DUKE UNIVERSITY

Uniform Guidance Reports

Year Ended June 30, 2019

EIN #1 – 56-053-2129

(With Independent Auditors' Reports Thereon)

DUKE UNIVERSITY

Uniform Guidance Reports

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KPMG LLP
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Independent Auditors' Report

The Board of Trustees of Duke University:

Report on the Consolidated Financial Statements

We have audited the accompanying consolidated financial statements of Duke University, which comprise the consolidated balance sheets as of June 30, 2019 and 2018, the related consolidated statements of activities and cash flows for the years then ended, and the related notes to the consolidated financial statements.

Management's Responsibility for the Consolidated Financial Statements

Management is responsible for the preparation and fair presentation of these consolidated financial statements in accordance with U.S. generally accepted accounting principles; 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 these consolidated financial statements based on our audits. We conducted our audits in accordance with auditing standards generally accepted in the United States of America. 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 the auditors' 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, the auditor considers internal control relevant to the entity'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 entity'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 Duke University as of June 30, 2019 and 2018, and the changes in its net assets and its cash flows for the years then ended in accordance with U.S. generally accepted accounting principles.

Emphasis of Matters

As discussed in Note 2 to the consolidated financial statements, Duke University adopted Accounting Standards Update 2014-09, *Revenue from Contracts with Customers,* as amended, and Accounting Standards Update 2018-08, *Not-for-Profit Entities – Clarifying the Scope and Accounting Guidance for Contributions Received and Contributions Made,* in 2019. Our opinion is not modified with respect to these matters.

KPMG LLP is a Delaware limited liability partnership and the U.S. member firm of the KPMG network of independent member firms affiliated with KPMG International Cooperative ("KPMG International"), a Swiss entity.

Other Reporting Required by Government Auditing Standards

In accordance with Government Auditing Standards, we have also issued our report dated October 1, 2019 on our consideration of Duke University's internal control over financial reporting and on our tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements and other matters. 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 Duke University's 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 Duke University's internal control over financial reporting and compliance.

KPMG LLP

October 1, 2019

Consolidated Balance Sheets

JUNE 30, 2019 AND 2018
(DOLLARS IN THOUSANDS)

	2019	2018
Assets:		
Cash and cash equivalents	$ 686,899	$ 664,249
Accounts receivable, net	815,842	725,660
Prepaid expenses, inventories, and other assets	236,768	223,803
Contributions receivable, net	330,767	395,797
Investments	14,046,939	13,752,144
Land, buildings, and equipment, net	4,556,130	4,207,510
Interests in perpetual trusts held by others	885,298	871,514
Total assets	$ 21,558,643	$ 20,840,677
Liabilities:		
Accounts payable and accrued payroll	$ 905,771	$ 800,262
Deferred revenues and deposits	215,538	219,245
Notes and bonds payable	3,853,357	3,887,685
Annuity and other split-interest obligations	61,082	59,747
Accrued postretirement/postemployment and other benefit obligations	913,134	599,459
Other liabilities	348,256	269,598
Total liabilities	6,297,138	5,835,996
Net Assets:		
Without donor restrictions	8,731,389	8,671,700
With donor restrictions	6,530,116	6,332,981
Total net assets	15,261,505	15,004,681
Total liabilities and net assets	$ 21,558,643	$ 20,840,677

See accompanying notes to consolidated financial statements.

Consolidated Statements of Activities

YEARS ENDED JUNE 30, 2019 AND 2018
(DOLLARS IN THOUSANDS)

	2019	2018
Net assets without donor restrictions:		
Operating revenues:		
Tuition and fees	$ 519,245	$ 507,008
Grants, contracts and similar agreements:		
Government sources	743,097	688,743
The Private Diagnostic Clinic, PLLC	141,244	138,001
Other	368,264	396,841
Total grants, contracts and similar agreements	1,252,605	1,223,585
Contributions	141,457	147,214
Investment return designated for current operations:		
The Duke Endowment	12,500	12,500
Endowment spending	493,723	416,440
Other investment income	149,353	177,716
Total investment return designated for operations	655,576	606,656
Auxiliary enterprises	252,832	253,345
Patient service revenue, net	3,631,391	3,394,589
Other	253,429	253,114
Net assets released from restrictions	77,788	61,316
Total operating revenues	6,784,323	6,446,827
Operating expenses:		
Salaries and wages	2,811,132	2,639,400
Employee benefits	673,350	642,282
Student aid	46,205	44,956
Other operating expenses	2,439,713	2,312,133
Interest expense	143,987	150,155
Depreciation expense	421,395	397,348
Total operating expenses	6,535,782	6,186,274
Operating surplus	248,541	260,553

Consolidated Statements of Activities (CONTINUED)

	2019	2018
Nonoperating activities:		
Net assets released from restrictions	$ 15,728	$ 54,017
Investment return in excess of amounts designated for current operations, net	241,904	560,832
Nonperiodic changes in defined benefit plans	(295,555)	227,901
Other, net	(150,929)	1,654
Change in net assets without donor restrictions from nonoperating activities	(188,852)	844,404
Change in net assets without donor restrictions	59,689	1,104,957
Net assets with donor restrictions:		
Contributions	148,857	179,753
Net assets released from restrictions	(93,516)	(115,333)
Investment return in excess of amounts designated for current operations, net	104,840	351,495
Gains on interests in perpetual trusts held by others	13,784	64,173
Other, net	23,170	(3,704)
Change in net assets with donor restrictions	197,135	476,384
Change in total net assets	256,824	1,581,341
Net assets at beginning of year	15,004,681	13,423,340
Net assets at end of year	$ 15,261,505	$ 15,004,681
Certain amounts disaggregated above are presented below in the aggregate:		
Contributions	$ 290,314	$ 326,967
Investment return	1,002,320	1,518,983

See accompanying notes to consolidated financial statements.

Consolidated Statements of Cash Flows

YEARS ENDED JUNE 30, 2019 AND 2018
(DOLLARS IN THOUSANDS)

	2019	2018
Cash flows from operating activities:		
Change in net assets	$ 256,824	$ 1,581,341
Adjustments to reconcile change in net assets to net cash provided by operating activities:		
Depreciation and amortization	412,934	388,348
Nonperiodic changes in defined benefit plans	295,555	(227,901)
Provision for bad debt	39,144	77,136
Change in fair value of swap instruments	20,387	(24,590)
Loss on disposals of land, buildings, and equipment	2,216	1,808
Restricted contributions received for long-term investment and capital projects	(213,887)	(213,309)
Investment return with donor restrictions	(7,176)	(882)
Net realized and unrealized gains on investments	(794,601)	(1,368,120)
Gains on interests in perpetual trusts held by others	(13,784)	(64,173)
Change in:		
Accounts receivable	(93,993)	(165,243)
Prepaid expenses, inventories, and other assets	(14,595)	(15,626)
Contributions receivable, net	25,886	36,447
Accounts payable and accrued payroll	96,478	39,690
Deferred revenues and deposits	(3,707)	7,230
Annuity and other split-interest obligations	1,335	(622)
Accrued postretirement/postemployment and other benefit obligations	18,120	32,881
Other liabilities	58,271	22,333
Net cash provided by operating activities	85,407	106,748

Consolidated Statements of Cash Flows (CONTINUED)

	2019	2018
Cash flows from investing activities:		
Purchases of investments	(12,609,320)	(16,113,806)
Proceeds from sales and maturities of investments	13,109,126	16,432,030
Purchases of land, buildings, and equipment	(763,200)	(608,664)
Disbursements for loans to students	(3,009)	(2,592)
Repayments of loans by students	6,820	6,173
Change in deposits with bond trustees	1,630	26,810
Net cash used in investing activities	(257,953)	(260,049)
Cash flows from financing activities:		
Restricted contributions received for long-term investment and capital projects	213,887	213,309
Investment return with donor restrictions	7,176	882
Principal payments on notes and bonds payable	(25,867)	(36,034)
Net cash provided by financing activities	195,196	178,157
Net change in cash and cash equivalents	22,650	24,856
Cash and cash equivalents at beginning of year	664,249	639,393
Cash and cash equivalents at end of year	$ 686,899	$ 664,249
Supplemental disclosure of cash flow information:		
Change in accounts payable for land, buildings, and equipment	$ 9,031	$ 31,961
Cash paid for interest (net of amounts capitalized)	138,747	141,079

See accompanying notes to consolidated financial statements.

Notes to Consolidated Financial Statements

(DOLLARS IN THOUSANDS)

1. Overview of Duke University

Duke University, a North Carolina nonprofit corporation, is a private, coeducational institution located primarily in Durham, North Carolina, which owns and operates educational and research facilities (the University). Duke University Health System, Inc. (DUHS), a North Carolina nonprofit corporation, is a controlled affiliate of the University. Collectively, the University and DUHS are referred to herein as "Duke." The University is governed by a Board of Trustees (the Board) with thirty-seven members, consisting of the President of the University and thirty-six members representing private, public, and community interests.

The University's programs include undergraduate and graduate programs in Arts and Sciences, Engineering, Nursing, and Public Policy and professional schools in Business, Divinity, Environment, Law, Medicine, and Nursing, as well as programs in Allied Health.

DUHS operates a health care system consisting principally of:

- **Duke University Hospital** – a quaternary care teaching hospital located on the campus of Duke in Durham, North Carolina, licensed for 979 acute care and specialty beds, providing patient care and serving as a site for medical education and clinical research provided by the Duke University School of Medicine (School of Medicine).
- **Duke Regional Hospital** – a full-service community hospital located in Durham, North Carolina, licensed for 369 acute care beds. Duke Regional is owned by Durham County, North Carolina and leased to the Durham County Hospital Corporation which has in turn subleased Duke Regional Hospital to DUHS for the identical duration under a forty (40) year automatically renewing "evergreen" lease.
- **Duke Raleigh Hospital** – a community hospital located in Raleigh, North Carolina, licensed for 186 acute care beds, and providing patient care.
- **Duke University Affiliated Physicians, Inc. (DUAP)** – a North Carolina nonprofit corporation, doing business as Duke Primary Care, consisting of thirty-four (34) primary care physician practices located in Alamance, Chatham, Durham, Franklin, Granville, Orange, Vance, and Wake Counties, nine (9) urgent care centers located in Durham, Orange, and Wake Counties, and seven (7) diabetes education sites in Durham, Vance, and Wake Counties co-located in primary care sites.
- **Durham Casualty Company, Ltd. (DCC)** – a wholly owned subsidiary of DUHS, domiciled in Bermuda, insuring a portion of the medical malpractice risks and patient general liability risks of DUHS clinical providers and The Private Diagnostic Clinic, PLLC (PDC) (see Note 14).

