERSITY	\$0	\$24,364	
Worthington Deployment	47.050	WHOI REV-A101491	OCE-1806608	WOODS HOLE OCEANOGRAPHIC INSTITUTION	\$0	\$128,493	
Collaborative Research: Ecology and Evolution of Microbial Interactions in a Changing Ocean	47.050	UALASKA UAF 20-0084	OCE-1937715	UNIVERSITY OF ALASKA FAIRBANKS	\$0	\$10,374	
Imaging Small-scale Convection and Structure of the Mantle in the South Pacific: a US Contribution to International Collaboration PacificArray	47.050	NAU 1004583-01	OCE-2051265	NORTHERN ARIZONA UNIVERSITY	\$0	\$27,131	
Collaborative Research: Seismic Imaging of Volcano Construction, Underplating and Flexure along the Hawaii-Emperor Seamount Chain	47.050	NAU 1004591-01	OCE-2051501	NORTHERN ARIZONA UNIVERSITY	\$0	\$99,800	
NSFPLR-NERC The Future of the Thwaites Glacier and its Contribution to Sea-Level Rise Science	47.050	UCOL 1556529	OPP-1738913	UNIVERSITY OF COLORADO	\$0	\$51,629	
NSFPLR-NERC: Ground Geophysics Survey of Thwaites Glacier	47.050	PSU 5861-CU-NSF-8934	OPP-1738934	PENNSYLVANIA STATE UNIVERSITY	\$0	\$41,363	
NSF-NERC: Stability and Instability of Records of External Drivers and Resulting Past Behavior of Thwaites Glacier	47.050	HOUSTN R-18-0061	OPP-1738942	UNIVERSITY OF HOUSTON	\$0	\$19,470	
NSFPLR-NERC: Processes, Drivers, Predictions: Modeling the Response of Thwaites Glacier Over the Next Century using Ice/Ocean Coupled Models (PROPHET)	47.050	UCI 2018-3563	OPP-1739031	UNIVERSITY OF CALIFORNIA, IRVINE	\$0	\$93,296	
					\$0	\$1,281,151	
<b>Computer and Information Science and Engineering</b>							
MoSSI Seed Software Fellows	47.070	VPTISU 479590-19020	ACI-15647580	VIRGINIA POLYTECHNIC INSTITUTE AND STATEUNIVERSITY	\$0	\$64,286	
SPX: Integrating Persistent Memory in the Cloud	47.070	UV GA11375.PO#2236709	CCF-1822965	UNIVERSITY OF VIRGINIA	\$0	\$183,859	
NeTS: Large: Collaborative Research: Programmable Inter-Domain Observation and Control	47.070	USC 101503073	CNS-1413978	UNIVERSITY OF SOUTHERN CALIFORNIA	\$0	\$33,331	
PAWR Platform Full Proposal-COSMOS: Cloud-Enhanced Open Software-Defined Mobile-Wireless Testbed for City-Scale Deployment	47.070	RUTGER 0425	CNS-1827923	RUTGERS, THE STATE UNIVERSITY OF NJ DEPT. OF RADIOLOGY	\$58,599	\$254,307	
2019 Secure and trustworthy Cyberspace PI meeting	47.070	BARNARD CU-1935156	CNS-1935156	BARNARD COLLEGE	\$0	\$12,702	
CPS: Security and Privacy: Medium : Detecting and Controlling Unwanted Data Flows in the Internet of Things	47.070	UCHICA AWD100678 (SUB00000205)	CNS-1953740	UNIVERSITY OF CHICAGO	\$0	\$61,699	
FAI: Measuring and Mitigating Biases in Generic Image Representations	47.070	UV GA11556.PO#2327987	IIS-2040961	UNIVERSITY OF VIRGINIA	\$0	\$3,119	
BD Hubs: Collaborative Proposal: WEST: A Big Data Innovation Hub for the Western United States	47.070	UCB 00010214	OAC-1550312	UNIVERSITY OF CALIFORNIA, BERKELEY	\$0	\$35,968	
A Framework for Data Intensive Discovery in Multimessenger Astrophysics	47.070	UWIS 203405434	OAC-1934752	UNIVERSITY OF WISCONSIN	\$0	\$34,686	

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Collaborative Research: Predictive Risk Investigation System (PRISM) for Multi-layer Dynamic Interconnection Analysis	47.070	CU 90549-11302	OAC-1940276	CORNELL UNIVERSITY	\$0	\$62,725	
					\$58,599	\$746,682	
<b>Biological Sciences</b>							
COVID-19-RAPID: Epidemiology of COVID-19 based on Surveillance of Deceased Donors in the United States	47.074	CLEVELCL 1399-SUB	2032726	CLEVELAND CLINIC	\$0	\$83,581	
LTER: Luquillo LTER VI: Understanding Ecosystem Change in Northeastern Puerto Rico	47.074	UPR 2019-007	DEB-1831952	UNIVERSITY OF PUERTO RICO	\$0	\$31,587	
CRCNS Research Project: Solving the Neural Code of Hydra	47.074	UWASH UWSC10704	EF-1822550	UNIVERSITY OF WASHINGTON SEATTLE WASHINGTON	\$0	\$70,990	
The rules of microbiota colonization of the mammalian gut	47.074	BWH 2025515	NSF2025515	BRIGHAM AND WOMEN'S HOSPITAL	\$0	\$89,253	
					\$0	\$275,411	
<b>Social, Behavioral, and Economic Sciences</b>							
Collaborative Research: INFEWS/T1: Understanding Multi-Scale Resilience Options for Climate-Vulnerable Africa	47.075	JHU 2003204180	BCS-1639214	JOHNS HOPKINS UNIVERSITY	\$0	\$1,850	
Benchmarking Spatial Patterns of Glacier Change	47.075	SUNYBF R1182085	BCS-1853705	STATE UNIVERSITY OF NEW YORK AT BUFFALO	\$0	\$18,910	
A Geospatial Analysis of Glacier Volume Change	47.075	UTAH 10051082-COL	BCS-1853881	UNIVERSITY OF UTAH	\$0	\$26,037	
Credibility in Persuasion	47.075	UCHICA AWD066246-01-PR (SUB000)	SES-1730168	UNIVERSITY OF CHICAGO	\$0	\$51,920	
The Effects of the World War II Research Effort on Post-war U.S. Science, Technology and Innovation	47.075	DUKE 333-2681	SMA-1951470	DUKE UNIVERSITY	\$0	\$55,473	
					\$0	\$154,190	
<b>Education and Human Resources</b>							
NCS-FO: Using computational cognitive neuroscience to predict and optimize memory	47.076	NYU F8658-01	DRL-1631436	NEW YORK UNIVERSITY	\$0	\$20,365	
Reducing Attrition in STEM Doctoral Education: A Longitudinal Investigation Using Momentary Assessment and Social Psychological Intervention	47.076	PSU 5663-CU-NSF-1214	HRD-1661214	PENNSYLVANIA STATE UNIVERSITY	\$0	\$26,632	
					\$0	\$46,997	
<b>Polar Programs</b>							
Mapping Antarctic Subglacial Water in Three Dimensions with Novel Electromagnetic Techniques	47.078	UCSD 96644852	OPP-1643917	UNIVERSITY OF CALIFORNIA, SAN DIEGO	\$0	\$10,279	
LTER Palmer, Antarctica (PAL): Land-Shelf-Ocean Connectivity, Ecosystem Resilience and Transformation in a Sea-Ice Influenced Pelagic Ecosystem	47.078	RUTGER 1352	OPP-2023425	RUTGERS, THE STATE UNIVERSITY OF NJ DEPT. OF RADIOLOGY	\$0	\$39,473	
					\$0	\$49,752	
<b>Office of International Science and Engineering</b>							
PIRE: Climate Research Education in the Americas using Tree-Ring and Cave Sediment Examples (PIRE-CREATE)	47.079	SUNYA 18-28-79761	OISE-1743738	STATE UNIVERSITY OF NEW YORK AT ALBANY	\$0	\$326,318	
					\$0	\$326,318	
<b>Integrative Activities</b>							
PIRE: Dust Simulated Drawdown of Atmospheric CO2 as a Trigger for Northern Hemisphere Glaciation	47.083	ROCHSTR 416748	OISE-1545859	UNIVERSITY OF ROCHESTER	\$0	\$33,161	
					\$0	\$33,161	

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						<b>R&amp;D Cluster</b>
<u>Federal Grantor / Pass-through Grantor</u>	<u>Assistance Listing No.</u>	<u>Award Identification No</u>	<u>Pass-through Contract Number</u>	<u>Passthrough Name</u>	<u>Subrecipients</u>	<u>Total Expenditures (Includes Subrecipients)</u>
Total Pass-through Programs					<b>\$58,599</b>	<b>\$4,829,020</b>
<b>Total</b>	<b>National Science Foundation</b>				<b>\$9,818,906</b>	<b>\$88,865,727</b>
<b>National Aeronautics &amp; Space Administration</b>						
<b>Direct Awards</b>						
Socioeconomic Data and Applications Distributed Active Archive Center (DAAC) for the EOS Data and Information Systems (EOSDIS)	43.RD	80GSFC18C0111			\$0	\$5,124,980
Interdisciplinary Research on Earth and Planetary Systems Modeling, the Impacts of Climate Change, and-the Habitability of Other Worlds	43.001	80NSSC20M0282			\$680,226	\$12,613,333
Physical and Biological Modulators of Space Radiation Carcinogenesis: Mechanistically-Based Model D	43.003	NNX16AR81A			\$0	\$196,114
Circulating miRNAs Provides Systemic Host Response to Microgravity: Utilizing GeneLab datasets to identify molecular targets for spaceflight studies	43.007	80NSSC19K1658			\$0	\$36,112
Dual Desalination/Concentrator Microfluidic Device for Amino Acid Sample Preparation for Search-For-Life Missions	43.012	80NSSC19K1180			\$0	\$73,732
Total Direct Award Programs					<b>\$680,226</b>	<b>\$18,044,271</b>
<b>Pass-through Awards</b>						
<b>National Aeronautics &amp; Space Administration</b>						
Understanding Galaxy Shapes Across Cosmic Time Using The IllustrisTNG Simulation	43.RD	HST-AR-15022.002-A	NAS5-26555	SPACE TELESCOPE SCIENCE INSTITUTE	\$0	\$415,909
Operation, Densification, and Upgrade of Continuous GNSS Stations in Russia in the Framework of MOU between LDEO & JPL	43.RD	JPLCIT 1452786	NAS7-03001	JET PROPULSION LAB, CALIFORNIA INSTITUTE OF TECHNOLOGY	\$84,612	\$110,007
Understanding what sets the metallicity distribution in the atmospheres of groups and clusters	43.RD	SAO TM9-20007X	NAS8-03060	SMITHSONIAN ASTROPHYSICAL OBSERVATORY	\$0	\$254,983
CYGNSS Estimates of Surface Heat Fluxes in Low-Latitude Extratropical Cyclones	43.RD	JPLCIT 1616842	NASA CU18-2642	JET PROPULSION LAB, CALIFORNIA INSTITUTE OF TECHNOLOGY	\$0	\$32,133
Weather Regime Tools for Subseasonal to Seasonal Forecasting of California Atmospheric Ridging Events	43.RD	JPLCIT 1649520	NASA CU19-2536	JET PROPULSION LAB, CALIFORNIA INSTITUTE OF TECHNOLOGY	\$0	\$100,707
Columbia University Participation in The Nuclear Spectroscopic Telescope Array (NuSTAR): Bringing the High Energy Universe Into Focus (Bridge Phase)	43.RD	CALTECH S376760	NNG08FD60C	CALIFORNIA INSTITUTE OF TECHNOLOGY	\$0	\$156,206
WFIRST Infrared Nearby Galaxy Survey	43.RD	UWASH UWSC9083	NNG16PJ28C	UNIVERSITY OF WASHINGTON SEATTLE WASHINGTON	\$0	\$9,688
					<b>\$84,612</b>	<b>\$1,079,633</b>
<b>Science</b>						