The consolidated financial statements include the University, DUHS and all other operating entities over which Duke has control.

All significant intercompany balances and transactions have been eliminated in consolidation.

2. Summary of Significant Accounting Policies

Basis of Presentation

The consolidated financial statements of Duke have been prepared on the accrual basis in conformity with U.S. generally accepted accounting principles (GAAP) and with the provisions of the Financial Accounting Standards Board (FASB) Accounting Standards Codification (ASC) 958, *Not-for-Profit Entities.*

Based on the existence or absence of donor-imposed restrictions, Duke classifies resources into two categories: without donor restrictions and with donor restrictions.

Net assets without donor restrictions are free of donor-imposed restrictions. All revenues, gains, and losses that are not restricted by donors are included in this classification. All expenses are reported as decreases in net assets without donor restrictions.

Net assets with donor restrictions are subject to donor-imposed restrictions that will be met either by actions of Duke or the passage of time. These net assets include donor restricted endowments, unconditional pledges, split interest agreements, and interests in perpetual trusts held by others. Generally, the donors' imposed restrictions of these assets permit Duke to use all or part of the income earned on related investments only for certain general or specific purposes.

Expirations of donor restrictions on net assets (i.e., the donor stipulated purpose has been fulfilled and/or the stipulated time period has elapsed) are reported as net assets released from restrictions in the consolidated statements of activities. Contributions, including unconditional promises to give, are recognized as revenue in the period received. Contributions for acquisition or construction of plant facilities are released from restrictions in the period in which the assets are placed in service within the nonoperating section on the statements of activities. Contributions which impose restrictions that are met in the same fiscal year they are received are reported as increases in net assets without donor restrictions.

Operating results (change in net assets without donor restrictions from operating activity) in the consolidated statements of activities reflect all transactions that change net assets without donor restrictions, except for contributions for plant facilities (released), investment return in excess of or less than amounts designated for current operations, nonperiodic changes in defined benefit plans, changes in the fair value of derivative financial instruments, losses on the extinguishment of debt, and certain nonrecurring items.

Fair Value Measurements

Fair value measurements reflected in the consolidated financial statements represent the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. GAAP provides a hierarchy that prioritizes the inputs to fair value measurements based on the extent to which inputs to valuation techniques are observable in the marketplace. The hierarchy assigns a higher priority to observable inputs that reflect verifiable information obtained from independent sources, and a lower priority to unobservable inputs that would reflect Duke's assumptions about how market participants would value an asset or liability based on the best information available. Fair value measurements must maximize the use of observable inputs and minimize the use of unobservable inputs.

The three levels of the hierarchy of inputs used to measure fair value are described briefly as follows:

Level 1 – Unadjusted quoted prices in active markets for identical assets or liabilities that are available at the measurement date.

Level 2 – Inputs other than quoted prices included within Level 1 that are observable for the asset or liability, either directly or indirectly at the measurement date.

Level 3 – Unobservable inputs for the asset or liability, used in situations in which little or no market activity exists for the asset or liability at the measurement date.

The categorization of fair value measurements by level of the hierarchy is based upon the lowest level input that is significant to the overall fair value measurement for a given asset or liability.

In the event that changes in the inputs used in the fair value measurement of an asset or liability result in a transfer of the fair value measurement to a different categorization (e.g., from Level 3 to Level 2), such transfers between fair value categories are recognized at the end of the reporting period.

Cash and Cash Equivalents

Cash equivalents include assets invested in the Short Term Account (STA), all of which can be liquidated within thirty (30) days. Duke utilizes the STA to fund daily cash needs, and such assets, reported at fair value, primarily consist of short-term U.S. Treasury securities, other short-term, highly-liquid investments, and certain fixed income securities. Cash and cash equivalents that are managed as part of Duke's investments are reported within investments, as these funds are not used for operating needs.

Prepaid Expenses, Inventories, and Other Assets

Prepaid expenses, inventories, and other assets primarily represent inventories of DUHS, which are valued at the lower of average cost or net realizable value.

Contributions Receivable

Pledges that represent unconditional promises to give are recognized at fair value as contributions with donor restrictions in the period such promises are made by donors. Contributions are discounted at a risk-adjusted rate commensurate with the duration of the donor's payment plan. Amortization of the discounts is recorded as contribution revenue. Allowance is made for uncollectible contributions based upon the administration's expectations regarding collection of outstanding promises to give and past collection experience.

The methodology for calculating the allowance for uncollectible contributions is based on the administration's review of individually significant outstanding pledges, analysis of the aging of payment schedules for all outstanding pledges, as well as other factors including current economic conditions.

In contrast to unconditional promises as described above, conditional promises are not recorded until donor conditions are met.

Investments

DUMAC, Inc. (DUMAC), a separate nonprofit support corporation organized and controlled by the University, is responsible for managing investment assets for Duke, The Duke Endowment (see Note 14) and the Employees' Retirement Plan of Duke University (the ERP).

Valuation – Investments are recorded at estimated fair value. For investments made directly by Duke whose values are based on quoted market prices in active markets, the market price of the investment is used to report fair value. For shares in mutual funds, fair values are based on share prices reported by the funds as of the last business day of the fiscal year. Duke's interests in alternative investment funds such as fixed income, equities, hedged strategies, private capital, and real assets are generally reported at the net asset value (NAV) reported by the fund managers. Unless it is probable that all or a portion of the investment will be sold for an amount other than NAV, Duke has concluded, as a practical expedient, that the NAV approximates fair value.

Risks – Duke's investments are exposed to several risks, including liquidity, currency, interest rate, credit, and market risks.

Duke attempts to manage these risks through diversification, ongoing due diligence of fund managers, and monitoring of economic conditions. Due to the level of risk associated with certain investment securities, it is at least reasonably possible that changes in the values of investment securities will occur in the near term and that such changes could materially affect the amounts reported in Duke's consolidated financial statements.

Derivatives are used by Duke and external investment managers to manage market risks. The most common derivative strategies engaged in are total return swaps, credit default swaps, futures and forward contracts, and options. These derivative instruments are recorded at their respective fair values (see Note 13).

Investment Pools – Duke utilizes investment pools known as the University's Long Term Pool (LTP) and the Health System Pool (HSP) to make University and DUHS investments in diversified portfolios of debt, equity, and other investments. The HSP is structured to provide more liquidity for DUHS than is available within the LTP. Both the LTP and HSP are included in investments on the consolidated balance sheets.

Reporting – Income and realized gains (losses) on investments of working capital are reported as investment return included in operating revenues. Any excess (deficit) of income and realized and unrealized gains (losses) earned on investments above (below) the spending rate (see Note 9), including split-interest agreements, are reported as nonoperating revenues. Investment management fees are netted against investment returns.

Deposits with Bond Trustees

Deposits with bond trustees consist of the unexpended proceeds of certain bonds payable, which will be used for construction of certain facilities or payment of debt service. These funds are reported at fair value and are invested by the trustee in short-term, highly liquid securities considered Level 2 in the fair value hierarchy.

Land, Buildings, and Equipment

Land, buildings, and equipment are stated at cost at the date of acquisition or fair value at the date of donation. Property and equipment under capital leases are initially valued and recorded based on the present value of minimum lease payments. Useful lives range from 5 to 25 years for land improvements, 10 to 80 years for buildings and utilities, 5 to 10 years for computer software, 3 to 20 years for equipment, motor vehicles, furniture and vessels, and 1 year for library acquisitions. Depreciation is calculated on a straight-line basis over the assets' estimated useful lives, except for leasehold improvements and property and equipment held under capital leases, which are amortized over the shorter of the expected useful life of the asset or term of the related lease. Depreciation is not calculated on purchases of land, art collections, rare books, and construction in progress.

Conditional asset retirement obligations related to legal requirements to perform certain future activities associated with the retirement, disposal, or abandonment of assets are accrued utilizing site specific surveys to estimate the net present value for applicable future costs (e.g., asbestos abatement or removal). Duke reviews long-lived assets for impairment whenever events or changes in circumstances indicate that the carrying amount of an asset may not be recoverable. An impairment charge is recognized when the fair value of the asset or group of assets is less than the carrying value.

Interests in Perpetual Trusts Held by Others and Split-Interest Agreements

Duke is the beneficiary of certain perpetual trusts held and administered by outside trustees, including The Duke Endowment (see Note 14). These trust interests are reported at fair value, based on the value of the underlying assets, which approximates the present value of future income from these trusts. As such, these assets fall within Level 3 of the hierarchy of fair value inputs. Distributions from these trusts are recorded as investment return designated for current operations.

Duke's split-interest agreements with donors consist primarily of irrevocable charitable remainder trusts for which Duke serves as trustee. Assets held in these trusts are included in investments. Contribution revenues are recognized at the date the trusts are established after recording liabilities for the present value of the estimated future payments to be made to the donors or other beneficiaries. Annuity and other split-interest liabilities are recorded at their present value.

Debt-Related Derivative Instruments

Duke utilizes derivative instruments in a limited manner outside of its investment portfolio. As described in Note 13, interest rate swap agreements are used to manage interest rate risk associated with variable rate bond obligations. These instruments are reported in other liabilities on the consolidated balance sheets at fair value. Fair value is estimated based on pricing models that utilize significant observable inputs, such as relevant interest rates, that reflect assumptions market participants would use in pricing the instruments. As such, these liabilities fall within Level 2 of the hierarchy of fair value inputs. The change in fair value is included as a gain or loss in other nonoperating activities on the consolidated statements of activities. The net settlement amount incurred on the swaps is included in interest expense on the consolidated statements of activities.