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TREX: Toolbox for Research and Exploration	43.001	PSINST 1523 Columbia Universit	80ARC017M00005	PLANETARY SCIENCE INSTITUTE	\$0	\$14,871	
Ecological and Sociodemographic Determinants and Impacts of Urbanization and Restoration on Intertwined Urban-Wetland-Estuarine Systems	43.001	CCONY CM00001790-02	80NSSC17K0258	CITY COLLEGE OF NEW YORK	\$0	\$58,035	
Comput Tech: Assessment of Hybrid Quantum Annealing Through Mission Related Approaches for Inferring & Assimilating Satellite Surface Flux Data into Global Land Surface Models	43.001	UMARY 0000020109	80NSSC17K0285	UNIVERSITY OF MARYLAND	\$0	\$-881	
SLICE: Spectral Signs of Life in Ice	43.001	MONTANA G104-19-W7250	80NSSC18K0814	MONTANA STATE UNIVERSITY	\$0	\$76,223	
Participation in the Effects of Density Fluctuations on Alfvén Wave Turbulence in a Coronal Hole Program	43.001	SAO SV9-89006	80NSSC18K1207	SMITHSONIAN ASTROPHYSICAL OBSERVATORY	\$0	\$236,772	
Photochemistry Resulting from a Large Cometary Impact on Neptune	43.001	SSI 000987	80NSSC19K0536	SPACE SCIENCE INSTITUTE	\$0	\$6,461	
Europa STI - Exploring Communication Techniques and Strategies for Sending Signals Through the ICE (STI) for an Ice-Ocean Probe	43.001	JH 155891	80NSSC19K0613	JOHNS HOPKINS UNIVERSITY	\$0	\$85,997	
Ag Out An Enhanced IMERG-based Agricultural Outlook System to Support Food Security and Agriculture in the Developing World	43.001	UCSB KK1981	80NSSC19K0686	UNIVERSITY OF CALIFORNIA, SANTA BARBARA	\$0	\$35,205	
Open Critical Infrastructure Exposure for Disaster Forecasting, Mitigation, and Response	43.001	IMAGE 19-94-03:03	80NSSC19K1112	IMAGECAT, INC.	\$0	\$7,338	
Laboratory Analysis of Returned Samples	43.001	UCSD 126684487	80NSSC19K1210	UNIVERSITY OF CALIFORNIA, SAN DIEGO	\$0	\$465,443	
Three-Dimensional Observational Estimates of Mesoscale Eddy Kinetic Energy in the Global Ocean: Understanding the Energetics of the Climate System	43.001	UWASH UWSC11553	80NSSC19K1252	UNIVERSITY OF WASHINGTON/SEATTLE WASHINGTON	\$0	\$95,199	
Exploring Ocean Worlds: Ocean System Science to Support the Search for Life	43.001	WHOI A101471	80NSSC19K1427	WOODS HOLE OCEANOGRAPHIC INSTITUTION	\$0	\$33,227	
Using Earth Observations and Statistical Models to Enhance Drought, Food Security, and Agricultural Outlooks in Eastern and Southern Africa	43.001	UCSB KK2043	80NSSC20K0159	UNIVERSITY OF CALIFORNIA, SANTA BARBARA	\$0	\$17,933	
Inferring Ocean Transport from SWOT	43.001	NYU F1533-01	80NSSC20K1142	NEW YORK UNIVERSITY	\$0	\$82,833	
COVID-19-Modeling the Economic Impact of COVID-19 with EO-Based Technologies	43.001	IMAGE 20-94-05:03	80NSSC20K1810	IMAGECAT, INC.	\$0	\$8,947	
Collaborative Research: Earth Venture Suborbital -2 Oceans Melting Greenland (OMG)	43.001	JPL 1525063	NNN12AA01C	JET PROPULSION LAB, CALIFORNIA INSTITUTE OF TECHNOLOGY	\$0	\$45,914	
LiDAR, Passive Spectral, and Ecophysiological Approaches to link Forest Tundra Ecotone Structure and Function	43.001	UOFIA NS0926-SB1-651954	NNX15AT86A	UNIVERSITY OF IDAHO	\$0	\$2,697	
A Multi-Frequency Campaign to Probe Uranus Dynamics and Deep Atmospheric Structure	43.001	UCB 00009673	NNX16AK14G	UNIVERSITY OF CALIFORNIA, BERKELEY	\$0	\$21,101	
Blazar emission modeling: going beyond the spherical cows	43.001	PURDUNIV 12000194-004	NNX17AG21G	PURDUE UNIVERSITY	\$0	\$22,601	
Developing a Mechanistic Understanding of Variability in the Atmospheric CO2 Growth Rate owing to Interannual Climate Oscillations	43.001	UMICHG 3004565769	NNX17AK19G	UNIVERSITY OF MICHIGAN	\$0	\$2,244	
					\$0	\$1,318,160	
<b>Exploration</b>							
Space radiation and gastrointestinal cancer: A comprehensive strategy for risk assessment and model development	43.003	GU 410967 GR410946-CU-Project	NNX15AI21G	GEORGETOWN UNIVERSITY	\$0	\$61,401	
miRNA Signature Detection and Countermeasures Against HZE Radiation Exposure for Tissue Degeneration	43.003	BCMh 7000000822	NNX16A069A	BAYLOR COLLEGE OF MEDICINE--HOUSTON	\$0	\$93,168	
Human Multi-tissue Platform to Study Effects of Space Radiation and Countermeasures/RAD0104	43.003	BCMh 7000001227	NNX16A069A	BAYLOR COLLEGE OF MEDICINE--HOUSTON	\$0	\$408,247	

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					<u>Subrecipients</u>	<u>Total Expenditures (Includes Subrecipients)</u>
					\$0	\$562,816
<b>Office of Stem Engagement (OSTEM)</b>						
NASA STEM Pathway Activities-Consortium for Education (NSPACE)	43.008	OKSU SPOCS-CU	80NSSC17M0021	OKLAHOMA STATE UNIVERSITY	\$0	\$4,417
New York Space Grant Consortium	43.008	CU 90830-20366	80NSSC20M0096	CORNELL UNIVERSITY	\$0	\$17,224
NASA / NEW YORK SPACE GRANT CONSORTIUM: NATIONAL SPACE GRANT COLLEGE AND FELLOWSHIP PROGRAM 2015-18	43.008	CU 76156-10486	NNX15AK07H	CORNELL UNIVERSITY	\$0	\$788
					\$0	\$22,429
Total Pass-through Programs					<b>\$84,612</b>	<b>\$2,983,038</b>
<b>Total National Aeronautics &amp; Space Administration</b>					<b>\$764,838</b>	<b>\$21,027,309</b>

**Department of Energy**

**Direct Awards**

MOU/BNL for Oleg Gang	81.RD	BNL CU16-2135			\$0	\$327,133
HIGH BETA TOKAMAK RESEARCH	81.049	DE-FG02-86ER53222			\$1,276,497	\$12,444,503
Environmentally Robust Quantum Dot Downconverters for Highly Efficiency Solid State Lighting	81.086	DE-EE0008716			\$96,000	\$663,627
GIS-based Graphical User Interface Tool for Analysis of Solar Thermal Desalination Systems and High Potential Implementation Regions	81.087	DE-EE0008401			\$0	\$254,909
Next Generation Fiber-Encapsulated Nanoscale Hybrid Materials for Direct Air Capture with Selective Water Rejection	81.089	DE-FE0031963			\$24,427	\$65,945
PINE: Photonic Integrated Network Energy Efficient Datacenters	81.135	DE-AR0000843			\$279,873	\$1,702,538
Total Direct Award Programs					<b>\$1,676,797</b>	<b>\$15,458,655</b>

**Pass-through Awards**

<b>Department of Energy</b>						
Infrared Nano-Imaging of Metastable States	81.RD	LBNL 7431739	DE-AC02-05CH11231	LAWRENCE BERKELEY NATIONAL LABORATORY	\$0	\$268,334

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Dynamical Mean Field Theory for Realistic Models of Correlated Materials	81.RD	ARGNTL 0F-60080	DE-AC02-06CH11357	ARGONNE NATIONAL LABORATORY	\$0	\$15,179	
Deep Underground Neutrino Experiment (DUNE)	81.RD	FERMI 665837	DE-AC02-07CH11359	FERMI NATIONAL ACCELERATOR LABORATORY	\$0	\$74,470	
Hybrid Quantum/Classical Algorithms for Photochemistry and Nonadiabatic Dynamics	81.RD	SNAL No. 200586	DE-AC02-76SF00515	SLAC NATIONAL ACCELERATOR LABORATORY	\$0	\$190,783	
Design of Carbide and Bimetallic Catalysts and Electrocatalysts	81.RD	BNL NO.233521	DE-AC02-98CH10886	BROOKHAVEN NATIONAL LABORATORY	\$0	\$426,180	
GO ORNL PROGRAM for Nikhil Rampal	81.RD	ORNL 4000160263	DE-AC05-00OR22725	OAK RIDGE NATIONAL LABORATORY	\$0	\$103,320	
Emissions-MIP - An Emissions Sensitivity Evaluation	81.RD	PNNL 479284	DE-AC05-76RL01830	PACIFIC NORTHWEST NATIONAL LABORATORY	\$0	\$129,500	
Center for Thermal Energy Transport under Irradiation	81.RD	BEA No. 208385	DE-AC07-05ID14517	BATTELLE ENERGY ALLIANCE, LLC	\$0	\$238,710	
2020 Marine Energy Collegiate Competition	81.RD	NREL SUB-2020-10056	DE-AC36-08GO28308	NATIONAL RENEWABLE ENERGY LABORATORY	\$0	\$14,583	
Integration of Horizontal Unstructured Mesh Generation Code (JIGSAW) into MPAS-O and MPAS-SI	81.RD	LANL 486629	DE-AC52-06NA25396	LOS ALAMOS NATIONAL LABORATORY	\$0	\$10,299	
Secure Biosystems from Sequence to Cell to Populations	81.RD	NO. B640460	DE-AC52-07NA27344	LAWRENCE LIVERMORE NATIONAL LABORATORY	\$0	\$25,545	
AURORA: Autonomous and Resilient Operation of Energy Systems with Renewables	81.RD	SIEMENS 173-1	DE-EE0008768	SIEMENS CORPORATE RESEARCH, INCORPORATED	\$0	\$44,657	
sPHENIX: digitizer readout system production	81.RD	BNL 382403	DE-SC0012704	BROOKHAVEN NATIONAL LABORATORY	\$0	\$1,706,223	
Flow Ordering and Hierarchical Bottleneck Identification for High Speed Data Networks	81.RD	RLABS CU20-0100	DE-SC0019523	RESERVOIR LABS	\$0	\$70,698	
Photonic Memory Controller Module (P-MCM)	81.RD	FPHOTO MCM-P2B	DOE CU18-0610	FREEDOM PHOTONICS	\$0	\$214,525	
Establishing Approaches for Creating 3D Ordered Hierarchical Materials Through a Combination of DNA-Programmable Assembly at Nanoscale and Atomic Templating for Sub-NM Scale	81.RD	BNL 366419	DOE CU18-2347	BROOKHAVEN NATIONAL LABORATORY	\$0	\$73,897	
sPHENIX EMCAL Detector Upgrade at RHIC	81.RD	BNL 356535	DOE CU19-0001	BROOKHAVEN NATIONAL LABORATORY	\$0	\$66,534	
Photonic-Storage Subsystem Input/Output (P-SSIO) Interface	81.RD	FPHOTO S7146-01	DOE CU19-0376	FREEDOM PHOTONICS	\$0	\$297,054	
Development of Nanoscale System with Regulated Enzymatic Activity and Local Motion Using DNA Structures	81.RD	BNL 366392	DOE CU19-1525	BROOKHAVEN NATIONAL LABORATORY	\$0	\$-105	
sPHENIX Calorimeter Local Level 1 Trigger at RHIC in FY19/20	81.RD	BNL 369117	DOE CU19-2962	BROOKHAVEN NATIONAL LABORATORY	\$0	\$13,674	
					\$0	\$3,984,060	
<b>Office of Science Financial Assistance Program</b>							
Center for Bio-Inspired Energy Science (CBES)	81.049	SP0027267-PROJ0011442	DE-SC0000989	NORTHWESTERN UNIVERSITY	\$0	\$157,890	
Rational Design of Innovative Catalytic Technologies for Biomass Derivative Utilization	81.049	UD 32826	DE-SC0001004	UNIVERSITY OF DELAWARE	\$0	\$163,524	
Ultrafast Creation of Emergent Phenomena and Metastable Phases in Complex	81.049	PSU 5710-CU-DOE-2375	DE-SC0012375	PENNSYLVANIA STATE UNIVERSITY	\$0	\$89,795	
EFRC: Center for Mesoscale Conductivity	81.049	RFSUNY 68856	DE-SC0012673	RESEARCH FOUNDATION OF THE STATE UNIVERSITY OF NEW YORK	\$0	\$187,389	

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Bayesian Cloud Property Retrievals from ARM Active and Passive Measurements	81.049	UCLA 2095 G UA028	DE-SC0016118	UNIVERSITY OF CALIFORNIA, LOS ANGELES	\$0	\$33,432	
Studies of Reactive Amorphous Compounds and Surfaces: Their Pathways to Crystallinity and Surface Functionality	81.049	TAMU 02-M1800290	DE-SC0017864	TEXAS A&M UNIVERSITY	\$0	\$15,402	
Improving Parameterization of Ice Microphysical Processes in Arctic Clouds using a Synergistic Modeling and Observational Approach	81.049	PSU 5933-CU-USDOE-8933	DE-SC0018933	PENNSYLVANIA STATE UNIVERSITY	\$0	\$67,501	
GENESIS: A Next Generation Synthesis Center	81.049	SUNYSB 82192/1148574/2	DE-SC0019212	STATE UNIV. OF NEW YORK STONY BROOK	\$0	\$250,711	
Breakthrough Electrolytes for Energy Storage (BEES)	81.049	CWRU RES513723	DE-SC0019409	CASE WESTERN RESERVE UNIVERSITY	\$0	\$92,567	
Planar Systems for Quantum Information	81.049	CU 86856-11154	DE-SC0019481	CORNELL UNIVERSITY	\$0	\$174,799	
Dual Functional materials for direct CO2 Air capture	81.049	SUSTEON S-016-1	DESC0020795	SUSTEON INC	\$0	\$78,399	
Early Stages in the Lifecycle of Polar Liquid-Bearing Clouds	81.049	PSU S001043-DOE	DE-SC0021004	PENNSYLVANIA STATE UNIVERSITY	\$0	\$4,714	
					<u>\$0</u>	<u>\$1,316,123</u>	
<b>Renewable Energy Research and Development</b>							
Development of Composite Photocatalyst Materials that are Highly Selective for Solar Hydrogen Production and their Evaluation in Z-Scheme Reactor Designs	81.087	UCI 2020-1298	DE-EE0008838	UNIVERSITY OF CALIFORNIA, IRVINE	\$0	\$104,987	
					<u>\$0</u>	<u>\$104,987</u>	
<b>Fossil Energy Research and Development</b>							
Deepwater Methane Hydrate Characterization in the Gulf of Mexico: Scientific Assessment and Production Potential	81.089	UTA14-001159	DE-FE0023919	UNIVERSITY OF TEXAS AT AUSTIN	\$0	\$41,559	
Collaborative Development Projects - Photonic Memory Controller Module (P-MCM)	81.089	PLCC CU18-0520	DOE CU18-0520	PLC CONNECTIONS	\$0	\$297,725	
					<u>\$0</u>	<u>\$339,284</u>	
<b>Defense Nuclear Nonproliferation Research</b>							
Consortium for Verification Technology	81.113	UMICHG 3003222364	DE-NA002534	UNIVERSITY OF MICHIGAN	\$0	\$18,006	
Consortium for Monitoring, Technology, and Verification (MTV)	81.113	UMICH SUBK00009795	DE-NA003920	UNIVERSITY OF MICHIGAN	\$0	\$227,322	
					<u>\$0</u>	<u>\$245,328</u>	
<b>Advanced Research Projects Agency - Energy</b>							
Minimally Orchestrated Storage Technology for Duration Addition to Electricity Storage	81.135	PRIMUS CU18-3145	DE-AR0000990	PRIMUS POWER	\$0	\$431,360	
An Iterative Approach for Solving the SCOPF Problem Applying LP, SOCP and NLP Subproblems	81.135	NWU 60052596 CU	DE-AR0001077	NORTHWESTERN UNIVERSITY	\$0	\$45,561	
					<u>\$0</u>	<u>\$476,921</u>	
Total Pass-through Programs					<u>\$0</u>	<u>\$6,466,703</u>	
<b>Total</b>	<b>Department of Energy</b>				<u>\$1,676,797</u>	<u>\$21,925,358</u>	

**Department of Defense**

**Direct Awards**

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BISC: Bioelectronic Interfacing to Sensory Cortex with massive, fully implanted, flexible wireless CMOS surface recording and stimulating arrays	12.RD	N66001-17-C-4002			\$3,109,692	\$6,841,926	
Measuring, Tracking and Modulating Human Decision-Making Neural Circuits In the Wild	12.300	N00014-20-1-2027			\$464,773	\$5,589,357	
Development of Inhibitors of the Aging Process of Organophosphate Adducts of AChE	12.351	HDTRA1-16-1-0053			\$15,467	\$200,289	
Treatment Strategies for Mitochondrial Disease	12.420	W81XWH2010807			\$226,198	\$10,326,215	
A Symbiotic Agent-Based Network Platform Linking Expert Knowledge and Machine Learning for Systemic Risk Mitigation	12.431	W911NF1910013			\$605,164	\$3,233,475	
DURIP-An Integrated paradigm for Microstructural Characterization of Energetic Particulate Composite	12.800	FA9550-19-1-0374			\$299,435	\$3,031,876	
TRAUMAS: Treatment and recovery augmented with electrical and ultrasound- mediated actuation and sensing	12.910	D20AC00004			\$2,463,457	\$7,941,931	
Total Direct Award Programs					<b>\$7,184,186</b>	<b>\$37,165,069</b>	
<b>Pass-through Awards</b>							
<b>Department of Defense</b>							
Columbia Entrepreneurship, Innovation, and Design Support for MD5 Staff	12.RD	CMI2 1904-01-012-01	47QTCA18D00DK	CIVIL-MILITARY INNOVATION INSTITUTE	\$0	\$17,181	
Reverse Engineering Neocortical Intelligence	12.RD	BCM PO7000000428	D16PC0000	BAYLOR COLLEGE OF MEDICINE--HOUSTON	\$0	\$198,330	
Deep Intermodal Video Analytics	12.RD	UMARY 92485-Z9618204	D17PC00345	UNIVERSITY OF MARYLAND	\$0	\$328,656	
Improved Interoperability Between Scikit-learn Models and Data-Driven Discovery of Models (D3M)	12.RD	JPLCIT 1648049	DARPA CU20-0784	JET PROPULSION LAB, CALIFORNIA INSTITUTE OF TECHNOLOGY	\$0	\$147,975	
Engineered Living Materials	12.RD	ECODES CU16-2615	DARPA-BAA-16-50	ECOVATIVE DESIGN	\$0	\$1,214,364	
Optimizing Micro Resonator s Based Sensor	12.RD	IMO PO#4441083200	DOD CU20-2364	ISRAELI MINISTRY OF DEFENSE	\$0	\$102,423	
Long Term Potentiation Deficits after Repetitive Primary Blast	12.RD	SURVICE S17-095006	DOTC-17-01-INIT0086/OTA 2014-3	SURVICE ENGINEERING	\$0	\$3,904	

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Contribution to ACS Modeling, Simulation & Emulation Project	12.RD	BAHI S900741BAH	FA8075 14 D 0002	BOOZ ALLEN HAMILTON INC	\$0	\$46,670	
F2-13636 Project OWL Phase II SBIR	12.RD	OWL CU20-3530	FA864920P1017	PROJECT OWL LLC	\$0	\$81,787	
Progressive Damage Model Benchmarking for Ceramic Matrix Composite Components in Turbine Engine Applications	12.RD	ARTCOS 195208-19-05-C1	FA8650-19-C-5208	ARTCOS TECHNOLOGY SOLUTIONS LLC	\$0	\$141,471	
Chip-Scale Optical Planar LADAR Architecture (COPLA)	12.RD	JASR 703-02	FA8650-19-C-7916	JASR SYSTEMS	\$0	\$69,355	
Machine-Intelligence for Advance Notification of Threats and Energy-Grid Survivable Situational Awareness (MANTESSA)	12.RD	ACS PO-0008887	FA8750-16-C-0054	APPLIED COMMUNICATION SCIENCES	\$0	\$11,324	
EPOCHS: Efficient Programmability of Cognitive Heterogeneous Systems	12.RD	IBM CW2912424	HR0011-18-C-0122	IBM THOMAS J WATSON RES. CTR.	\$0	\$503,000	
FROMAGER: Formal Reasoning OverMachine-code Assets, Given with Explicit Reticence	12.RD	GALOIS No. 2020-008	HR00111950076	GALOIS INC	\$0	\$251,618	
Secure Handling of Isolated Executables without Leaking Data (SHIELD)	12.RD	PERSPECTA PO-0018620	HR0011-19-S0017	PERSPECTA LABS	\$0	\$113,710	
OPTICS	12.RD	PERSPECTA PO-0020017	HR001119S0082	PERSPECTA LABS	\$0	\$583,253	
Semantic Information Defender	12.RD	KITWARE K003088-00-S01	HR001120C0123	KITWARE, INC.	\$0	\$409,342	
Verona: A Platform for Developing and Deploying Secure Computation for Data Scientists	12.RD	GALOIS No. 2019-027	IARPA CU18-0108	GALOIS INC	\$55,341	\$77,098	
IBIS: Implantable bioluminescence interface for an all-optical neuroprosthesis to the visual cortex	12.RD	JBPL 295-B Phase III	N66001-17-C-4012	JOHN B. PIERCE LABORATORY	\$0	\$438,146	
Magnetic Optical and Acoustic Neural Access (MOANA) System	12.RD	RICEUNIV R1A26D	N6600119C4020	RICE UNIVERSITY	\$0	\$190,717	
ARION: A Real-time HPC Platform with In-memory Non-Von-Neumann Processing and Optical Networking	12.RD	GIT AWD-000785-S1	N6600120C4002	GEORGIA INSTITUTE OF TECHNOLOGY	\$0	\$599,180	
Energy Efficient, Non-Silicon Digital Signal Processing (DSP)	12.RD	HYPRES HYP-N68335-18-C-0654	NAVY CU18-0788	HYPRES INC	\$0	\$99,866	
Effects of Traumatic Brain Injury and Post-Traumatic Stress Disorder and Alzheimer s Disease on Brain Tau in Vietnam Veterans using ADNI	12.RD	USC 69979617	W81XWH-14-1-0462	UNIVERSITY OF SOUTHERN CALIFORNIA	\$0	\$1,736	
Layer-by-Layer Multiple Antigen Nano-delivery Platform for Malaria Vaccine	12.RD	LUNA 3441-ARM-2S	W81XWH-18-C-0073	LUNA INNOVATIONS	\$0	\$116,044	
Building blocks and Search Improvements for Automated Machine Learning Model Selection	12.RD	KEYW 50001964	W911NF-16-C-0005	KEYW	\$0	\$-86,653	
Abelian Bridge to Non-Abelian Anyons in Ultra-Cold Atoms and Graphene	12.RD	UCSB KK1813	W911NF-17-1-0323	UNIVERSITY OF CALIFORNIA, SANTA BARBARA	\$0	\$131,610	
Fundamentally New Methods of Fabrication (SuperVan)	12.RD	BBN PO4201804852/SLIN 0003	W911NF-18-C-0044	BBN TECHNOLOGIES CORP.	\$0	\$142,000	
Diagnostic Epigenetics of Infectious agents and Chemical Toxicity (DEPICT)	12.RD	ASU ASUB00000355	W911NF19C00039	ARIZONA STATE UNIVERSITY	\$0	\$8,165	
Adaptable Tactical Communications Phase 2	12.RD	ACGI PO#1063	W911NF21C0021	ASPEN CONSULTING GROUP INC.	\$0	\$71,966	
Anticipatory Analytics for Environmental Stressors Phase 2	12.RD	ISCI W912HZ19C0005-SC-01	W912HZ19C0005	ISCIENCES LLC	\$0	\$175,296	
					\$55,341	\$6,189,534	

**Basic and Applied Scientific Research**

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Reasoning about Event Schemas for Induction of Knowledge (RESIN)	12.300	RPI A20-0047-S001	FA8750-19-2-1004	RENSELAER POLYTECHNIC INSTITUTE	\$0	\$368,434
Government Secure Voice Architecture	12.300	TAMU M2100433	FA8750-20-2-1005	TEXAS A&M UNIVERSITY	\$0	\$23,681
Carbon-based Hierarchically Integrated Synthetic Electronics (CHISEL)	12.300	UCB 00009293	N00014-16-1-2921	UNIVERSITY OF CALIFORNIA, BERKELEY	\$0	\$126,505
ABIDES: Adaptive Binary DEbloating and Security	12.300	SIT 2102747-02	N00014-17-1-2788	STEVENS INSTITUTE OF TECHNOLOGY	\$0	\$434,374
Elements of Causal Learning: Basic Concepts, Theory, Methods, Algorithms and Applications	12.300	TEMPLE 264443-01-TCU	N00014-19-1-2468	TEMPLE UNIVERSITY	\$0	\$55,902
Virtually Co-located Augmented Reality Spaces for Visualization, Training and Navigation	12.300	VU UNIV61657	N00014-20-1-2719	VANDERBILT UNIVERSITY	\$0	\$18,869
					<u>\$0</u>	<u>\$1,027,765</u>
<b>Scientific Research - Combating Weapons of Mass Destruction</b>						
Exogenous regulation of acute lung injury	12.351	CM00004481-00	HDTRA11810049	CITY COLLEGE OF NEW YORK	\$0	\$160,542
					<u>\$0</u>	<u>\$160,542</u>
<b>Pest Management and Vector Control Research</b>						
Novel Evaluation of Control and Prevention Strategies for Ticks and Tick-Borne Disease	12.355	CU 89560-11268	W911QY1910006	CORNELL UNIVERSITY	\$0	\$51,211
					<u>\$0</u>	<u>\$51,211</u>
<b>Military Medical Research and Development</b>						
Direct 3D Printing of Integrated Electro Mechanical Systems	12.420	IMOD P.O.#444/0729085	DOD CU15-3453	ISRAELI MINISTRY OF DEFENSE	\$0	\$2,187
RAGE/Diaph1, Diabetes, and Kidney Disease: Mechanisms and Novel Therapeutic Strategies	12.420	NYUMC 17-AO-00-007334-01	W81XWH-17-1-0201	NEW YORK UNIVERSITY MEDICAL CENTER	\$0	\$37,915
Investigation of the NMDA Antagonist Ketamine as a Treatment for Tinnitus	12.420	RFMH 26965	W81XWH1810221	RESEARCH FOUNDATION FOR MENTAL HYGIENEINC	\$0	\$41,623
Translating a stem cell-based therapy for epidermolysis bullosa into the clinic	12.420	UCOL CU19-2578	W81XWH1810706	UNIVERSITY OF COLORADO	\$0	\$-62,324
Prostate Cancer Clinical Consortium Clinical Research Site: TargetedTherapies	12.420	WCMC 213008	W81XWH1820032	CORNELL UNIVERSITY	\$0	\$61,199
Determinants of Aneurysm Formation in Autosomal Dominant Polycystic Kidney Disease	12.420	UMARY F303852-1	W81XWH2010762	UNIVERSITY OF MARYLAND	\$0	\$35,482
					<u>\$0</u>	<u>\$116,082</u>
<b>Basic Scientific Research</b>						
Scalable Coherent Photonic Array on a Silicon Platform	12.431	TREX S20104	FA8650-19-C-1002	TREX ENTERPRISES CORP	\$0	\$118,970
Bio-inspired Design of Adaptive Catalysis Center	12.431	UUTAH10034220-S4	W911NF-14-1-0263	UNIVERSITY OF UTAH	\$0	\$244,950
Fractional PDEs for Conservation Laws and Beyond: Theory, Numerics and Applications	12.431	BROWN 00000825	W911NF1510562	BROWN UNIVERSITY	\$0	\$153,853
Physical behavior of layered superatomic crystals	12.431	CMU 1130214-394149	W911NF-17-1-0397	CARNEGIE MELLON UNIVERSITY	\$0	\$106,530
Multiscale Integration of Neural, Social, & Network Theory to Understand & Predict Transitions from Illness to Wellness: A Proof of Concept with Mindfulness, Hypnosis & Alcohol Use Disorders	12.431	UPENN 574211	W911NF1810244	UNIVERSITY OF PENNSYLVANIA	\$0	\$138,845