Refundable Federal Student Loans

Funds provided by the United States Government (U.S. Government) under the Federal Perkins, Nursing, and Health Professions Student Loan programs are loaned to qualified students and may be reloaned after collection. These funds are ultimately refundable to the U.S. Government. The related balances of $29,927 and $29,787 at June 30, 2019 and 2018, respectively, are included in other liabilities on the consolidated balance sheets.

Charity Care

DUHS provides services at no charge or at a substantially discounted rate to patients who are approved under the guidelines of its financial assistance policy. DUHS does not pursue collection of amounts determined to qualify as charity care. Services qualifying for charity care consideration include emergent and medically necessary services as determined by a DUHS physician. Patient household income in relation to the federal poverty guidelines is included in the determination for charity care qualification. While charity care is excluded from net patient service revenue and receivables, DUHS maintains records to identify and monitor the level of charity care it provides. These records include the amount of charges foregone and estimated costs incurred for services and supplies furnished under its financial assistance policy and other equivalent service statistics. Costs incurred are estimated based on the ratio of total operating expenses to gross charges applied to charity care charges.

Income Taxes

Duke is tax-exempt as described in Section 501(c)(3) of the Internal Revenue Code of 1986, as amended (the Code). As such, Duke is exempt from federal income taxes to the extent provided under Section 501 of the Code. As of June 30, 2019 and 2018, there were no material uncertain tax positions.

In December 2017, the Tax Cuts and Jobs Act (the Act) was approved by the U.S. Congress. Duke has adopted the relevant provisions of the Act, and there was no material impact on the consolidated financial statements.

New Accounting Pronouncements

In May 2014, the FASB issued ASU 2014-09, *Revenue from Contracts with Customers (Topic 606)*. ASU 2014-09 requires an entity to recognize revenue to depict the transfer of promised goods or services to customers in an amount that reflects the consideration that the entity expects to be entitled to in exchange for those goods or services. Additional disclosure is required to enable users of the financial statements to understand the nature, amount, timing and uncertainty of revenue and cash flows arising from contracts with customers. Duke adopted ASU 2014-09 in fiscal 2019 under the modified retrospective method. Additionally, Duke applied the practical expedients to account for revenues with similar characteristics as a collective group rather than individually, to not adjust the transaction price for the effects of a significant financing component, and to not disclose the transaction price allocated to unsatisfied or partially unsatisfied performance obligations as of the end of the reporting period when the performance

obligations relate to contracts with an expected duration of less than one year. The adoption of this ASU did not materially impact the timing or amount of revenue recognized by Duke in the consolidated financial statements. Accordingly, Duke's fiscal 2018 consolidated statements of activities has been revised to the fiscal 2019 presentation.

In June 2018, the FASB issued ASU 2018-08, *Not-for-Profit Entities – Clarifying the Scope and Accounting Guidance for Contributions Received and Contributions Made (Topic 958)*. This ASU provides a more robust framework to determine when a transaction should be accounted for as a contribution or as an exchange transaction and provides additional guidance about how to determine whether a contribution is conditional. Duke adopted ASU 2018-08 in fiscal 2019 under the modified prospective approach. The adoption of this ASU did not materially impact the consolidated financial statements.

In February 2016, the FASB issued ASU 2016-02, *Leases (Topic 842)*. ASU 2016-02 requires recognition of rights and obligations arising from lease contracts as assets and liabilities on the balance sheet. ASU 2016-02 is effective for fiscal 2020. Upon the adoption of ASU 2016-02, Duke expects to recognize assets and liabilities in excess of $1 billion.

In March 2017, the FASB issued ASU 2017-07, *Compensation – Retirement Benefits (Topic 715): Improving the Presentation of Net Periodic Pension Cost and Net Periodic Postretirement Benefit Cost*. ASU 2017-07 requires the service cost component of net periodic benefit cost for pension and other postretirement benefits be presented as a component part of employee benefit expense. The other components of net periodic benefit cost, such as interest, expected return on plan assets, and amortization of other actuarially determined amounts, are required to be presented as a nonoperating change in net assets without donor restrictions. ASU 2017-07 is effective for fiscal 2020.

Use of Estimates

The preparation of the consolidated financial statements in accordance with GAAP requires the use of estimates and assumptions that affect the reported amounts of assets, liabilities, revenues, and expenses during the reporting period as well as the disclosure of contingent assets and liabilities. Actual results ultimately could differ from the administration's estimates.

Subsequent Events

Duke has evaluated subsequent events from the balance sheet date through October 1, 2019, the date on which the consolidated financial statements were issued. No material subsequent events were identified for recognition or disclosure.

3. Revenue Recognition

Duke's significant revenue recognition policies are:

Tuition and fees – Student tuition and fees are earned and recognized as revenue during the year that the related academic services are rendered. Student tuition and fees received in advance of services to be rendered are recorded as deferred revenue. Student aid provided by Duke for tuition and fees is reflected as a reduction of tuition and fees revenue at published rates, and does not include payments made to students for services rendered to Duke.

The following table provides the components of tuition and fees for fiscal 2019 and 2018:

	2019	2018
Tuition and fees, at published rates	$867,132	$830,929
Less student aid	(347,887)	(323,921)
Tuition and fees	$519,245	$507,008

As of June 30, 2019 and 2018, Duke had $43,837 and $44,260, respectively, of deferred tuition and fees that will be recognized in the subsequent fiscal year when the programs occur.

Grants and contracts – In accordance with ASU 2018-08, grants and contracts awarded by federal and other sponsors, including facilities and administrative (F&A) cost recovery, which are generally considered nonreciprocal transactions restricted by sponsors for certain purposes, are recognized as revenue when qualifying expenditures are incurred and conditions under the agreements are met. Duke has elected the simultaneous release policy available under ASU 2018-08, which allows a not-for-profit organization to recognize a restricted contribution directly in net assets without donor restrictions if the restriction is met in the same period that the revenue is recognized. F&A cost recovery represents reimbursement, primarily from the federal government, of F&A costs on sponsored activities. Duke's federal F&A cost recovery rate for research was 60.0% and 59.0% in fiscal 2019 and 2018, respectively.

In accordance with ASU 2014-09, revenue from exchange grants and contracts is recognized as Duke substantially meets the performance obligations contained in the agreement with the sponsor.

Duke recognized grants and contracts revenues as follows for the years ended June 30:

	2019	2018
Provided by:		
Federal government sources	$ 690,816	$ 639,825
Other government sources	52,281	48,918
The Private Diagnostic Clinic, PLLC	141,244	138,001
Other	368,264	396,841
Total grants, contracts and similar agreements	$ 1,252,605	$ 1,223,585

As of June 30, 2019 and 2018, Duke had unexpended grant awards of $134,652 and $143,987, respectively, for which revenue will be recognized when the conditions on the awards are met or the performance obligations have been met. In fiscal 2019, Duke recognized $109,331 of revenue from grants that was previously deferred. Conditional awards from federal and other sponsors outstanding as of June 30, 2019 were $586,263.

Net patient service revenue – Net patient service revenue relates to contracts with patients in which the performance obligations are to provide health care services to patients. DUHS recognizes revenues over time as services (inputs) are provided to patients in the period in which services are rendered. DUHS deems using this input method provides a faithful depiction of the transfer of services to the patient over the performance obligation period.

The contractual relationships with patients usually involve a third-party payor, and transaction prices for the services provided are dependent upon the terms provided by or negotiated with third-party payors. DUHS has agreements with third-party payors that provide for payments to DUHS at amounts that are generally less than its established rates. DUHS determines the transaction price based on its established charges for goods and services less explicit and implicit price concessions. Explicit price concessions are contractual adjustments provided to third-party payors and published policy discounts applied to uninsured patients. Implicit price concessions represent differences between amounts billed and the estimated consideration DUHS expects to receive from patients, which are primarily based on historical collection experience. DUHS generally bills third-party payors and patients within five days after services are rendered and/or patients are discharged from the hospital. Accordingly, net patient service revenue is reported at the estimated net realizable amounts from patients, third-party payors, and others, including estimated retroactive adjustments under reimbursement agreements with third-party payors. Adjustments are accrued on an estimated basis in the period the related services are rendered and retroactively adjusted in future periods as changes to estimates become known and tentative and final settlement adjustments are identified.

Auxiliary enterprises – Auxiliary enterprises include athletics, residence halls, dining services, parking, and retail stores, which furnish goods and services to students, faculty, staff, and in some cases, the general public. Revenues from athletics ticket sales, media rights, licensing and other contracts are received and recognized when the goods and services are rendered, and typically occur in the same fiscal year. Charges to students for campus residence, dining and other student services are substantially billed and recognized prior to the end of each semester. Any prepayments for services are reported as deferred revenue until such time as the revenue has been earned.

Other revenue – Other revenue primarily includes design and delivery revenue related to executive education programs, billing and collection services provided to affiliated organizations, and royalty revenue from the licensing of intellectual property. Revenues from design services are recognized over the time of the project, and program delivery revenue is recognized at a point in time when the course delivery occurs. Royalty revenue is recognized as payments are received. Billing and collection fees are recognized based on actual price/expense incurred.

4. Liquidity and Availability

Financial assets available for general expenditure within one year of June 30 are as follows:

	2019	2018
Total assets	$ 21,558,643	$ 20,840,677
Less:		
Endowment funds – including perpetual trusts	8,609,004	8,524,846
Annuities, trusts and other illiquid investments	5,655,065	5,457,683
Land, buildings and equipment, net	4,556,130	4,207,510
Contributions receivable and other assets	656,096	595,354
Financial assets available within one year	$ 2,082,348	$ 2,055,284

Duke manages its financial assets to be available as its operating expenditures, liabilities and other obligations come due. In addition, Duke invests cash in excess of daily requirements in short-term investments or fixed income securities. To supplement working capital and investment commitments, Duke had line of credit agreements totaling $275,000 as of June 30, 2019 and 2018, with no outstanding borrowings under these agreements. The line of credit agreements have varying expiration dates through fiscal 2023. As of June 30, 2019 and 2018, the amounts available through Duke's tax-exempt and taxable commercial paper program are $300,000 and $200,000, respectively. The outstanding amount was $94,022 as of June 30, 2019 and 2018. Additionally, as of June 30, 2019 and 2018, Duke had board-designated endowments and other investments of $4,871,524 and $5,216,724. Although Duke does not intend to spend from these investments, other than amounts appropriated for general expenditure as part of its annual budget approval and appropriation process, they could be made available if necessary, subject to liquidity of the underlying investments.