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Towards a Multi-Scale Theory on Coupled Human Mobility and Environmental Change	12.431	UFLRDA UFDSP00012221	W911NF1810267	UNIVERSITY OF FLORIDA	\$0	\$268,359	
Algorithms and Distribution-Free Models for Social and Information Networks	12.431	UCSCRUZ A19-0477-S001	W911NF1910294	UNIVERSITY OF CALIFORNIA SANTA CRUZ	\$0	\$73,813	
Molecular Triplet Qubits	12.431	NWU 60056798 CU	W911NF2010088	NORTHWESTERN UNIVERSITY	\$0	\$79,405	
					\$0	\$1,184,725	
<b>Basic, Applied, and Advanced Research in Science and Engineering</b>							
Constructing Mutually-derived Situational Awareness via EEG-informed Graph Based Transductive Inference	12.630	APX02-N004	W911-NF-10-2-0022	COGNITION AND NEUROERGONOMICS CONSORTIUM	\$0	\$134,363	
Micro and Meso Signatures of Success in Human-Autonomy Teams	12.630	NU 504149-78051	W911NF1920135	NORTHEASTERN UNIVERSITY	\$0	\$79,987	
					\$0	\$214,350	
<b>Air Force Defense Research Sciences Program</b>							
Krypton Disinfection Lighting	12.800	FUT CU20-2357	FA864920C0235	FAR UV TECHNOLOGIES INC	\$0	\$221,483	
Functional Testing Development for Automated Scaled Manufacturing	12.800	RFSUNY CU15-1693	FA8650-15-2-5220	RESEARCH FOUNDATION OF THE STATE UNIVERSITY OF NEW YORK	\$0	\$1,092	
Harnessing Strong-Field Mid-Infrared (IR) Lasers: Designer Beams of Relativistic Particles and THz-to-X-ray Light	12.800	UCB 1553896	FA9550-16-1-0121	UNIVERSITY OF COLORADO	\$0	\$36,816	
Magnet-Free Non-Reciprocal Metamaterials Based on Spatio-Temporal Modulation	12.800	RFCUNY CM00001529-00	FA9550-18-1-0379	RESEARCH FOUNDATION OF CITY UNIVERSITY OF NEW YORK	\$0	\$411,926	
(MURI) Theory, Implementations, and Applications of Mean Field Games: The Second Generation	12.800	PU SUB0000339	FA9550-19-1-0291	PRINCETON UNIVERSITY	\$0	\$58,679	
(MURI) Integrating Multiscale Modeling and Experiments to Develop a Meso-Informed Predictive Capability for Explosives Safety and Performance	12.800	UMISS C00064537-6	FA9550-19-1-0318	UNIVERSITY OF MISSOURI	\$0	\$155,837	
					\$0	\$885,833	
<b>Research and Technology Development</b>							
DECADES: Deeply-Customized Accelerator-Oriented Data Supply Systems Synthesis	12.910	PU SUB0000254	FA8650-18-2-7862	PRINCETON UNIVERSITY	\$0	\$387,462	
Smart Glass for Object Recognition	12.910	UWM 0000000704	FA8650-20-01-7028	UNIVERSITY OF WISCONSIN MADISON	\$0	\$76,109	
Electrogenic Regulation of Sleep Biomolecules for Circadian Cycle Adjustment	12.910	SU 62621899-192767	FA8650-21-2-7121	STANFORD UNIVERSITY	\$0	\$77,968	
Generating Alternatives for Interpretation and Analysis (GAIA)	12.910	USC 98328001	FA8750-18-2-0014	UNIVERSITY OF SOUTHERN CALIFORNIA	\$0	\$392,635	
CORAL: Combined Representations for Adept Learning	12.910	USC 124130701	FA8750-19-1-1000	UNIVERSITY OF SOUTHERN CALIFORNIA	\$0	\$232,904	
Continual Learning Across Synapses, Circuits, and Brain Areas	12.910	BRI 7000000603	HR0011-18-2-0025	BAYLOR RESEARCH INSTITUTE	\$0	\$122,146	
ZK Proofs Unbound: Next-Generation Pipelines for Real-world Applications	12.910	NYU F1400-1	HR00112020022	NEW YORK UNIVERSITY	\$0	\$125,192	
HEPIUS: Holistic electrical, ultrasonic, and physiological interventions unburdening those with spinal cord injury	12.910	JHU 2004888623	N6600012024075	JOHNS HOPKINS UNIVERSITY	\$0	\$62,305	
Discovering Common Sense from Video, Images, Text and Knowledge Bases	12.910	USC 123870980	N660011924032	UNIVERSITY OF SOUTHERN CALIFORNIA	\$0	\$567,849	

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						<b>R&amp;D Cluster</b>
<u>Federal Grantor / Pass-through Grantor</u>	<u>Assistance Listing No.</u>	<u>Award Identification No</u>	<u>Pass-through Contract Number</u>	<u>Passthrough Name</u>	<u>Subrecipients</u>	<u>Total Expenditures (Includes Subrecipients)</u>
Synthesizing and Quantifying Novel Videos for Classifying, Detecting, and Tracking Activities	12.910	UMARY 85946-Z9448201	W911NF2020009	UNIVERSITY OF MARYLAND	\$0	\$139,814
					<u>\$0</u>	<u>\$2,184,384</u>
Total Pass-through Programs					<b>\$55,341</b>	<b>\$12,014,426</b>
<b>Total</b>	<b>Department of Defense</b>				<b>\$7,239,527</b>	<b>\$49,179,495</b>
<b>Department of Commerce</b>						
<b>Direct Awards</b>						
Developing Novel Methods to Measure Historic Wetland Accretion	11.420	NA20NOS4200140			\$0	\$54,104
					<u>\$0</u>	<u>\$1,782,598</u>
Supporting Regional Implementation of Integrated Climate Resilience: Consortium for Climate Risk in the Urban Northeast Phase II	11.431	NA15OAR4310147			\$554,805	\$1,782,598
					<u>\$0</u>	<u>\$194,490</u>
Maintenance and Development of the Subseasonal Prediction Project (S2S) Database and Tools in IRI Data Library	11.459	NA19OAR4590225			\$0	\$194,490
					<u>\$0</u>	<u>\$50,073</u>
Development and Evaluation of New Statistical Calibration Methods for Multi-Model Ensemble Week 3-4 Probabilistic Forecasts	11.468	NA18NWS4680067			\$0	\$50,073
					<u>\$0</u>	<u>\$61,096</u>
Resolving the Effects of Resource Availability, Predation and Competition on Brown Tide Dynamics using Metatranscriptomics	11.478	NA15NOS4780199			\$0	\$61,096
					<u>\$50,820</u>	<u>\$448,678</u>
Experimentally-driven mapping of QoS-to-QoE for Mission-Critical Voice	11.609	70NANB19H003			\$50,820	\$448,678
Total Direct Award Programs					<b>\$605,625</b>	<b>\$2,591,039</b>
<b>Pass-through Awards</b>						
<b>National Oceanic &amp; Atmospheric Administration/Department of Commerce</b>						
High-resolution Shipboard Measurements of Phytoplankton Functional Types, Size Classes and Photosynthetic Competency in Support of SUOMI-VIIRS Ocean Color Observations	11.RD	GSTI SA18-CUNY01	ST-1330-17-CQ-0050	GLOBAL SCIENCE & TECHNOLOGY INC	\$0	\$31,030
					<u>\$0</u>	<u>\$31,030</u>
<b>Ocean Exploration</b>						
Data Services for E/V Nautilus	11.011	OET 60110-2	NA17OAR0110336	OCEAN EXPLORATION TRUST	\$0	-\$244
					<u>\$0</u>	<u>-\$244</u>

The accompanying footnotes are an integral part of the Schedule of Expenditures of Federal Awards

**The Trustees of Columbia University in the City of New York**  
**Schedule of Expenditures of Federal Awards**  
**For year ended June 30, 2021**

<u>Federal Grantor / Pass-through Grantor</u>	<u>Assistance Listing No.</u>	<u>Award Identification No</u>	<u>Pass-through Contract Number</u>	<u>Passthrough Name</u>	<u>Subrecipients</u>	<u>Total Expenditures (Includes Subrecipients)</u>	<b>R&amp;D Cluster</b>
<b>Climate and Atmospheric Research</b>							
Weddell Sea Moorings	11.431	UCAR SUBAWD001040	NA18OAR4310253B	UNIVERSITY CORPORATION FOR ATMOSPHERIC RESEARCH	\$0	\$85,358	
Integrating Seasonal and Sub-Seasonal Climate Information into Public Health Contexts: Co-Producing Decision Support Applications in Puerto Rico and Dominica	11.431	UA 470206	NA18OAR4310338	UNIVERSITY OF ARIZONA	\$0	\$36,751	
					<u>\$0</u>	<u>\$122,109</u>	
<b>National Oceanic and Atmospheric Administration (NOAA) Cooperative Institutes</b>							
Surface Water pCO2 measurements from Ships	11.432	UMIAMI OS00000053	NA15OAR4320064	UNIVERSITY OF MIAMI	\$0	\$188,554	
Data Services for E/V Nautilus	11.432	OET 60500-1	NA19OAR4320072	OCEAN EXPLORATION TRUST	\$0	\$48,763	
					<u>\$0</u>	<u>\$237,317</u>	
Total Pass-through Programs					<u>\$0</u>	<u>\$390,212</u>	
<b>Total</b>	<b>Department of Commerce</b>				<u><b>\$605,625</b></u>	<u><b>\$2,981,251</b></u>	
<b>Department of Education</b>							
<b>Direct Awards</b>							
CU-NYU Latin American & Caribbean Studies Consortium Project	84.015	P015A180149 - 21			\$93,028	\$448,458	
Efficient and Flexible Tools for Complex Multilevel and Latent Variable Modeling in Education Research	84.305	R305D190048 - 21			\$56,328	\$237,331	
Total Direct Award Programs					<u><b>\$149,356</b></u>	<u><b>\$685,789</b></u>	
<b>Total</b>	<b>Department of Education</b>				<u><b>\$149,356</b></u>	<u><b>\$685,789</b></u>	
<b>Department of Agriculture</b>							
<b>Direct Awards</b>							
Multi-Breadbasket Failures and Shocks to Food Systems: AgMIP Simulations	10.250	59-6000-0-0071			\$0	\$17,653	
Puerto Rico Forest Disturbance and Regrowth Data Collection	10.684	USFS 19-DG-11132762-045			\$0	\$41,220	
Total Direct Award Programs					<u><b>\$0</b></u>	<u><b>\$58,873</b></u>	
<b>Pass-through Awards</b>							
<b>Consumer Data and Nutrition Research</b>							

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**The Trustees of Columbia University in the City of New York**  
**Schedule of Expenditures of Federal Awards**  
**For year ended June 30, 2021**

<u>Federal Grantor / Pass-through Grantor</u>	<u>Assistance Listing No.</u>	<u>Award Identification No</u>	<u>Pass-through Contract Number</u>	<u>Passthrough Name</u>	<u>Subrecipients</u>	<u>Total Expenditures (Includes Subrecipients)</u>	<b>R&amp;D Cluster</b>
Understanding Food Insecurity in the PSID	10.253	UKRF 3200000900-20-231	USDA 58-4000-6-0059-R	UNIVERSITY OF KENTUCKY RESEARCH FOUNDATION	\$0	\$12,298	
					<u>\$0</u>	<u>\$12,298</u>	
Total Pass-through Programs					<u>\$0</u>	<u>\$12,298</u>	
<b>Total</b>	<b>Department of Agriculture</b>				<u>\$0</u>	<u>\$71,171</u>	
<b>Department of Homeland Security</b>							
<b>Direct Awards</b>							
Addressing Gaps in Housing Disaster Recovery: A Training Program for the Whole Community	97.005	EMW-2017-CA-00043-S01			\$0	\$354,386	
					<u>\$0</u>	<u>\$354,386</u>	
Total Direct Award Programs					<u>\$0</u>	<u>\$354,386</u>	
<b>Total</b>	<b>Department of Homeland Security</b>				<u>\$0</u>	<u>\$354,386</u>	
<b>Department of Interior</b>							
<b>Direct Awards</b>							
Baseline Assessments and SECURE Water Act Report 2021	15.RD	DIBR 140R8119P0110			\$0	\$95,962	
					<u>\$0</u>	<u>\$95,962</u>	
Zero Liquid Discharge Treatment of Inland Reverse Osmosis Concentrates by Solvent Extraction Desalination and Induced Precipitation	15.506	DIBR R19AC00111			\$0	\$172,672	
					<u>\$0</u>	<u>\$172,672</u>	
Earthquake Simulators and Next Generation Hazard Models: Improving Deformation and Fault Compatibility -- Collaborative Research with Columbia University and USGS Golden	15.807	G20AP00101			\$0	\$156,550	
					<u>\$0</u>	<u>\$156,550</u>	
Characterizing Global Variability in Groundwater Arsenic	15.808	G19AC00063			\$0	\$26,051	
					<u>\$0</u>	<u>\$26,051</u>	
Total Direct Award Programs					<u>\$0</u>	<u>\$451,235</u>	
<b>Pass-through Awards</b>							
<b>Earthquake Hazards Program Assistance</b>							
SCEC5 USGS Year 3 Research Collaboration at the Columbia University	15.807	USC 118062194	G17AC00047	UNIVERSITY OF SOUTHERN CALIFORNIA	\$0	\$7	
					<u>\$0</u>	<u>\$7</u>	
Total Pass-through Programs					<u>\$0</u>	<u>\$7</u>	
<b>Total</b>	<b>Department of Interior</b>				<u>\$0</u>	<u>\$451,242</u>	
<b>Department of Justice</b>							
<b>Pass-through Awards</b>							

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**The Trustees of Columbia University in the City of New York**  
**Schedule of Expenditures of Federal Awards**  
**For year ended June 30, 2021**

<u>Federal Grantor / Pass-through Grantor</u>	<u>Assistance Listing No.</u>	<u>Award Identification No</u>	<u>Pass-through Contract Number</u>	<u>Passthrough Name</u>	<u>Subrecipients</u>	<u>Total Expenditures (Includes Subrecipients)</u>	<b>R&amp;D Cluster</b>
<b>National Institute of Justice Research, Evaluation, and Development Project Grants</b>							
Preventing firearm violence: an evaluation of urban blight removal in high risk	16.560	UCD A18-1255-S003	2017-IJ-CX-0021	UNIVERSITY OF CALIFORNIA, DAVIS	\$0	\$11,890	
					<u>\$0</u>	<u>\$11,890</u>	
<b>Second Chance Act Reentry Initiative</b>							
Learning Lab for Justice-Involved Emerging Adults in Massachusetts	16.812	UTEC CU20-2547	BJA 2017-11540	UTEC	\$0	\$43,189	
					<u>\$0</u>	<u>\$43,189</u>	
Total Pass-through Programs					<u>\$0</u>	<u>\$55,079</u>	
<b>Total Department of Justice</b>					<u>\$0</u>	<u>\$55,079</u>	
<b>Department of State</b>							
<b>Direct Awards</b>							
Improving Detection and Location of Small Seismic Events Using Data from A Rare Deployment	19.RD	19AQMM20P0732			\$0	\$123,298	
					<u>\$0</u>	<u>\$123,298</u>	
Open Startup Morocco Open Cooperative Agreement 2020	19.040	SMO55020CA0039			\$0	\$79,442	
					<u>\$0</u>	<u>\$79,442</u>	
Supporting Chain of Command Analysis, Documentation, Preservation and Building Capacity of Civil Society to Pursue Justice and Accountability for Abuses Committed in Syria	19.345	SLMAQM20GR2491			\$170,607	\$238,503	
					<u>\$170,607</u>	<u>\$441,243</u>	
<b>Pass-through Awards</b>							
<b>International Programs to Support Democracy, Human Rights and Labor</b>							
CASEDATA Initiative: Coordinating Approaches to Systematize & Expand Digital Rights Datasets And Taxonomies to Enhance Advocacy	19.345	SMEX DRL176-18-102	DS S-LMAQM-18-GR-2092	SOCIAL MEDIA EXCHANGE	\$0	\$10,721	
Developing Transitional Justice	19.345	NED 2020-08117	S-LMAQM-20-GR-2006	NATIONAL ENDOWMENT FOR DEMOCRACY	\$0	\$57,904	
					<u>\$0</u>	<u>\$68,625</u>	
Total Pass-through Programs					<u>\$0</u>	<u>\$68,625</u>	
<b>Total Department of State</b>					<u>\$170,607</u>	<u>\$509,868</u>	
<b>Department of Transportation</b>							
<b>Pass-through Awards</b>							
<b>Highway Research and Development Program</b>							
Inspection and Evaluation of Suspension Bridge Cables	20.200	MM CU18-2437	DTFH61-13-H-00024	MODJESKI AND MASTERS INC.	\$0	\$67,510	
					<u>\$0</u>	<u>\$67,510</u>	
<b>University Transportation Centers Program</b>							

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**The Trustees of Columbia University in the City of New York**  
**Schedule of Expenditures of Federal Awards**  
**For year ended June 30, 2021**

						<b>R&amp;D Cluster</b>
<u>Federal Grantor / Pass-through Grantor</u>	<u>Assistance Listing No.</u>	<u>Award Identification No</u>	<u>Pass-through Contract Number</u>	<u>Passthrough Name</u>	<u>Subrecipients</u>	<u>Total Expenditures (Includes Subrecipients)</u>
Center for Advanced Infrastructure and Transportation (CAIT) Regional UTC Consortium	20.701	RUTGER PO 966112/PID#824227	DOT 69A3551847102	RUTGERS, THE STATE UNIVERSITY OF NJ DEPT. OF RADIOLOGY	\$0	\$52,859
Total Pass-through Programs					<u>\$0</u>	<u>\$52,859</u>
<b>Total Department of Transportation</b>					<u>\$0</u>	<u>\$120,369</u>
<b>Department of Veterans Affairs</b>						
<b>Direct Awards</b>						
Neuronal Subtype Specific Epigenetic Regulation in Schizophrenia	64.RD	DVAMC CU16-3298			\$0	\$4,583
Total Direct Award Programs					<u>\$0</u>	<u>\$4,583</u>
<b>Total Department of Veterans Affairs</b>					<u>\$0</u>	<u>\$4,583</u>
<b>Dept. of HousingUrban Development</b>						
<b>Direct Awards</b>						
Urban fungal exposure, sensitization and asthma among a low-income population	14.906	NYHHUO042-18			\$35,921	\$379,274
Total Direct Award Programs					<u>\$35,921</u>	<u>\$379,274</u>
<b>Total Dept. of HousingUrban Development</b>					<u>\$35,921</u>	<u>\$379,274</u>
<b>Environmental Protection Agency</b>						
<b>Direct Awards</b>						
The Columbia Center for Children s Environmental Health	66.509	EPA 83615401			\$220,652	\$262,418
Total Direct Award Programs					<u>\$220,652</u>	<u>\$262,418</u>
<b>Pass-through Awards</b>						
<b>Environmental Protection Agency</b>						
Support for EPA s Activities - Examining Sectoral Impacts of Climate Change and Linking Observations and Projections	66.RD	ICFI 20SSSK0016	68HERH19D0029	ICF INTERNATIONAL	\$0	\$64,130
					<u>\$0</u>	<u>\$64,130</u>
<b>Long Island Sound Program</b>						
Refined Integration of Remote Sensing with Biological Parameters for Improved Management of LIS Water Quality/Long Island Sound Study 2018-2022	66.437	CCONY CM00005171-01	LI-96261317-0	CITY COLLEGE OF NEW YORK	\$0	\$22,645
					<u>\$0</u>	<u>\$22,645</u>
<b>Science To Achieve Results (STAR) Research Program</b>						
The Multi-Ethnic Study of Atherosclerosis and Air Pollution (MESA Air): Next Stage	66.509	UWSC10109	838300001-0	UNIVERSITY OF WASHINGTONSEATTLE WASHINGTON	\$0	\$61,617
Mainstream Deammonification with Biological Phosphorus Removal	66.509	WARF 5096	EPA 84008601-0	WATER RESEARCH FOUNDATION	\$0	\$957

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**The Trustees of Columbia University in the City of New York**  
**Schedule of Expenditures of Federal Awards**  
**For year ended June 30, 2021**

<u>Federal Grantor / Pass-through Grantor</u>	<u>Assistance Listing No.</u>	<u>Award Identification No</u>	<u>Pass-through Contract Number</u>	<u>Passthrough Name</u>	<u>Subrecipients</u>	<u>Total Expenditures (Includes Subrecipients)</u>
					\$0	\$62,574
<b>Office of Research and Development Consolidated Research/Training/Fellowships</b>						
Accounting for the Health Benefits of Air Pollution Regulations in China, 2008-2020	66.511	BU 4500003512	EPA CR-83998101	BOSTON UNIVERSITY	\$0	\$9,375
Total Pass-through Programs					<u>\$0</u>	<u>\$9,375</u>
<b>Total Environmental Protection Agency</b>					<u>\$0</u>	<u>\$158,724</u>
<b>Japan US Friendship Commission</b>					<u>\$220,652</u>	<u>\$421,142</u>
<b>Direct Awards</b>						
2020-2021 Japan-U.S. Friendship Commission Prize for the Translation of Japanese Literature	90.300	JAPUS 20-07			\$0	\$9,532
Total Direct Award Programs					<u>\$0</u>	<u>\$9,532</u>
<b>Total Japan US Friendship Commission</b>					<u>\$0</u>	<u>\$9,532</u>
<b>Nat. Endowment for the ArtsHumanities</b>						
<b>Direct Awards</b>						
The Unknowing of American History: Past, Present, and the Historical Novel in the U.S.	45.160	FEL-262726-19			\$0	\$-2
Craft Techniques and Knowledge Systems in a 16th-Century Artist s Manuscript: An Open-Access Critical Edition and Translation	45.161	NEH RQ-249842-16			\$0	\$5,079
Total Direct Award Programs					<u>\$0</u>	<u>\$5,079</u>
<b>Pass-through Awards</b>						
<b>Promotion of the Humanities Office of Digital Humanities</b>						
Analyzing Large-Scale Data for Patterns in Jazz	45.169	UIL 087569-16852	HJ-253587-17	UNIVERSITY OF ILLINOIS, BOARD OF TRUSTEES	\$0	\$5,242
Total Pass-through Programs					<u>\$0</u>	<u>\$5,242</u>
<b>Total Nat. Endowment for the ArtsHumanities</b>					<u>\$0</u>	<u>\$10,319</u>
<b>National Archives and Records Administration</b>						
<b>Direct Awards</b>						
The Selected Papers of John Jay, Year 16 (2019-2020)	89.003	NHPRC PE-102772-19			\$0	\$31,009
Total Direct Award Programs					<u>\$0</u>	<u>\$31,009</u>
<b>Total National Archives and Records Administration</b>					<u>\$0</u>	<u>\$31,009</u>

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**The Trustees of Columbia University in the City of New York**  
**Schedule of Expenditures of Federal Awards**  
**For year ended June 30, 2021**

<u>Federal Grantor / Pass-through Grantor</u>	<u>Assistance Listing No.</u>	<u>Award Identification No.</u>	<u>Pass-through Contract Number</u>	<u>Passthrough Name</u>	<u>Subrecipients</u>	<b>R&amp;D Cluster</b>
						<u>Total Expenditures (Includes Subrecipients)</u>
<b>Other Agencies / Gov't</b>						
<b>Direct Awards</b>						
Immunogens of high impact livestock pathogens	99.RD	KSU-1048			\$0	\$468,821
Total Direct Award Programs					<b>\$0</b>	<b>\$468,821</b>
<b>Pass-through Awards</b>						
<b>Small Business Development Centers</b>						
SBDC-RFSUNY FY2020-2021	59.037	SUNYRF 86197	SBA 1157128	RESEARCH FOUNDATION OF THE STATE UNIVERSITY OF NEW YORK	\$0	\$70,768
The New York Small Business Development Center (NY SBDC)	59.037	SUNYRF 89275	SBA 1163898	RESEARCH FOUNDATION OF THE STATE UNIVERSITY OF NEW YORK	\$0	\$239,405
Total Pass-through Programs					<b>\$0</b>	<b>\$310,173</b>
<b>Total Other Agencies / Gov't</b>					<b>\$0</b>	<b>\$778,994</b>
<b>Social Security Administration</b>						
<b>Pass-through Awards</b>						
<b>Social Security Administration/DHHS</b>						
Early Intervention Mental Health Demonstration Study	96.RD	WESTAT 6464-S02	SS001660014	WESTAT	\$0	\$85,253
Total Pass-through Programs					<b>\$0</b>	<b>\$85,253</b>
<b>Total Social Security Administration</b>					<b>\$0</b>	<b>\$85,253</b>
<b>United States Agency for International Dvlpt.</b>						
<b>Pass-through Awards</b>						
<b>U.S. Agency for International Development</b>						
Strengthening Disaster and Climate Resilience in the Eastern and Southern Caribbean (SDCR) Project	98.RD	CIMH CU20-1330	AID CU20-1330	CARIBBEAN INST FOR METEOROLOGY & HYDROLO	\$0	\$34,257
SERVIR for USAID West Africa	98.RD	TETRAD 1865-Columbia-001	AID-OAA-I-13-00058	TETRA TECH ARD	\$0	\$22,934
West Africa Biodiversity and Climate Change	98.RD	TETRAARD 1861-CIESIN-000-001	AID-OAA-I-13-0058	TETRA TECH ARD	\$0	\$11,983
Proposed Malaria MVA-VLP Study	98.RD	Leidos PO10181586	U.S. AGENCY FOR INTERNATIONAL	LEIDOS BIOMEDICAL RESEARCH INC	\$0	\$-1,158
Total Pass-through Programs					<b>\$0</b>	<b>\$68,016</b>
<b>USAID Foreign Assistance for Programs Overseas</b>						
Developing Acute Care and Emergency Referral Systems	98.001	CATHOLICRS CU 18-2493	7200AA18CA00051	CATHOLIC RELIEF SERVICES	\$308,989	\$634,076
Strengthening Education in Northeast Nigeria States (SENSE)	98.001	AUN 2019/01/72062019CA00002	AID 72062019CA00002	AMERICAN UNIVERSITY OF NIGERIA	\$0	\$186,160
Malaria Lab Resistance Mutants (Columbia)	98.001	MMV RD-08-0015	AID CU09-1816	MEDICINES FOR MALARIA VENTURE	\$0	\$305,161