5. Accounts Receivable, net

Accounts receivable consists of the following at June 30:

	2019	2018
Patient receivables	$ 460,543	$ 420,981
Sponsored program receivables	138,210	135,198
Student loan receivables	28,460	33,418
Other receivables	188,629	136,063
Accounts receivable, net	$ 815,842	$ 725,660

Concentration of Credit Risk

DUHS grants credit without collateral to its patients, most of whom are insured under third-party payor agreements. The related gross receivables at June 30, 2019 and 2018 both included approximately 41% and 48% from commercial payors and U.S. Government sources, respectively.

6. Contributions Receivable, net

Contributions receivable are summarized as follows at June 30:

	2019	2018
Unconditional promises expected to be collected in:		
Less than one year	$ 132,366	$ 151,138
Between one year and five years	203,970	247,768
More than five years	19,589	27,072
Gross contributions receivable	355,925	425,978
Allowance for uncollectible amounts	(10,713)	(12,353)
Unamortized discount at rates ranging from 0.1% to 7.5%	(14,445)	(17,828)
Contributions receivable, net	$ 330,767	$ 395,797

At June 30, 2019 and 2018, the 10 largest outstanding donor pledge balances represented 45% and 47%, respectively, of Duke's gross contributions receivable.

At June 30, 2019, Duke had also received bequest intentions and conditional promises to give of $273,716. These intentions and conditional promises to give are not recognized as assets or revenues in the consolidated financial statements.

7. Investments

The fair value of investments consists of the following at June 30:

	2019	2018
Short-term investments	$ 674,514	$ 769,063
Fixed income	1,544,781	1,581,967
Equities	2,218,572	2,215,320
Hedged strategies	3,457,285	3,520,357
Private capital	3,878,606	3,332,471
Real assets	1,980,732	2,083,320
Other	292,449	249,646
Total investments	$14,046,939	$ 13,752,144

The composition of Duke's investments are as follows:

	2019	2018
LTP	$10,038,663	$ 9,824,392
HSP	3,385,545	3,205,240
Nonpooled[1]	622,731	722,512
Total investments	$14,046,939	$ 13,752,144

At June 30, 2019 and 2018, $9,362 and $65,144, respectively, was posted as collateral for derivatives and thus not readily available for use. Collateral held is included in short-term investments.

Duke's investment classes are described in further detail below. Classes include direct holdings, which are generally marketable securities, and interests in funds for which the related investment strategies are described.

Short-term investments includes cash collateral, money market funds, and other highly liquid debt securities with an aggregate duration of less than a year.

Fixed income includes U.S. Treasury and agency debt, as well as non-government domestic and international fixed income securities, funds holding similar securities, and debt-based derivatives.

Equities includes domestic and international stocks, equity-based derivatives and interests in funds that invest predominantly long but also short stocks. Exposure by market is approximately: 30% domestic, 25% developed international, 30% emerging international, and 15% global.

[1] The June 30, 2019 and 2018 balance includes $0 and $204,589, respectively, of unspent proceeds from the issuance of the DUHS 2017 taxable bonds described in Note 12.

Hedged strategies primarily includes interests in funds that invest both long and short in U.S. and non-U.S. stocks, credit-oriented securities, and arbitrage strategies. Approximately 80% of the hedged strategies portfolio is invested through equity oriented strategies with the balance split between multi-strategy (10%) and credit strategies (10%) funds and accounts. Virtually all of Duke's investments in these funds are redeemable, and the underlying assets of the funds are predominately marketable securities and derivatives.

Private capital primarily includes interests in funds or partnerships that hold illiquid investments in venture capital, buyouts, and credit. These funds typically have periods of 10 or more years during which committed capital may be drawn. Distributions are received through liquidation of the underlying assets of the funds, which are anticipated to occur over the next 4 to 10 years. Certain private placement securities may also be held.

Real assets includes interests in funds or partnerships that hold illiquid investments in residential and commercial real estate, oil and gas production, energy, other commodities, and related services businesses. These funds typically have periods of 10 or more years during which committed capital may be drawn. Distributions are received through liquidations of the underlying assets of the funds, which are anticipated to occur over the next 5 to 12 years. Additionally, certain liquid commodity- and real estate-related equities, private placement securities and related derivatives are included.

Other primarily includes other derivative instruments.

The following is a summary of the levels within the fair value hierarchy for Duke's investments at June 30:

Fair Value as of June 30, 2019	Level 1	Level 2	Level 3	Investments reported at NAV[1]	Total
Short-term investments	$ 372,034	$ 302,480	$ –	$ –	$ 674,514
Fixed income	80,792	1,260,149	39,932	163,908	1,544,781
Equities	1,410,099	35,449	200,000	573,024	2,218,572
Hedged strategies	37,698	–	–	3,419,587	3,457,285
Private capital	7,935	–	386,090	3,484,581	3,878,606
Real assets	34,502	19,822	42,238	1,884,170	1,980,732
Other	70,345	213,243	–	8,861	292,449
Total investments	$ 2,013,405	$ 1,831,143	$ 668,260	$ 9,534,131	$ 14,046,939

Fair Value as of June 30, 2018	Level 1	Level 2	Level 3	Investments reported at NAV[1]	Total
Short-term investments	$ 427,633	$ 341,430	$ –	$ –	$ 769,063
Fixed income	387,352	1,146,082	–	48,533	1,581,967
Equities	1,294,757	31,205	86,382	802,976	2,215,320
Hedged strategies	177,349	–	–	3,343,008	3,520,357
Private capital	2,462	–	315,898	3,014,111	3,332,471
Real assets	51,584	1,349	42,743	1,987,644	2,083,320
Other	60,704	179,962	–	8,980	249,646
Total investments	$ 2,401,841	$ 1,700,028	$ 445,023	$ 9,205,252	$ 13,752,144

[1] Certain investments that are measured at fair value using the net asset value per share (or its equivalent) as a practical expedient have not been categorized in the fair value hierarchy. The fair value amounts presented in this table are intended to permit reconciliation of the fair value hierarchy to the amounts presented in the consolidated balance sheets.

As of June 30, 2019 and 2018, redemption frequency and the corresponding notice period for all investments are as follows:

Asset Class	Redemption frequency (in days) (if currently eligible)[1]	Redemption notice period (in days)
Short-term investments	daily	1
Fixed income	1 to 30	1 to 30
Equities	1 to 90	1 to 90
Hedged strategies	30 to >365	2 to 100
Private capital	N/A	N/A
Real assets	N/A	N/A
Other	N/A	N/A

The following tables present additional information about Level 3 investments. Both observable and unobservable inputs may be used to determine the fair value of positions that Duke has classified within the Level 3 category. As a result, the unrealized gains and losses for assets within the Level 3 category in the table below may include changes in fair value that were attributable to both observable and unobservable inputs.

	Balance as of June 30, 2018	Net realized and unrealized (losses) gains	Purchases	Sales	Net transfers out	Balance as of June 30, 2019
Fixed income	$ –	$ (675)	$ 54,835	$ (14,228)	$ –	$ 39,932
Equities	86,382	113,618	–	–	–	200,000
Private capital	315,898	96,743	32,269	(46,863)	(11,957)	386,090
Real assets	42,743	(1,514)	1,678	(669)	–	42,238
Total Level 3 investments	$ 445,023	$ 208,172	$ 88,782	$ (61,760)	$ (11,957)	$ 668,260

	Balance as of June 30, 2017	Net realized and unrealized gains	Purchases	Sales	Net transfers out	Balance as of June 30, 2018
Equities	$ 72,660	$ 13,722	$ –	$ –	$ –	$ 86,382
Private capital	236,816	62,257	62,498	(45,323)	(350)	315,898
Real assets	28,173	243	15,744	(1,417)	–	42,743
Total Level 3 investments	$ 337,649	$ 76,222	$ 78,242	$ (46,740)	$ (350)	$ 445,023

8. Net Assets

The following is a summary of net assets at June 30, 2019:

	Without donor restrictions	With donor restrictions[2]	Total
DUHS operations	$ 3,789,355	$ –	$ 3,789,355
University operations	1,744,612	–	1,744,612
Endowment funds	2,584,926	6,024,078	8,609,004
Investment in plant, net	612,496	–	612,496
Donor pledges and gifts	–	421,497	421,497
Annuity and other split-interest agreements	–	70,962	70,962
Student loan funds	–	13,579	13,579
Total net assets	$ 8,731,389	$ 6,530,116	$ 15,261,505

[1] Based on current terms, it is possible that these redemption rights may be restricted or eliminated by the funds in the future in accordance with the underlying fund agreement.
[2] Purpose includes instruction, research and student aid.

The following is a summary of net assets at June 30, 2018:

	Without donor restrictions	With donor restrictions[1]	Total
DUHS operations	$ 3,616,058	$ –	$ 3,616,058
University operations	1,884,982	–	1,884,982
Endowment funds	2,724,843	5,800,003	8,524,846
Investment in plant, net	445,817	–	445,817
Donor pledges and gifts	–	453,923	453,923
Annuity and other split-interest agreements	–	65,767	65,767
Student loan funds	–	13,288	13,288
Total net assets	$ 8,671,700	$ 6,332,981	$ 15,004,681

9. Endowment

Duke's endowment consists of over 5,400 individual funds established for a variety of purposes including donor-restricted endowment funds, funds designated by the Board to function as endowments, as well as interests in perpetual trusts held by others. Net assets associated with endowment funds are classified and reported based on the existence or absence of donor-imposed restrictions.