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**The Trustees of Columbia University in the City of New York**  
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**For year ended June 30, 2021**

						<b>R&amp;D Cluster</b>
<u>Federal Grantor / Pass-through Grantor</u>	<u>Assistance Listing No.</u>	<u>Award Identification No</u>	<u>Pass-through Contract Number</u>	<u>Passthrough Name</u>	<u>Subrecipients</u>	<u>Total Expenditures (Includes Subrecipients)</u>
COVID-19-PREDICT-2 Davis	98.001	UCD 201403200-09	AID-OAA-A-14-00102	UNIVERSITY OF CALIFORNIA, DAVIS	\$0	\$163,697
Preparing for Ring Opportunities through Market Introduction Support and Knowledge Exchange (PROMISE)	98.001	FHID PO20002930	AID-OAA-A-15-00045	FHI DEVELOPMENT 360 LLC	\$0	\$100,933
Evaluating the implementation & effectiveness of integrated psychosocial intervention to reduce psychological distress & intimate partner violence among forced migrants in Ecuador& Panama	98.001	FY20-A04-6024	AID-OAA-A-17-00002	HIAS	\$0	\$46,601
Clean Air Catalyst: A Global Partnership for Accelerating Clean Air Solutions	98.001	WRI G2264	USAID 7200AA20CA00014	WORLD RESOURCES INSTITUTE	\$0	\$56,580
					<u>\$308,989</u>	<u>\$1,493,208</u>
Total Pass-through Programs					<b>\$308,989</b>	<b>\$1,561,224</b>
<b>Total</b>	<b>United States Agency for International Dvlpt.</b>				<b>\$308,989</b>	<b>\$1,561,224</b>
<b>Total:</b>	<b>Research &amp; Development Cluster</b>				<b>\$114,928,541</b>	<b>\$835,876,144</b>

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**The Trustees of Columbia University in the City of New York**  
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**Student Financial Aid Cluster**

<u>Federal Grantor / Pass-through Grantor</u>	<u>Assistance Listing No.</u>	<u>Award Identification No</u>	<u>Pass-through Contract Number</u>	<u>Passthrough Name</u>	<u>Subrecipients</u>	<u>Total Expenditures (Includes Subrecipients)</u>
<b>Student Financial Assistance Cluster</b>						
<b>Department of Health &amp; Human Services</b>						
<b>Direct Awards</b>						
Health Professionals	93.342				\$0	\$10,740,207
.....						
Nursing Students	93.364				\$0	\$989,398
.....						
Total Direct Award Programs					<u>\$0</u>	<u>\$11,729,605</u>
<b>Total: Department of Health &amp; Human Services (Excluding NIH)</b>					<u>\$0</u>	<u>\$11,729,605</u>
<b>Department of Health &amp; Human Services</b>						
<b>Direct Awards</b>						
Nurse Faculty Loan Program (NFLP)	93.264	2E01HP27012 02 00			\$0	\$276,516
.....						
Health Professions Student Loans, Including Primary Care Loans/Loans for Disadvantaged Students	93.342	4E11HP27286-03-00			\$0	\$943,818
.....						
Total Direct Award Programs					<u>\$0</u>	<u>\$1,220,334</u>
<b>Total: Department of Health &amp; Human Services (Excluding NIH)</b>					<u>\$0</u>	<u>\$1,220,334</u>
<b>Department of Education</b>						
<b>Direct Awards</b>						
Federal Perkins Loans	84.038				\$0	\$33,361,784
.....						
Total Direct Award Programs					<u>\$0</u>	<u>\$33,361,784</u>
<b>Total: Department of Education</b>					<u>\$0</u>	<u>\$33,361,784</u>

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**The Trustees of Columbia University in the City of New York**  
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**For year ended June 30, 2021**

**Student Financial Aid Cluster**

<u>Federal Grantor / Pass-through Grantor</u>	<u>Assistance Listing No.</u>	<u>Award Identification No</u>	<u>Pass-through Contract Number</u>	<u>Passthrough Name</u>	<u>Subrecipients</u>	<u>Total Expenditures (Includes Subrecipients)</u>
Federal Supplemental Education Opportunity Grant 2020-2021	84.007	P007A202737			\$0	\$787,764
Federal Work Study 2020-2021	84.033	P033A202737			\$0	\$6,012,996
Federal Pell Grant Program 2020-2021	84.063	P063P201840			\$0	\$10,477,506
Federal Direct Loan Program 2020/2021	84.268	P268K211840			\$0	\$314,514,541
Total Direct Award Programs					<u>\$0</u>	<u>\$331,792,807</u>
<b>Total: Department of Education</b>					<u>\$0</u>	<u>\$331,792,807</u>
<b>Total: Student Financial Assistance Cluster</b>					<u>\$0</u>	<u>\$378,104,530</u>

The accompanying footnotes are an integral part of the Schedule of Expenditures of Federal Awards

**The Trustees of Columbia University in the City of New York**  
**Schedule of Expenditures of Federal Awards**  
**For year ended June 30, 2021**

						<b>Global Aids</b>
<u>Federal Grantor / Pass-through Grantor</u>	<u>Assistance Listing No.</u>	<u>Award Identification No</u>	<u>Pass-through Contract Number</u>	<u>Passthrough Name</u>	<u>Subrecipients</u>	<u>Total Expenditures (Includes Subrecipients)</u>
<b>Global Aids</b>						
<b>Department of Health &amp; Human Services</b>						
<b>Direct Awards</b>						
Global AIDS	93.067	6NU2GGH001944-05-09			\$11,399,141	\$189,399,648
Total Direct Award Programs					<u>\$11,399,141</u>	<u>\$189,399,648</u>
<b>Pass-through Awards</b>						
<b>Global AIDS</b>						
Key Populations Investment Fund Project	93.067	IRDO-1NU2GGH001963-ICA P	1NU2GGH001963	IMPACT RESEARCH AND DEVELOPMENTORGANIZATION	\$0	\$71,142
COVID-19-FGH Surveillance Capacity Building in Mozambique	93.067	GH001943-04-27	6NU2GGH001943-04-05	VANDERBILT UNIVERSITY MEDICAL CENTER	\$0	\$80,380
Enhance Population Access to Comprehensive HIV/AIDS Services in Order to Achieve HIV/AIDS Epidemic Control in the Democratic Republic of Congo (DRC), Specifically in Kinshasa	93.067	HPP CU 18-3069	NU2GGH002220	HUMANA PEOPLE TO PEOPLE	\$0	\$147,228
Total Pass-through Programs					<u>\$0</u>	<u>\$298,750</u>
<b>Total Department of Health &amp; Human Services (Excluding NIH)</b>					<u>\$11,399,141</u>	<u>\$189,698,398</u>
<b>Grand Total: Department of Health &amp; Human Services</b>					<u>\$11,399,141</u>	<u>\$189,698,398</u>
<b>Total: Global Aids</b>					<u>\$11,399,141</u>	<u>\$189,698,398</u>

The accompanying footnotes are an integral part of the Schedule of Expenditures of Federal Awards

**The Trustees of Columbia University in the City of New York**  
**Schedule of Expenditures of Federal Awards**  
**For year ended June 30, 2021**

**Higher Education Emergency Relief Fund**

<u>Federal Grantor / Pass-through Grantor</u>	<u>Assistance Listing No.</u>	<u>Award Identification No</u>	<u>Pass-through Contract Number</u>	<u>Passthrough Name</u>	<u>Subrecipients</u>	<u>Total Expenditures (Includes Subrecipients)</u>
<b>Higher Education Emergency Relief Fund</b>						
<b>Department of Education</b>						
<b>Direct Awards</b>						
COVID-19 CARES Act Columbia University CARE Act Application	84.425E	P425E202142			\$0	\$6,769,789
.....						
COVID-19 CARES Act Columbia University HEERF II Application - Institutional Portion	84.425F	P425F205200			\$0	\$9,216,667
.....						
Total Direct Award Programs					<u>\$0</u>	<u>\$15,986,456</u>
<b>Total</b>	<b>Department of Education</b>				<u>\$0</u>	<u>\$15,986,456</u>
<b>Total:</b>	<b>Higher Education Emergency Relief Fund</b>				<u>\$0</u>	<u>\$15,986,456</u>

The accompanying footnotes are an integral part of the Schedule of Expenditures of Federal Awards

**The Trustees of Columbia University in the City of New York**  
**Schedule of Expenditures of Federal Awards**  
**For year ended June 30, 2021**

<u>Federal Grantor / Pass-through Grantor</u>	<u>Assistance Listing No.</u>	<u>Award Identification No</u>	<u>Pass-through Contract Number</u>	<u>Passthrough Name</u>	<u>Subrecipients</u>	<u>Total Expenditures (Includes Subrecipients)</u>
<b>Highway Planning and Construction Cluster</b>						
<b>Department of Transportation</b>						
<b>Pass-through Awards</b>						
<b>Highway Planning and Construction</b>						
September 11th Program for Regional Transportation Planning: Year 2020-2021 Academic Initiative	20.205	RFCUNY CM00005129	DOT CU20-3280	RESEARCH FOUNDATION OF CITY UNIVERSITY OF NEW YORK	\$0	\$26,000
					\$0	\$26,000
Total Pass-through Programs					<b>\$0</b>	<b>\$26,000</b>
<b>Total</b>	<b>Department of Transportation</b>				<b>\$0</b>	<b>\$26,000</b>
<b>Total:</b>	<b>Highway Planning and Construction Cluster</b>				<b>\$0</b>	<b>\$26,000</b>

The accompanying footnotes are an integral part of the Schedule of Expenditures of Federal Awards



**The Trustees of Columbia University in the City of New York**  
**Schedule of Expenditures of Federal Awards**  
**For year ended June 30, 2021**

<u>Federal Grantor / Pass-through Grantor</u>	<u>Assistance Listing No.</u>	<u>Award Identification No</u>	<u>Pass-through Contract Number</u>	<u>Passthrough Name</u>	<u>Subrecipients</u>	<u>Total Expenditures (Includes Subrecipients)</u>
<b>Highway Safety Cluster</b>						
<b>Department of Transportation</b>						
<b>Pass-through Awards</b>						
<b>National Priority Safety Programs</b>						
Integrating Single and Polysubstance Impaired Driving Data into the Crash Outcome Data Evaluation System (CODES)	20.616	HRI 6582-01	DOT CU20-1445	HEALTH RESEARCH INC	\$0	\$45,536
					\$0	\$45,536
Total Pass-through Programs					<b>\$0</b>	<b>\$45,536</b>
<b>Total</b>	<b>Department of Transportation</b>				<b>\$0</b>	<b>\$45,536</b>
<b>Total:</b>	<b>Highway Safety Cluster</b>				<b>\$0</b>	<b>\$45,536</b>

The accompanying footnotes are an integral part of the Schedule of Expenditures of Federal Awards

**The Trustees of Columbia University in the City of New York**  
**Schedule of Expenditures of Federal Awards**  
**For year ended June 30, 2021**

						<b>TRIO Cluster</b>
<u>Federal Grantor / Pass-through Grantor</u>	<u>Assistance Listing No.</u>	<u>Award Identification No</u>	<u>Pass-through Contract Number</u>	<u>Passthrough Name</u>	<u>Subrecipients</u>	<u>Total Expenditures (Includes Subrecipients)</u>
<b>TRIO Cluster</b>						
<b>Department of Education</b>						
<b>Direct Awards</b>						
CCO DDC Talent Search	84.044	DE-P044A160893			\$0	\$438,519
.....						
TRIO Upward Bound Program	84.047	P047A170670-21			\$0	\$882,975
.....						
Total Direct Award Programs					<u>\$0</u>	<u>\$1,321,494</u>
<b>Total</b>	<b>Department of Education</b>				<u>\$0</u>	<u>\$1,321,494</u>
<b>Total:</b>	<b>TRIO Cluster</b>				<u>\$0</u>	<u>\$1,321,494</u>

The accompanying footnotes are an integral part of the Schedule of Expenditures of Federal Awards

**The Trustees of Columbia University in the City of New York**  
**Schedule of Expenditures of Federal Awards**  
**For year ended June 30, 2021**