Interpretation of Relevant Law

The Board has decided to continue to require the preservation of the historic dollar value of endowment funds absent explicit donor stipulations to the contrary. Duke classifies as net assets with donor restrictions the sum of (a) the original value of gifts donated to the donor-restricted endowment, (b) the original value of subsequent gifts to the donor-restricted endowment, (c) additions to the donor-restricted endowment made in accordance with the direction of the applicable donor gift instrument at the time the accumulation is added to the fund, and (d) the appreciation on donor-restricted endowment funds until those amounts are appropriated for expenditure by Duke in a manner consistent with the standard of prudence prescribed by the Uniform Prudent Management of Institutional Funds Act (UPMIFA). The amounts appropriated for expenditure are based on the endowment spending rate per unit and the number of units for each fund. The spending rate is approved by the Board as part of Duke's operating budget.

Endowment net assets consist of the following at June 30, 2019:	Without Donor Restrictions	With Donor Restrictions	Total
Donor-restricted endowment funds:			
Historical value	$ –	$ 2,194,869	$ 2,194,869
Appreciation	–	2,943,911	2,943,911
Total donor-restricted endowment funds	–	5,138,780	5,138,780
Board-designated endowment funds	2,584,926	–	2,584,926
Interests in perpetual trusts held by others	–	885,298	885,298
Total endowed net assets	$ 2,584,926	$ 6,024,078	$ 8,609,004

Endowment net assets consist of the following at June 30, 2018:	Without Donor Restrictions	With Donor Restrictions	Total
Donor-restricted endowment funds:			
Historical value	$ –	$ 2,081,789	$ 2,081,789
Appreciation	–	2,846,700	2,846,700
Total donor-restricted endowment funds	–	4,928,489	4,928,489
Board-designated endowment funds	2,724,843	–	2,724,843
Interests in perpetual trusts held by others	–	871,514	871,514
Total endowed net assets	$ 2,724,843	$ 5,800,003	$ 8,524,846

[1] Purpose includes instruction, research and student aid.

The purposes of endowed net assets as of June 30, 2019 are as follows:	Without Donor Restrictions	With Donor Restrictions	Total
Instruction	$ 1,556,903	$ 3,427,823	$ 4,984,726
Student aid	80,084	1,784,123	1,864,207
Program support	947,939	812,132	1,760,071
Total endowed net assets	$ 2,584,926	$ 6,024,078	$ 8,609,004

The purposes of endowed net assets as of June 30, 2018 are as follows:	Without Donor Restrictions	With Donor Restrictions	Total
Instruction	$ 1,670,264	$ 3,306,583	$ 4,976,847
Student aid	86,892	1,699,593	1,786,485
Program support	967,687	793,827	1,761,514
Total endowed net assets	$ 2,724,843	$ 5,800,003	$ 8,524,846

Spending Policy

Duke utilizes the total return concept (income yield and appreciation) in the management of its endowment. Duke has implemented a spending policy designed to stabilize annual spending levels and preserve the real value of the endowment over time. In accordance with Duke's policy, a predetermined endowment spending rate consistent with Duke's total return objective has been established and approved by the Board. Should endowment returns prove to be insufficient to support this policy, the balance is provided from accumulated capital gains. Should endowment returns exceed the amounts necessary to attain this objective, the balance is reinvested. The effective spending rates for fiscal 2019 were 5.2% for financial aid endowments and 3.9% for non-financial aid endowments. The effective spending rates for fiscal 2018 were 5.5% for financial aid endowments and 4.1% for non-financial aid endowments. The annual distribution under the spending policy described above is reported as investment return included in operating revenues. Additionally, the Board authorizes the use of specific amounts of previously reinvested income, capital gains, and principal related to Board-designated endowment funds for special academic development initiatives and to support the operations and maintenance of certain facilities. The amounts reported in the consolidated statements of activities include supplemental endowment distributions totaling $236,516 and $181,655 in fiscal 2019 and 2018, respectively.

Return Objectives and Risk Parameters

Under the policy approved by the Board, endowment assets are invested in a manner that is intended to produce results that exceed the price and yield results of a benchmark composed of 70% of the MSCI All Country World Index and 30% of the Bloomberg Barclays U.S. Aggregate Bond Index. Duke expects its endowment funds, over long time periods, to provide an average annual real rate of return of approximately 5.0%. Actual returns in any given year may vary from this amount.

Funds with Deficiencies

From time to time, the fair value of endowment assets may fall below the fund's original value. Deficiencies of this nature are reported in net assets with donor restrictions. As of June 30, 2019 and 2018, there were no endowment funds with market values below the original gift amount.

Changes in endowment net assets for the years ended June 30, 2019 and 2018 are as follows:

	Without Donor Restrictions	With Donor Restrictions	Total
Balance as of June 30, 2017	$ 2,618,989	$ 5,292,186	$ 7,911,175
Investment return, net	303,034	616,212	919,246
Contributions	–	98,795	98,795
New Board-designated endowment funds	26,498	–	26,498
Appropriations for expenditure	(209,250)	(207,190)	(416,440)
Appropriations for capital	(14,428)	–	(14,428)
Balance as of June 30, 2018	$ 2,724,843	$ 5,800,003	$ 8,524,846
Investment return, net	73,546	326,279	399,825
Contributions	–	113,080	113,080
New Board-designated endowment funds	64,976	–	64,976
Appropriations for expenditure	(278,439)	(215,284)	(493,723)
Balance as of June 30, 2019	$ 2,584,926	$ 6,024,078	$ 8,609,004

10. Pension and Other Postretirement Benefit Plans

Defined Contribution Retirement Savings Plan

Faculty and staff members of Duke are eligible to participate in a defined contribution plan. Faculty and exempt staff members are eligible to receive employer-provided contributions in this plan. For fiscal 2019 and 2018, Duke contributed $176,291 and $164,286, respectively, to this plan. Duke expects to contribute $187,109 to this plan in fiscal 2020.

Defined Benefit Pension and Postretirement Medical Benefit Plans

Duke has a noncontributory defined benefit pension plan for substantially all non-exempt employees. The benefit for this plan is based on years of service and the employee's compensation during the last 10 years of employment. Duke expects to contribute $24,341 to the plan in fiscal 2020.

At June 30, 2019 and 2018, the accumulated benefit obligation for the pension benefits was $2,126,060 and $1,840,391, respectively. At June 30, 2019 and 2018, the plan was under funded in relation to accumulated benefits by $277,954 and $47,821, respectively.

Duke also sponsors an unfunded defined benefit postretirement medical plan that covers all full-time employees who elect coverage and satisfy the plan's eligibility requirements when they retire. The plan is contributory with retiree contributions established as a percentage of the total cost of medical care for retirees and their dependents. Duke pays all benefits on a current basis. DUHS employees hired after June 30, 2002 are not eligible for DUHS contributions to the cost of this benefit and must bear the full cost themselves if elected at retirement. As a healthcare provider, Duke utilizes an incremental cost approach to determine its liability for the postretirement medical plan. The total liability reflects estimated additional costs to provide medical benefits to retirees within DUHS facilities plus the full cost to provide medical benefits to retirees at facilities other than DUHS.

The measurement date for both the defined benefit pension plan and the postretirement medical benefit plan is June 30. Duke recognizes the full funded status of its defined benefit pension and other postretirement benefit plans in the consolidated balance sheets. Accordingly, the liability for pension benefits as recognized in the consolidated balance sheets represents the actuarially determined projected benefit obligation (PBO) in excess of the fair value of plan assets at year end. The liability for other postretirement benefits as recognized in the consolidated balance sheets represents the actuarially determined accumulated postretirement benefit obligation at year end.

The following tables provide a reconciliation of the plans' PBO and fair value of assets:

	Pension Benefits		Postretirement Benefits	
	2019	2018	2019	2018
Reconciliation of benefit obligation				
PBO at beginning of year	$ 1,979,818	$ 2,051,151	$ 238,482	$ 233,041
Service cost	74,349	78,998	5,006	4,293
Interest cost	82,740	75,776	9,903	8,562
Amendments	–	10,858	–	–
Actuarial loss (gain)	229,350	(173,335)	39,530	2,022
Benefit payments	(65,526)	(60,230)	(10,954)	(9,436)
Administrative expenses (estimated)	(5,400)	(3,400)	–	–
PBO at end of year	$ 2,295,331	$ 1,979,818	$ 281,967	$ 238,482
Reconciliation of fair value for plan assets				
Fair value of plan assets at beginning of year	$ 1,792,570	$ 1,652,053	$ –	$ –
Actual return on plan assets	103,106	181,434	–	–
Employer contributions	23,484	22,319	–	–
Participant contributions	219	204	–	–
Benefit payments	(65,526)	(60,230)	–	–
Administrative expenses	(5,747)	(3,210)	–	–
Fair value of plan assets at end of year	$ 1,848,106	$ 1,792,570	$ –	$ –
Funded status				
Net accrued benefit liability	$ (447,225)	$ (187,248)	$ (281,967)	$ (238,482)

The following table provides the components of net periodic benefit cost (reported as employee benefits in the consolidated statements of activities) for the plans for fiscal 2019 and 2018:

	Pension Benefits		Postretirement Benefits	
	2019	2018	2019	2018
Service cost	$ 74,349	$ 78,998	$ 5,006	$ 4,293
Interest cost	82,740	75,776	9,903	8,562
Expected return on plan assets	(131,928)	(125,031)	–	–
Amortization of prior-service cost	2,485	1,814	–	–
Expected participant contributions	(209)	(190)	–	–
Recognized actuarial loss	–	9,025	–	–
Net periodic benefit cost	$ 27,437	$ 40,392	$ 14,909	$ 12,855

The prior-service costs are amortized on a straight-line basis over the average remaining service period of active participants. The expected amortization of prior-service cost for fiscal 2020 is $1,862 and $0 for the pension and postretirement benefits, respectively. The expected amortization of actuarial losses for fiscal 2020 is $12,084 and $1,391 for the pension and postretirement benefits, respectively. Unrecognized prior-service costs were $13,264 and $0 and unrecognized actuarial losses were $346,746 and $44,049 for the pension and postretirement benefits, respectively, as of June 30, 2019. Unrecognized prior-service costs were $15,749 and $0 and unrecognized actuarial losses were $88,237 and $4,519 for the pension and postretirement benefits, respectively, as of June 30, 2018.

The assumptions used in the measurement of Duke's benefit obligation and benefit cost are shown in the following table:

	Pension Benefits				Postretirement Benefits			
	2019		2018		2019		2018	
Weighted average assumptions as of measurement date	Obligation	Cost	Obligation	Cost	Obligation	Cost	Obligation	Cost
Discount rate	3.60%	4.25%	4.25%	3.75%	3.48%	4.25%	4.25%	3.75%
Expected return on plan assets	N/A	7.50%	N/A	7.50%	N/A	N/A	N/A	N/A
Rate of compensation increase	3.00%/2.00%[1]	3.00%/2.00%[1]	3.00%/2.00%[1]	2.50%	N/A	N/A	N/A	N/A

In order to determine the benefit obligation as of June 30, 2019, the per capita costs of covered health care benefits was assumed to increase 8.0% for non-Medicare eligible employees and 7.9% for Medicare eligible employees, declining to an ultimate annual rate of increase of 4.5% by 2035 for non-Medicare and 2030 for Medicare eligible employees. The benefit expense for fiscal 2019 was driven by the rates used to determine the obligation at June 30, 2018, which were 8.0% for non-Medicare eligible employees and 8.3% for Medicare eligible employees declining to an ultimate annual rate of increase of 5.0% by 2033 for non-Medicare eligible employees and 2028 for Medicare eligible employees.

Assumed health care cost trend rates have a significant effect on the amounts reported for the health care plans. A 1.0% change in assumed health care cost trend rates would have the following effect:

	1.0% Increase	1.0% Decrease
Effect on total of service and interest cost components of net periodic postretirement health care benefit cost	$ 2,736	$ (2,057)
Effect on the health care component of the accumulated postretirement benefit obligation	$ 43,519	$ (34,377)

The projected payments to beneficiaries under the respective plans for each of the five fiscal years subsequent to June 30, 2019 are as follows:

	Pension Benefits	Postretirement Benefits
2020	$ 70,572	$ 10,747
2021	74,736	11,618
2022	79,388	12,364
2023	84,900	13,171
2024	90,698	13,869

Projected aggregate payments for pension and postretirement benefits for the five year period ending June 30, 2029 are $547,696 and $79,495, respectively.

[1] Compensation increase for first 20 years of service/thereafter.

Defined Benefit Pension Plan Assets

The pension plan's investment strategy focuses on maximizing total return and places limited emphasis on liability matching and no emphasis on generating income. Over the long term, the plan's average exposure target is 48% equity (public and private investments in companies), 15% credit (investment-grade bonds, corporate bonds, bank debt, asset backed securities, etc.), 13% absolute return oriented strategies, 9% commodity (direct commodity exposure, commodity related equities, and private investments in energy, power, infrastructure and timber), 9% real estate (private real estate and REITs), 4% rates (public obligations including treasuries and agencies), and 2% inflation-linked strategies.

The expected return on pension plan assets is established at an amount that reflects the targeted asset allocation and expected returns for each component of the plan assets. The expected return was developed using a stochastic forecast model of long-term expected returns for each asset class. The rate is reviewed periodically and adjusted, as appropriate, to reflect changes in the expected market performance or in targeted asset allocation ranges.

The following is a summary of the levels within the fair value hierarchy for Duke's plan assets at June 30:

Fair value as of June 30, 2019	Level 1	Level 2	Level 3	Investments reported at NAV[1]	Total
Short-term investments	$ 43,460	$ 60,778	$ –	$ –	$ 104,238
Fixed income	34,183	191,302	–	39,112	264,597
Equities	210,182	3,556	–	78,656	292,394
Hedged strategies	2,612	–	–	428,014	430,626
Private capital	1,038	–	50,382	432,281	483,701
Real assets	4,641	2,809	–	253,693	261,143
Other	(7,710)	19,117	–	–	11,407
Total investments	$ 288,406	$ 277,562	$ 50,382	$ 1,231,756	$ 1,848,106

Fair value as of June 30, 2018	Level 1	Level 2	Level 3	Investments reported at NAV[1]	Total
Short-term investments	$ 36,894	$ 64,945	$ –	$ –	$ 101,839
Fixed income	49,857	178,267	–	–	228,124
Equities	193,974	2,170	–	114,693	310,837
Hedged strategies	31,288	–	–	408,264	439,552
Private capital	339	–	40,465	380,168	420,972
Real assets	7,075	187	–	268,310	275,572
Other	(7,400)	23,074	–	–	15,674
Total investments	$ 312,027	$ 268,643	$ 40,465	$ 1,171,435	$ 1,792,570

[1] Certain investments that are measured at fair value using the net asset value per share (or its equivalent) as a practical expedient have not been categorized in the fair value hierarchy. Plan investments reported at NAV have the same strategies as those in Duke's investment pools described in Note 7.

The following tables present additional information about Level 3 plan assets. Both observable and unobservable inputs may be used to determine the fair value of positions that the Plan has classified within the Level 3 category. As a result, the unrealized gains and losses for assets within the Level 3 category in the table below may include changes in fair value that were attributable to both observable and unobservable inputs.

	Balance as of June 30, 2018	Net realized and unrealized gains	Purchases	Sales	Net Transfers Out	Balance as of June 30, 2019
Private capital	$ 40,465	$ 12,699	$ 3,740	$ (4,997)	$ (1,525)	$ 50,382

	Balance as of June 30, 2017	Net realized and unrealized gains	Purchases	Sales	Net Transfers Out	Balance as of June 30, 2018
Private capital	$ 30,062	$ 8,454	$ 7,698	$ (5,749)	$ –	$ 40,465

11. Land, Buildings, and Equipment

Land, buildings, and equipment, net, are summarized as follows at June 30:

	2019	2018
Land and land improvements	$ 461,429	$ 447,694
Buildings and utilities	6,028,692	5,767,082
Computer software	419,142	410,505
Equipment, furniture and vessels	1,716,880	1,618,969
Library and art collections	537,389	512,087
Construction in progress	739,347	421,834
Land, buildings and equipment, gross	9,902,879	9,178,171
Accumulated depreciation	(5,346,749)	(4,970,661)
Land buildings and equipment, net	$ 4,556,130	$ 4,207,510

Interest on borrowings to finance facilities is capitalized during construction, net of any investment income earned through the temporary investment of project borrowings on tax-exempt debt. Total net interest cost of $8,806 and $3,191 was capitalized in fiscal 2019 and 2018, respectively.

Duke has identified conditional asset retirement obligations primarily related to the costs of asbestos removal and disposal that will result from future remediation activity. The liability was estimated using inflation rates ranging from 3.4% to 5.0% and discount rates ranging from 2.7% to 4.6%. Conditional asset retirement obligations recognized at June 30, 2019 and 2018 were $40,173 and $53,505, respectively, and are reported in other liabilities on the consolidated balance sheets.

12. Notes and Bonds Payable

Notes and bonds payable at June 30 consist of the following:

	Fiscal year of maturity	Effective interest rate	Outstanding principal 2019	Outstanding principal 2018
University Tax-Exempt Bonds:				
Variable-rate bonds				
Series 1991B	2022	1.5%	$ 24,000	$ 32,000
Series 1992A	2027	1.4%	35,240	35,240
Fixed-rate bonds				
Series 2014A	2042	5.0%	119,115	119,115
Series 2014B	2045	5.0%	84,710	84,710
Series 2014C	2043	5.0%	33,000	33,000
Series 2015B	2056	5.0%	368,905	368,905
Series 2016B	2045	4.7%	328,605	328,605
University Taxable Bonds:				
Fixed-rate bonds				
Series 2007A	2037	5.9%	200,000	200,000
Series 2015A	2049	4.1%	175,865	175,865
Series 2016A	2047	3.2%	528,780	528,780
DUHS Tax-Exempt Bonds:				
Variable-rate bonds				
Series 2005A and B	2028	2.7%	105,195	113,415
Series 2006A, B, and C (see Note 13)	2039	2.3%	121,620	121,620
Series 2012B (see Note 13)	2023	3.1%	23,490	28,650
Series 2016B	2042	2.7%	90,000	90,000
Series 2016C	2042	2.6%	90,000	90,000
Fixed-rate bonds				
Series 2012A	2042	4.7%	276,275	277,280
Series 2016A	2028	2.0%	134,145	143,520
Series 2016D	2042	3.5%	125,100	125,100
DUHS Taxable Bonds:				
Fixed-rate bonds				
Series 2017	2047	3.9%	600,000	600,000
Tax-exempt commercial paper	<1 year	1.7%	33,860	33,860
Taxable commercial paper	<1 year	2.4%	60,162	60,162
Other notes payable	Various	Various	16,070	12,959
Capital lease obligations (see Note 17)	Various	Various	135,893	132,951
Unamortized premium			160,469	169,946
Unamortized debt issuance costs			(17,142)	(17,998)
Notes and bonds payable			$ 3,853,357	$ 3,887,685

The aggregate annual maturities for Duke's outstanding debt at June 30, 2019 are as follows:

Fiscal Year	Principal Payments
2020	$ 126,947
2021	33,970
2022	35,120
2023	35,350
2024	37,360
Thereafter	3,305,390
Total principal payments	$ 3,574,137

Duke capitalizes and amortizes the original issue premium and issue costs related to applicable bond issues in a manner that approximates the interest method. Total net amortization for issue costs and premiums was $8,621 and $8,842 for fiscal 2019 and 2018, respectively, and is included as a reduction of interest expense in the consolidated statements of activities.

Trust indentures underlying the DUHS Revenue Bonds contain certain covenants and restrictions.

13. Derivative and Other Financial Instruments

Investment strategies employed by DUMAC and investment managers retained by DUMAC incorporate the use of various derivative financial instruments. DUMAC uses these instruments for a number of investment purposes, including hedging or altering exposure to certain asset classes and cost-effectively adding exposures to portions of the portfolio. Positions are expected to create gains or losses that, when combined with the applicable portion of the total investment portfolio, provide an expected result.