<u>Federal Grantor / Pass-through Grantor</u>	<u>Assistance Listing No.</u>	<u>Award Identification No</u>	<u>Pass-through Contract Number</u>	<u>Passthrough Name</u>	<u>Subrecipients</u>	<u>Total Expenditures (Includes Subrecipients)</u>
<b>Other Programs</b>						
<b>Department of Health &amp; Human Services</b>						
<b>Direct Awards</b>						
Centers for Disease Control and Prevention/DHHS	93 .U01	CDC#14IPA1417004			\$0	\$24,270
.....						
HIV-Related Training and Technical Assistance	93.145	5U1OHA29291-06-00			\$1,845,158	\$3,550,051
.....						
Health Systems Strengthening and HIV/AIDS Prevention, Care and Treatment under the President's Emergency Plan for AIDS Relief	93.266	6UH6HA30740-04-01			\$113,867	\$6,138,950
.....						
Complex Humanitarian Emergency and War-Related Injury Public Health Activities	93.269	5U01GH001644-05-02			\$0	\$110,364
.....						
COVID-19-Strengthening Sustainability of Global Health Security Objectives in Sierra Leone	93.318	6NU2HGH000035-01-01			\$0	\$2,594,646
.....						
Grants for Primary Care Training and Enhancement	93.884	4T0BHP29302- 05- 01			\$0	\$14,226
.....						
Ryan White HIV/AIDS Dental Reimbursement and Community Based Dental Partnership Grants	93.924	1T22HA396390100			\$0	\$113,807
.....						
Total Direct Award Programs					<u>\$1,959,025</u>	<u>\$12,546,314</u>
<b>Pass-through Awards</b>						
<b>Health Careers Opportunity Program</b>						
Health Careers Opportunity Program	93.822	ISMMS 0253-6645-4609	1D18HP29036-01-00	ICAHN SCHOOL OF MEDICINE AT MOUNT SINAI	\$0	\$96,587
.....						
					<u>\$0</u>	<u>\$96,587</u>
<b>HIV Prevention Activities Non-Governmental Organization Based</b>						
Comprehensive High-Impact HIV Prevention Projects for Community- Based Organizations	93.939	ASCNYC CU161123	U65PS004743	AIDS SERVICE CENTER OF LOWER MANHATTANINC	\$0	\$78,605
.....						
					<u>\$0</u>	<u>\$78,605</u>
Total Pass-through Programs					<u>\$0</u>	<u>\$175,192</u>

The accompanying footnotes are an integral part of the Schedule of Expenditures of Federal Awards

**The Trustees of Columbia University in the City of New York**  
**Schedule of Expenditures of Federal Awards**  
**For year ended June 30, 2021**

						<b>Other Programs</b>
<u>Federal Grantor / Pass-through Grantor</u>	<u>Assistance Listing No.</u>	<u>Award Identification No</u>	<u>Pass-through Contract Number</u>	<u>Passthrough Name</u>	<u>Subrecipients</u>	<u>Total Expenditures (Includes Subrecipients)</u>
<b>Total Department of Health &amp; Human Services (Excluding NIH)</b>					<b>\$1,959,025</b>	<b>\$12,721,506</b>
<b>National Institute of Health</b>						
<b>Pass-through Awards</b>						
<b>Maternal and Child Health Services Block Grant to the States</b>						
(Rape Crisis) Enough is Enough	93.994	DOH01-C33377GG-3450000	HRSA CU18-3003	NEW YORK STATE DEPARTMENT OF HEALTH	\$0	\$98,498
					<u>\$0</u>	<u>\$98,498</u>
Total Pass-through Programs					<u>\$0</u>	<u>\$98,498</u>
<b>Total National Institute of Health</b>					<b>\$0</b>	<b>\$98,498</b>
<b>Grand Total: Department of Health &amp; Human Services</b>					<b>\$1,959,025</b>	<b>\$12,820,004</b>
<b>National Aeronautics &amp; Space Administration</b>						
<b>Direct Awards</b>						
NASA Johnson Space Center- Intergovernmental Personnel Agreement (IPA)	43 .U01	IPA-AH-19-060			\$0	\$243,067
Variable Stiffness Compliant Mechanisms for Deployable, Reconfigurable Structures	43.012	80NSSC20K0587			\$0	\$75,522
Total Direct Award Programs					<u>\$0</u>	<u>\$318,589</u>
<b>Total National Aeronautics &amp; Space Administration</b>					<b>\$0</b>	<b>\$318,589</b>
<b>Department of Defense</b>						
<b>Direct Awards</b>						
Hacking for Defense at Columbia University	12.300	N00014-19-1-2002			\$0	\$21,482
Optogenetic Tools in Neuroscience	12.431	W911NF1910495			\$0	\$9,718
Total Direct Award Programs					<u>\$0</u>	<u>\$31,200</u>
<b>Total Department of Defense</b>					<b>\$0</b>	<b>\$31,200</b>
<b>Department of Education</b>						
<b>Direct Awards</b>						
FLAS: Middle East Institute, Columbia University, Title VI Proposal	84.015	P015B180080-21			\$6,868	\$1,132,931

The accompanying footnotes are an integral part of the Schedule of Expenditures of Federal Awards

**The Trustees of Columbia University in the City of New York**  
**Schedule of Expenditures of Federal Awards**  
**For year ended June 30, 2021**

<u>Federal Grantor / Pass-through Grantor</u>	<u>Assistance Listing No.</u>	<u>Award Identification No</u>	<u>Pass-through Contract Number</u>	<u>Passthrough Name</u>	<u>Subrecipients</u>	<u>Other Programs</u> <u>Total Expenditures</u> <u>(Includes Subrecipients)</u>
Total Direct Award Programs					<u>\$6,868</u>	<u>\$1,132,931</u>
<b>Total Department of Education</b>					<u>\$6,868</u>	<u>\$1,132,931</u>
<b>Department of Homeland Security</b>						
<b>Direct Awards</b>						
Enhancing Financial Literacy of Individuals and Businesses for Post-Disaster Recovery	97.005	EMW-2018-CA-00069-S01			\$0	\$863,263
.....						
Total Direct Award Programs					<u>\$0</u>	<u>\$863,263</u>
<b>Total Department of Homeland Security</b>					<u>\$0</u>	<u>\$863,263</u>
<b>Department of Interior</b>						
<b>Direct Awards</b>						
IPA: Updating and Extending Scaling Analysis for the Next US National Seismic Hazard Map	15 .U01	USGS CU20-2056			\$0	\$181,489
.....						
Total Direct Award Programs					<u>\$0</u>	<u>\$181,489</u>
<b>Total Department of Interior</b>					<u>\$0</u>	<u>\$181,489</u>
<b>Department of Justice</b>						
<b>Direct Awards</b>						
ReNew Court Pilot	16 .U01	USDCNJ CU19-2776			\$0	\$72,974
.....						
Total Direct Award Programs					<u>\$0</u>	<u>\$72,974</u>
<b>Total Department of Justice</b>					<u>\$0</u>	<u>\$72,974</u>
<b>Department of State</b>						
<b>Direct Awards</b>						
FY 2019 Ngawang Choephel Fellows Program	19.012	S-ECAGD-19-GR-0128			\$0	\$52,152
.....						
Support the Regional Framework Agreements (RFA) on Air Pollution in Africa with a focus on East Africa	19.017	SLMAQM20CA2347			\$0	\$6,407
.....						
Fostering Entrepreneurship in Tunisian Higher Education	19.021	DS STS80018GR0029			\$0	\$15,612
.....						

The accompanying footnotes are an integral part of the Schedule of Expenditures of Federal Awards

**The Trustees of Columbia University in the City of New York**  
**Schedule of Expenditures of Federal Awards**  
**For year ended June 30, 2021**

<u>Federal Grantor / Pass-through Grantor</u>	<u>Assistance Listing No.</u>	<u>Award Identification No</u>	<u>Pass-through Contract Number</u>	<u>Passthrough Name</u>	<u>Subrecipients</u>	<u>Other Programs</u> <u>Total Expenditures</u> <u>(Includes Subrecipients)</u>
Total Direct Award Programs					<u>\$0</u>	<u>\$74,171</u>
<b>Total Department of State</b>					<u>\$0</u>	<u>\$74,171</u>
<b>Department of Veterans Affairs</b>						
<b>Direct Awards</b>						
Post exertion malaise in GWI Brain autonomic and behavioral interactions	64 .U01	36C24E19D0034			\$0	\$254,778
.....						
Total Direct Award Programs					<u>\$0</u>	<u>\$254,778</u>
<b>Pass-through Awards</b>						
<b>Department of Veterans Affairs</b>						
Dynamic Regulation of Erythropoietin Gene Expression in Mammals - IPAs	64 .U01	JJPVA CU20-0737	DVAMC IPA	JAMES J PETERS VA MEDICAL CENTER	\$0	\$164,389
.....						
Total Pass-through Programs					<u>\$0</u>	<u>\$164,389</u>
<b>Total Department of Veterans Affairs</b>					<u>\$0</u>	<u>\$419,167</u>
<b>Nat. Endowment for the ArtsHumanities</b>						
<b>Direct Awards</b>						
EARLY / MODERN: Pre-Classical to Contemporary Concerts (Early Music, Jazz, Composer Portraits)	45.024	NEA 1865163-31-21			\$0	\$15,000
.....						
Humanities Connections Curriculum for Medicine, Literature and Society	45.162	AK-255276-17			\$0	\$-1
.....						
Total Direct Award Programs					<u>\$0</u>	<u>\$14,999</u>
<b>Total Nat. Endowment for the ArtsHumanities</b>					<u>\$0</u>	<u>\$14,999</u>
<b>Other Agencies / Gov't</b>						
<b>Pass-through Awards</b>						
<b>Small Business Development Centers</b>						
COVID-19-The Small Business Development Centers Cares	59.037	SUNYRF 88013	SBA CU20-2061	RESEARCH FOUNDATION OF THE STATE UNIVERSITY OF NEW YORK	\$0	\$232,075
.....						
Total Pass-through Programs					<u>\$0</u>	<u>\$232,075</u>
<b>Total Other Agencies / Gov't</b>					<u>\$0</u>	<u>\$232,075</u>
<b>United States Agency for International Dvlpt.</b>						
<b>Direct Awards</b>						

The accompanying footnotes are an integral part of the Schedule of Expenditures of Federal Awards

**The Trustees of Columbia University in the City of New York**  
**Schedule of Expenditures of Federal Awards**  
**For year ended June 30, 2021**

<u>Federal Grantor / Pass-through Grantor</u>	<u>Assistance Listing No.</u>	<u>Award Identification No</u>	<u>Pass-through Contract Number</u>	<u>Passthrough Name</u>	<u>Subrecipients</u>	<u>Other Programs</u> <u>Total Expenditures</u> <u>(Includes Subrecipients)</u>
Malaria Diagnosis and Treatment Activity	98.001	72066318CA00005			\$0	\$2,708,778
Total Direct Award Programs					<u>\$0</u>	<u>\$2,708,778</u>
<b>Pass-through Awards</b>						
<b>USAID Foreign Assistance for Programs Overseas</b>						
Meeting Targets and Maintaining Epidemic Control	98.001	JHPIEGO 19-SBA-149	7200AA19CA00003	JOHNS HOPKINS PROG FOR INTRN'L EDUCA. INGYN/OB	\$81,864	\$4,808,186
One Health Workforce - Next Generation (OHW-NG)	98.001	UCD A20-1412-S007	7200AA19CA00018	UNIVERSITY OF CALIFORNIA, DAVIS	\$0	\$593,310
Total Pass-through Programs					<u>\$81,864</u>	<u>\$5,401,496</u>
<b>Total United States Agency for International Dvlpt.</b>					<u>\$81,864</u>	<u>\$8,110,274</u>
<b>Provider Relief Fund</b>						
<b>Direct Awards</b>						
COVID-19 CARES Act General and Administrative (G&A) Benefit Expenses, Healthcare Related Expenses & Possible Lost Revenue Reimbursements	93.498	Other PRF Remaining for Possible Lost Revenue Reimbursements			\$0	\$7,779,901
Total Direct Award Programs					<u>\$0</u>	<u>\$7,779,901</u>
<b>Total Provider Relief Fund</b>					<u>\$0</u>	<u>\$7,779,901</u>
<b>Total: Other Programs</b>					<u>\$2,047,757</u>	<u>\$32,051,037</u>
<b>Total Federal Award Expenditures:</b>					<u>\$128,375,439</u>	<u>\$1,453,109,595</u>

The accompanying footnotes are an integral part of the Schedule of Expenditures of Federal Awards

# The Trustees of Columbia University in the City of New York

## Notes to Summary Schedule of Expenditures of Federal Awards

### Year ended June 30, 2021

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#### 1. Basis of Presentation

The accompanying Schedule of Expenditures of Federal Awards (the “Schedule”) has been prepared in accordance with OMB Uniform Guidance. The purpose of the Schedule is to present a summary of those activities of the University for the year ended June 30, 2021, which have been financed by the U.S. Government (“Federal awards”). For purposes of the Schedule, Federal awards include all Federal assistance entered into directly between the University and the Federal government and also between the University and other primary recipients of Federal government funds (pass-through), recorded on the accrual basis of accounting. Negative amounts listed on the Schedule represent adjustments, in the normal course of business, to amounts included on the prior year’s Schedule. The passthrough contract number on the Schedule represents the number assigned by the pass-through entity to the applicable program. Federal award Assistance number and pass-through numbers are provided when available.