During fiscal 2019 and 2018, Duke, or external investment managers on Duke's behalf, entered into swap agreements, futures contracts, or forward contracts, and acquired warrants or rights to increase, reduce or otherwise modify investment exposures. These instruments expose Duke to risk of an unexpected movement in the fair value of the underlying security, a counterparty failing to meet its obligations, and, in certain circumstances, not being able to unwind a position at current fair market value due to market illiquidity. Duke has established procedures to monitor and manage these risks.

Duke's investment related derivative exposures, categorized by primary underlying risk, are as follows:

Primary underlying risk as of June 30, 2019	Long Notional	Short Notional	Derivative assets	Derivative liabilities	(Loss) gain
Equity Price[1]	$ 2,137,137	$ 858,801	$ 55,303	$ (38,898)	$ (13,380)
Interest Rate[2]	3,424,508	410,564	8,531	(2,417)	2,553
Commodity Price[3]	369,572	144,863	869	(8,924)	(67,242)
Credit[4]	3,755,579	2,594,909	194,672	(93,760)	(52,492)
Foreign currency exchange rate[5]	301,807	1,058,273	4,413	(6,862)	39,657
Total	$ 9,988,603	$ 5,067,410	$ 263,788	$ (150,861)	$ (90,904)

[1] Includes swaps, and futures contracts.
[2] Includes options, swaps, swaptions, and futures contracts.
[3] Includes swaps and futures contracts.
[4] Includes credit default swaps and credit total return swaps.
[5] Includes forward contracts.

Primary underlying risk as of June 30, 2018	Long Notional	Short Notional	Derivative assets	Derivative liabilities	Gain (loss)
Equity Price[1]	$ 2,495,328	$ 1,036,925	$ 35,482	$ (59,335)	$ 25,818
Interest Rate[2]	1,717,589	1,245,611	1,905	(1,054)	3,593
Commodity Price[3]	540,621	93,027	7,304	(5,910)	69,900
Credit[4]	3,237,695	1,148,320	133,828	(32,157)	(20,230)
Foreign currency exchange rate[5]	232,060	1,391,300	26,925	(7,868)	(15,478)
Total	$ 8,223,293	$ 4,915,183	$ 205,444	$ (106,324)	$ 63,603

As part of relative value strategies, Duke and investment managers on Duke's behalf entered into credit default swap derivative transactions on investment grade and high yield securities which typically have terms of five years or less to buy and sell credit protection. At June 30, 2019 and 2018, the notional of protection sold was $3,542,290 and $3,021,239 and the notional of protection bought with identical underlying assets was $1,207,727 and $677,157, respectively. These instruments are included in the credit line of the preceding tables.

Duke's investment related derivative assets and liabilities at June 30, by counterparty, are as follows:

	2019			2018		
	Assets	Liabilities	Cash Collateral (Held) Pledged	Assets	Liabilities	Cash Collateral Pledged (Held)
Counterparty A	27,524	(7,531)	(25,490)	$ 8,065	$ (6,749)	$ 11,260
Counterparty B	63,829	(11,073)	(50,519)	32,566	(24,810)	(3,071)
Counterparty C	35,526	(23,574)	81,181	49,590	(33,824)	85,150
Counterparty D	88,729	(34,747)	(53,782)	71,929	(23,685)	(38,280)
Counterparty E	6,861	(44,000)	37,130	13,835	(2,427)	(9,140)
Counterparty F	29,982	(12,474)	(15,580)	8,924	(2,340)	333
All Others	11,337	(17,462)	36,422	20,535	(12,489)	15,954
Total	$ 263,788	$ (150,861)	$ 9,362	$ 205,444	$ (106,324)	$ 62,206

In addition, Duke has executed derivative financial instruments in the normal course of managing its debt portfolio using long term strategies. Duke has interest rate swap agreements that are designed to synthetically decrease the variable rate exposure associated with its portfolio of debt. In addition, Duke has a swap agreement designed to reduce the interest rate risk on variable rate indebtedness by utilizing the spread between the yield curves for taxable debt securities and tax-exempt municipal debt securities.

The following table summarizes the general terms for each of DUHS' swap agreements:

Effective date	Associated debt series	Maturity date	Current notional amount	Rate Duke pays	Rate Duke receives
Interest rate:					
August 12, 1993	2012B	June 2023	$ 23,490	5.09%	SIFMA
May 19, 2005	N/A	June 2028	$ 238,400	3.60%	61.52% of one-month LIBOR plus 0.28%
April 1, 2009	Portfolio[6]	June 2039	$ 127,505	4.11%	67.0% of one-month LIBOR
Basis:					
July 6, 2001	N/A	July 2021	$ 400,000	SIFMA	72.13% of one-month LIBOR

[1] Includes options, swaps, and futures contracts.
[2] Includes options, swaps, swaptions, and futures contracts.
[3] Includes options and futures contracts.
[4] Includes credit default swaps, swaptions, and credit total return swaps.
[5] Includes options and forward contracts.
[6] Notional amount of the April 2009 Interest Rate Swap declines coincident with the principal schedules for the Series 2006A/B/C bonds. The residual portion is $5,885.

The fair value of each swap is the estimated amount DUHS would receive or pay to terminate the swap agreement at the reporting date, taking into account current interest rates and the current creditworthiness of the swap counterparties. The fair value is included in other liabilities on the consolidated balance sheets. The change in fair value is included as a gain or loss in other nonoperating activities on the consolidated statements of activities. The net settlement amount incurred on the swaps is included in interest expense on the consolidated statements of activities. The collateral to support the related swaps is included in short-term investments within investments on the consolidated balance sheets. The debt derivative instruments contain cross-collateralization provisions that require each counterparty to post collateral if the fair value meets certain thresholds.

DUHS derivative instruments contain provisions requiring long-term, unsecured debt to be maintained at specified credit ratings from Moody's Investor Service and Standard & Poor's Rating Service. If the ratings of DUHS' debt were to fall below certain benchmarks, the counterparty could request immediate payment on derivatives in net liability positions. At June 30, 2019 and 2018, DUHS' long-term debt ratings exceeded these requirements. The aggregate fair value of all derivative instruments with credit-risk related contingent features that were in a net liability position on June 30, 2019 and 2018 was $77,028 and $56,746, respectively, for which DUHS has posted collateral of $0 and $2,954, respectively, in the normal course of business. If the credit-risk related features underlying these agreements were triggered on June 30, 2019 and 2018, DUHS would have been required to post an additional $77,028 and $53,792, respectively, of collateral to its counterparties.

Financial Information Related to Swap Agreements	2019 Fair Value	2019 Gain (loss)	2018 Fair Value	2018 Gain
August 1993 Interest Rate Swap	$ (2,191)	$ 355	$ (2,546)	$ 1,491
May 2005 Interest Rate Swap	(27,512)	(5,090)	(22,422)	12,100
April 2009 Interest Rate Swap	(47,325)	(15,547)	(31,778)	9,171
July 2001 Basis Swap	580	(105)	685	1,828
Total	$ (76,448)	$ (20,387)	$ (56,061)	$ 24,590

DUHS is exposed to financial loss in the event of nonperformance by a counterparty to any of the financial instruments described above. General market conditions could impact the credit standing of the counterparties and, therefore, potentially impact the value of the instruments on the consolidated balance sheets. DUHS controls this counterparty credit risk by considering the credit rating, business risk, and reputation of any counterparty before entering into a transaction, monitoring for any change in the credit standing of its counterparty during the life of the transaction, and requiring collateral be posted when predetermined thresholds are crossed. DUHS is also exposed to interest rate risk driven by factors influencing the spread between the taxable and tax-exempt market interest rates on its basis swap.

14. Affiliated Organizations

The Private Diagnostic Clinic, PLLC (the PDC)

The PDC is a professional limited liability company consisting of physicians practicing primarily within DUHS facilities and PDC clinics. The purpose of the PDC is to provide a structure separate from Duke in which the members of the physician faculty of the School of Medicine may engage in the private practice of medicine and still serve as members of the faculty of the University conducting clinical teaching and medical research. Under multiple agreements between the PDC and Duke, the PDC: (1) makes payments for professional services supplied by Duke to the PDC; (2) pays rent for the PDC's use of space; and (3) makes payments for the goodwill and other benefits derived from the PDC's association with Duke. A substantial portion of the payments is used by Duke to support academic programs in the clinical departments of the School of Medicine. These payments totaled $141,012 and $137,018 for fiscal 2019 and 2018, respectively, and are recognized as revenue in grants and contracts in the consolidated statements of activities.

The Duke Endowment

Established in 1924 by James Buchanan Duke, The Duke Endowment is a charitable trust created to promote philanthropic purposes by making grants for educational, health care, child care, and religious purposes within North Carolina and South Carolina. The University is a named beneficiary of The Duke Endowment and receives substantial support from The Duke Endowment in the forms of unrestricted operating support and discretionary grants.

While Duke and The Duke Endowment have a common heritage, each having been founded through the generosity of James Buchanan Duke, they are two separate entities, each with its own purposes, office, officers, and trustees. The Duke Endowment has been required by its indenture to distribute certain amounts of income to Duke from the Original Corpus, Corpus Item VIII, and Corpus Item XI, subject to a limited right to withhold by The Duke Endowment trustees. Through June 30, 2019, this right to withhold has never been exercised.

The Duke Endowment trustees now invest for total return in accordance with current investment practices, with the result that (a) the distinction between "principal" and "income" in the traditional sense can no longer be readily identified, if at all, and (b) the traditional "income" that can be identified is often inadequate to meet beneficiary needs. Accordingly, by an Order dated December 15, 2009, the Superior Court of Mecklenburg County, North Carolina further broadened the authority of The Duke Endowment trustees to distribute principal to its beneficiaries.

Unrestricted operating support from The Duke Endowment was $12,500 for fiscal 2019 and 2018. Such amounts are reflected in investment return designated for current operations in the consolidated statements of activities.

Duke received discretionary grant payments from The Duke Endowment of $38,258 and $36,213 for fiscal 2019 and 2018, respectively.