#### 2. Facility and Administrative Costs

The University elects not to use the 10% de minimis rate allowed under the Uniform Guidance. The University and the Federal government currently operate under a provisional agreement that provides for F&A cost rates under federal grants and contracts as of July 1, 2018. This agreement will remain in place until such time a new agreement is reached. The following are F&A provisional cost rates established by the University:

	<b>Rate</b>
<u>All campuses, excluding Lamont-Doherty Earth Observatory</u>	
On-campus	62.0%
Off-campus	26.0%
Off-campus modified	29.4%
<u>Lamont-Doherty Earth Observatory</u>	
On-campus	54.0%
Off-campus	26.0%
Off-campus modified	29.4%
<u>Other sponsored activity</u>	
On-campus	31.0%
Off-campus	26.0%

#### 3. Guaranteed Student Loan Programs

With respect to the Federal Direct Lending Program (Federal Assistance Listing #84.268), the University is only responsible for the performance of certain administrative duties; therefore, the transactions and the balances of loans outstanding related to this program are not included in the University's consolidated financial statements. The schedule includes the amounts loaned to students during the year ended June 30, 2021. It is not practical to estimate the outstanding balance of loans under this program.



**The Trustees of Columbia University in the City of New York**  
**Notes to Summary Schedule of Expenditures of Federal Awards**  
**Year ended June 30, 2021**

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**4. Student Loan Programs**

The University is responsible for the oversight and management of the U.S. Department of Education's Federal Title IV Program which includes Federal Perkins Loan Programs (Federal Assistance Listing #84.038), as well as Health Resources and Services Administration (HRSA) Title VII and Title VIII loan programs funded by the Department of Health and Human Services:

*(Amounts in thousands)*

<b>Federal Agency</b>	<b>Loan Program</b>	<b>Federal Assistance Listing Number</b>	<b>Outstanding Principal Balance at June 30, 2021</b>
Education	Perkins Loan	84.038	\$ 26,655
DHHS	Health Professionals	93.342	9,551
DHHS	Nursing Students	93.364	<u>852</u>
			<b>\$ 37,058</b>

The federally approved administrative cost allowed under the Title IV program for Federal Work study, Federal Perkins and Federal SEOG for the fiscal year ending June 30, 2021 was \$355 thousand. This expense was charged to the Federal Work Study Program. The administrative cost allowance is determined as a percentage of the total program expenditures. The formula permits administrative cost charges at 4.5% of the first \$5.5 million expended and 3% on expenditures over \$5.5 million.

**5. CARES Act Funding**

The Schedule includes grant activity related to the DHHS Coronavirus Aid Relief and Economic Security ("CARES") Act Assistance Listing Number 93.498. As required based on guidance in the 2021 OMB Compliance Supplement, the Schedule includes all Period 1 funds received between April 10, 2020 and June 30, 2020 and expended by June 30, 2021 as reported to HRSA via the PRF Reporting Portal. In addition, the University received other COVID-19 related funding, identified on separate lines in the Schedule by Federal Assistance Listing number with "COVID-19" as a prefix added to the program name in the specific cluster where they reside. For the Global Aids program (Assistance Listing Number 93.067) the COVID-19 portion of the expenditure is \$10,348,936.

**The Trustees of Columbia University in the City of New York**  
**Schedule of Financial Responsibility Data**  
**For the Year Ended June 30, 2021**  
(in thousands of dollars, unless otherwise noted)

<b>Location in financial statements or related no</b>	<b>Financial element</b>	<b>GAAP financial statement line item or disclosure</b>	<b>Amount used as ratio input</b>
<b>Primary Reserve Ratio: Expendable Net Assets</b>			
Statement of financial position	Net assets without donor restrictions	\$ 8,255,479	\$ 8,255,479
Statement of financial position	Net assets with donor restrictions	11,370,431	11,370,431
Note 23, Financial Responsibility Standards	Unsecured related party receivable	14,633	14,633
Note 23, Financial Responsibility Standards	Total property, plant, and equipment, net	5,955,490	
Note 23, Financial Responsibility Standards	Property, plant and equipment, net - pre-implementation		5,016,784
Note 23, Financial Responsibility Standards	Property, plant and equipment, net - post-implementation with outstanding debt for original purchase		17,711
Note 23, Financial Responsibility Standards	Property, plant and equipment, net - post-implementation without outstanding debt for original purchase		524,636
Note 23, Financial Responsibility Standards	Construction in progress		396,359
Statement of financial position	Total lease right-of-use assets	308,244	
N/A	Lease right-of-use assets, pre-implementation		-
Statement of financial position	Lease right-of-use assets, post-implementation		308,244
N/A	Intangible assets	-	-
Statement of financial position	Post-employment and pension liabilities (Accrued employee benefit liabilities)	488,839	488,839
Note 23, Financial Responsibility Standards	Total long-term debt	1,870,937	
Note 23, Financial Responsibility Standards	Long-term debt - for long-term purposes pre-implementation		1,708,594
Note 23, Financial Responsibility Standards	Long-term debt - for long-term purposes post-implementation		162,343
N/A	Line of Credit for Construction in progress		-
Statement of financial position	Total liability related to lease right-of-use assets	316,329	
N/A	Liability related to lease right-of-use assets - pre-implementation		-
Statement of financial position	Liability related to lease right-of-use assets - post-implementation		316,329
Note 23, Financial Responsibility Standards	Annuities and life income funds with donor restrictions	112,901	112,901
Note 23, Financial Responsibility Standards	Term endowments with donor restrictions	5,828,500	5,828,500
Note 23, Financial Responsibility Standards	Net assets with donor restrictions: restricted in perpetuity	4,396,210	4,396,210
<b>Primary Reserve Ratio: Expenses and Losses</b>			
Statement of activities	Total expenses and losses without donor restrictions	\$ 5,048,570	\$ 5,048,570
<b>Equity Ratio: Modified Net Assets</b>			
Statement of financial position	Net assets without donor restrictions	\$ 8,255,479	\$ 8,255,479
Statement of financial position	Net assets with donor restrictions	11,370,431	11,370,431
N/A	Intangible assets	-	-
Note 23, Financial Responsibility Standards	Unsecured related party receivable	14,633	14,633
<b>Equity Ratio: Modified Assets</b>			
Statement of financial position	Total assets	\$ 24,698,782	\$ 24,698,782
N/A	Lease right-of-use assets, pre-implementation		-
N/A	Intangible assets	-	-
Note 23, Financial Responsibility Standards	Unsecured related party receivable	14,633	14,633
<b>Net Income Ratio</b>			
Statement of activities	Change in net assets without donor restrictions	\$ 992,751	\$ 992,751
Note 23, Financial Responsibility Standards	Total revenues and gains without donor restrictions		5,964,145

See accompanying independent auditors' report.



**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 Trustees of Columbia University in the City of New York

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 Trustees of Columbia University in the City of New York and its subsidiaries (the "University"), which comprise the consolidated balance sheet as of June 30, 2021, 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 October 20, 2021, except for footnote 23 with respect to the consolidated financial statements and the opinion on the schedule of financial responsibility data, as to which the date is May 16, 2022. Our opinion is not modified with respect to these matters.

**Internal Control Over Financial Reporting**

In planning and performing our audit of the financial statements, we considered the University's internal control over financial reporting ("internal control") as a basis for designing the audit procedures that are appropriate in the circumstances for the purpose of expressing our opinion on the financial statements, but not for the purpose of expressing an opinion on the effectiveness of the University's internal control. Accordingly, we do not express an opinion on the effectiveness of the University's internal control.

A *deficiency in internal control* exists when the design or operation of a control does not allow management or employees, in the normal course of performing their assigned functions, to prevent, or detect and correct, misstatements on a timely basis. A *material weakness* is a deficiency, or a combination of deficiencies, in internal control such that there is a reasonable possibility that a material misstatement of the entity's financial statements will not be prevented, or detected and corrected on a timely basis. A *significant deficiency* is a deficiency, or a combination of deficiencies, in internal control that is less severe than a material weakness, yet important enough to merit attention by those charged with governance.

Our consideration of internal control was for the limited purpose described in the first paragraph of this section and was not designed to identify all deficiencies in internal control that might be material weaknesses or significant deficiencies. Given these limitations, during our audit we did not identify any deficiencies in internal control that we consider to be material weaknesses. However, material weaknesses may exist that have not been identified.

**Compliance and Other Matters**

As part of obtaining reasonable assurance about whether the University's financial statements are free from material misstatement, we performed tests of its compliance with certain provisions of laws, regulations, contracts and grant agreements, noncompliance with which could have a direct and material effect on the financial statements. However, providing an opinion on compliance with those provisions was not an objective of our audit and, accordingly, we do not express such an opinion. The results of our tests disclosed no instances of noncompliance or other matters that are required to be reported under *Government Auditing Standards*.



### **Purpose of this Report**

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

*PricewaterhouseCoopers LLP*

New York, New York

October 20, 2021, except for footnote 23 with respect to the consolidated financial statements and the opinion on the schedule of financial responsibility data, as to which the date is May 16, 2022.



**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 Trustees of Columbia University in the City of New York

**Report on Compliance for Each Major Federal Program**

We have audited The Trustees of Columbia University in the City of New York and its subsidiaries' (the "University") 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 University's major federal programs for the year ended June 30, 2021. The University's major federal programs are identified in the summary of auditor's results section of the accompanying schedule of findings and questioned costs.

***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 University'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 University'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 University's compliance.

***Opinion on Each Major Federal Program***

In our opinion, the University 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, 2021.



### **Other Matters**

As indicated in Part I to the accompanying Summary of Independent Auditors' Reports, we have audited the Student Financial Assistance cluster as a major program. Also, as indicated in the first paragraph of this report, we performed our audit of compliance using the compliance requirements contained in the OMB Compliance Supplement, including those contained in Part V 5.3, Compliance Requirement N, Special Tests and Provisions, Section 10 "Gramm-Leach-Bliley Act-Student Information Security." This section includes three suggested audit procedures with respect to verification that the institution (1) designated an individual to coordinate the information security program, (2) performed a risk assessment that addresses the three required areas in 16 CFR 314.4(b), and (3) documented a safeguard for each risk identified. Our procedures in relation to these three items were limited to inquiry of and obtaining written representation from management and obtaining and reading management's documentation related to these three items. Our procedures did not include an analysis of the adequacy or completeness of the risk assessment performed or the safeguards for each risk identified by management.

### **Report on Internal Control Over Compliance**

Management of the University 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 University's internal control over compliance with the types of requirements that could have a direct and material effect on each major federal program to determine the auditing procedures that are appropriate in the circumstances for the purpose of expressing an opinion on compliance for each major federal program and to test and report on internal control over compliance in accordance with the Uniform Guidance, but not for the purpose of expressing an opinion on the effectiveness of internal control over compliance. Accordingly, we do not express an opinion on the effectiveness of the University's internal control over compliance.

*A deficiency in internal control over compliance* exists when the design or operation of a control over compliance does not allow management or employees, in the normal course of performing their assigned functions, to prevent, or detect and correct, noncompliance with a type of compliance requirement of a federal program on a timely basis. *A material weakness in internal control over compliance* is a deficiency, or combination of deficiencies, in internal control over compliance, such that there is a reasonable possibility that material noncompliance with a type of compliance requirement of a federal program will not be prevented, or detected and corrected, on a timely basis. *A significant deficiency in internal control over compliance* is a deficiency, or a combination of deficiencies, in internal control over compliance with a type of compliance requirement of a federal program that is less severe than a material weakness in internal control over compliance, yet important enough to merit attention by those charged with governance.

Our consideration of internal control over compliance was for the limited purpose described in the first paragraph of this section and was not designed to identify all deficiencies in internal control over compliance that might be material weaknesses or significant deficiencies. We did not identify any deficiencies in internal control over compliance that we consider to be material weaknesses. However, material weaknesses may exist that have not been identified.

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

*PricewaterhouseCoopers LLP*

New York, New York  
May 16, 2022

**The Trustees of Columbia University in the City of New York**  
**Summary of Independent Auditors' Results**  
**Year Ended June 30, 2021**

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**Section I – Summary of Independent Auditors' Results**

**Financial Statements**

Type of report of independent auditors issued: **Unmodified**

Internal control over financial reporting:  
 Material weakness (es) identified? \_\_\_\_\_ Yes   X   No

Significant deficiencies(s) identified that are not considered to be material weaknesses? \_\_\_\_\_ Yes   X   None reported

Noncompliance material to financial statements noted? \_\_\_\_\_ Yes   X   No

**Federal Awards**

Internal Control over major programs:  
 Material weakness (es) identified? \_\_\_\_\_ Yes   X   No

Significant deficiencies(s) identified that are not considered to be material weaknesses \_\_\_\_\_ Yes   X   None reported

Type of independent 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:

<u>Federal Assistance Listing Number(s)</u>	<u>Name of Federal Program or Cluster</u>
Various	Research & Development Cluster
Various	Student Financial Aid Cluster
93.318	ICAP3
93.498	COVID-19 CARES Act: Provider Relief Fund
84.425E, 84.425F	COVID-19 CARES Act: Higher Education Emergency Relief Fund

Dollar threshold used to distinguish between Type A and Type B programs: \$4,359,329

Auditee qualified as low-risk auditee?   X   Yes \_\_\_\_\_ No

**The Trustees of Columbia University in the City of New York**  
**Schedule of Findings and Questioned Costs**  
**Year Ended June 30, 2021**

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**Section II—Financial Statement Findings**

As a result of our audit, no instances of noncompliance related to the financial statements that are required to be reported in accordance with *Government Auditing Standards* were identified.

**Section III—Federal Award Findings and Questioned Costs**

No federal award findings and questioned costs were reported as a result of our audit.



**The Trustees of Columbia University in the City of New York**  
**Summary Schedule of Prior Audit Findings**  
**Year Ended June 30, 2021**

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There were no prior year audit findings that require an update in this report.