At June 30, 2019 and 2018, the portion of The Duke Endowment's net assets included in net assets with donor restrictions on Duke's consolidated balance sheets, and from which Duke derives unrestricted operating support, had a fair value of $773,850 and $759,303 respectively. Duke has no equity interest in the principal of The Duke Endowment trust, which had a fair value of approximately $3.8 billion at June 30, 2019.

15. Functional Expenses

Expenses are presented by functional classification in accordance with the overall service mission of Duke. Duke's primary program services are academic instruction and research, and health care services. Expenses for auxiliary enterprises, library, and student services are incurred in support of academic instruction and research, and as such are included therein. Plant operation and maintenance expense is allocated to program and supporting activities based upon periodic assessment of facilities usage. Other natural expenses attributable to more than one functional expense category are allocated using a variety of cost allocation techniques such as square footage and time and effort. Total amounts allocated in fiscal 2019 and 2018 were $156,247 and $149,465, respectively.

Expenses are reported in the consolidated statements of activities in natural categories. Functional expenses were categorized as follows:

For the year ended June 30, 2019:	Academic instruction & research	Health care services	General administration	Total
Salaries and wages	$ 1,228,209	$ 953,858	$ 629,065	$ 2,811,132
Employee benefits	299,296	214,383	159,671	673,350
Student aid	46,205	–	–	46,205
Other operating expenses[1]	811,849	1,397,436	230,428	2,439,713
Interest expense	53,313	63,451	27,223	143,987
Depreciation expense	248,375	139,338	33,682	421,395
Total	$ 2,687,247	$ 2,768,466	$ 1,080,069	$ 6,535,782

For the year ended June 30, 2018:	Academic instruction & research	Health care services	General administration	Total
Salaries and wages	$ 1,174,592	$ 873,766	$ 591,042	$ 2,639,400
Employee benefits	284,410	211,039	146,833	642,282
Student aid	44,956	–	–	44,956
Other operating expenses[1]	800,302	1,297,674	214,157	2,312,133
Interest expense	53,577	70,233	26,345	150,155
Depreciation expense	225,453	136,729	35,166	397,348
Total	$ 2,583,290	$ 2,589,441	$ 1,013,543	$ 6,186,274

[1] Other operating expenses primarily includes payments for supplies, professional services, and subrecipients for research.

16. Managing Conflicts of Interest

Members of Duke's governing boards and senior administration may, from time to time, be associated, either directly or indirectly, with companies doing business with Duke.

Written conflict of interest policies are maintained for members of the governing boards of the University, DUHS, and DUMAC that require, among other things, that no member of a governing board may participate in any decision in which he or she (or an immediate family member) has a material financial interest. Each governing board member is required to certify compliance with the conflict of interest policy on an annual basis and indicate whether Duke does business with an entity in which that member (or an immediate family member) has a material financial interest. When such relationships exist, measures, including written management plans, are taken to mitigate any actual or perceived conflict, including requiring that such transactions be conducted at arm's length, for good and sufficient consideration, based on terms that are fair and reasonable to and in the best interests of Duke, and in accordance with applicable conflict of interest laws and policies in effect. No such associations that have been disclosed are considered to be material to the consolidated financial statements.

For members of the senior administration, Duke requires annual disclosure of significant financial interests in, or employment or consulting relationships with, entities doing business with Duke. These annual disclosures cover members of the senior administration and their immediate family members. When such relationships exist, measures are taken to appropriately manage the actual or perceived conflict in the best interests of Duke. No such associations that have been disclosed are considered to be material to the consolidated financial statements.

17. Commitments and Contingencies

Construction and Purchase Commitments

At June 30, 2019, open contracts for the construction of physical properties amounted to $684,357 and outstanding purchase orders for normal operating supplies and equipment amounted to $28,155.

Leases

Duke leases various machinery, equipment and buildings under operating and capital leases expiring at various dates through 2037. Total rental expense in fiscal 2019 and 2018 for all operating leases was $105,896 and $96,848, respectively.

Future minimum lease payments under noncancelable capital and operating leases as of June 30, 2019 are as follows:

Year	Capital Leases	Operating Leases	Total
2020	$ 10,698	$ 102,758	$ 113,456
2021	10,862	105,108	115,970
2022	11,031	101,633	112,664
2023	10,849	91,631	102,480
2024	9,372	83,887	93,259
Thereafter	251,028	464,799	715,827
Total minimum lease payments	303,840	949,816	1,253,656
Less sublease rentals by the PDC	–	(18,232)	(18,232)
Total minimum payments less subleases	303,840	$ 931,584	$ 1,235,424
Less: Interest portion	(167,947)		
Capital lease obligations	$ 135,893		

Medical Malpractice Coverage

DCC (see Note 1) insures a portion of the medical malpractice risks and patient general liability risks of DUHS clinical providers and the PDC. The assets, liabilities, and results of operations for DCC have been reflected in the net assets without donor restrictions of Duke. Policy limits for the years ended June 30, 2019 and 2018 were $110,000 per incident and $145,000 in the aggregate. DCC limits its exposure to loss through reinsurance and excess loss agreements.

Estimated professional liability costs include the estimated cost for reported claims incurred in the DCC program. DCC evaluates its estimated professional liability on a discounted actuarial basis. The discount rate at June 30, 2019 and 2018 is 3.5%. Accrued professional liability costs as of June 30, 2019 and 2018 amounted to $42,238 and $38,408, respectively. Cash, investments, and other receivables in this amount have been designated by DUHS to settle these claims. Also included in estimated professional liability costs are estimated claims incurred but not reported related to DUHS in the amounts of $6,276 and $7,000 as of June 30, 2019 and 2018, respectively.

The estimated liability for professional and general liability claims may be significantly affected if current and future claims differ from historical trends. While the administration monitors reported claims closely and considers potential outcomes as estimated by its actuaries when determining its professional and patient general liability accruals, the complexity of the claims, the extended period of time to settle the claims, and the wide range of potential outcomes complicate the estimation. In the opinion of the administration, adequate provision has been made for this related risk.

Self-Insurance

Duke provides employee healthcare benefits, long-term disability benefits, unemployment benefits, and workers' compensation benefits primarily though employer contributions, participant contributions, and excess loss insurance, and manages those programs through third-party administrators. In the opinion of the administration, adequate

provision has been made for the related risks within accounts payable and accrued payroll or accrued postretirement/postemployment and other benefit obligations on Duke's consolidated balance sheets.

Partnership Investment Commitments

There were $1.8 billion of commitments to private capital and real asset investments as of June 30, 2019. These funds may be drawn down over the next several years upon request by the general partners. Duke expects to finance these commitments with available cash and expected proceeds from the sales of securities.

Contingencies

Duke is involved in various legal actions occurring in the normal course of activities. While the final outcomes cannot be determined at this time, the administration is of the opinion that the resolution of these matters will not have a material adverse effect on Duke's financial position. In fiscal 2019, Duke settled three lawsuits alleging, respectively, research misconduct, antitrust, and ERISA violations. All related amounts have been reflected as other nonoperating activities within the consolidated financial statements.

Laws and regulations governing Medicare, Medicaid, and other federal programs are complex and subject to interpretation. Duke, in part through its compliance program, seeks to ensure compliance with such laws and regulations, and to rectify instances of noncompliance with governmental program rules. Duke believes that it is in compliance with all applicable laws and regulations and is not aware of any pending or threatened investigations involving allegations of potential wrongdoing that would have a material effect on Duke's consolidated financial statements. Compliance with such laws and regulations is subject to future government review and interpretation as well as significant regulatory action, including fines, penalties and exclusion from the Medicare, Medicaid, and other Federal programs.

SCHEDULE OF EXPENDITURES OF FEDERAL AWARDS, SCHEDULE OF EXPENDITURES OF STATE AWARDS, NOTES TO SCHEDULES OF EXPENDITURES OF FEDERAL AND STATE AWARDS, AND UNIFORM GUIDANCE REPORTS

DUKE UNIVERSITY

Schedule of Expenditures of Federal Awards

Year ended June 30, 2019

Federal grantors/pass-through grantors/agencies or cluster title	Federal CFDA number	Direct award or pass-through entity identifying number	Passed through to subrecipients	Federal expenditures
Research and Development Cluster:				
Department of Agriculture	10.RD	Direct	$ —	105,160
Agricultural Research – Basic and Applied Research				
Pass-through programs from:				
CRDF Global	10.001	DAA2-18-64014-2	—	20,962
CRDF Global	10.001	DAA3-18-64061-1	—	15,559
Venture Well	10.001	DAA3-19-65152-1	—	10,872
Subtotal Agricultural Research – Basic and Applied Research (CFDA 10.001)			—	47,393
Consumer Data and Nutrition Research	10.253	Direct	48,892	249,082
Agricultural Market and Economic Research	10.290	Direct	—	20,358
Agriculture and Food Research Initiative (AFRI)	10.310	Direct	125,981	338,382
Pass-through programs from:				
University of Nebraska	10.310	25-6221-0372-002	—	53
Water Resources Research Institute	10.310	2014-2789-01- MNL	—	6,414
Subtotal Agriculture and Food Research Initiative (AFRI) (CFDA 10.310)			125,981	344,849
International Forestry Programs	10.684	Direct	—	138,152
Pass-through programs from:				
Agence Nationale Des Parcs Nationaux Du Gabon	10.UNK	No Award Number	—	52,532
The Cloudburst Group	10.UNK	DUKE-MCC-103269-001	—	13,146
Total Department of Agriculture			174,873	970,672
Department of Commerce				
Ocean Exploration	11.011	Direct	24,549	219,932
Cluster Grants	11.020	Direct	33,216	33,216
Sea Grant Support				
Pass-through programs from:				
Water Resources Research Institute	11.417	2014-1920-28	—	3,488
Water Resources Research Institute	11.417	2016-0454-05	—	1,250
Water Resources Research Institute	11.417	2018-0448-01	—	2,103
Water Resources Research Institute	11.417	2018-1045-06	—	49,146
Subtotal Sea Grant Support (CFDA 11.417)			—	55,987
Coastal Zone Management Administration Awards				
Pass-through programs from:				
Regents of the University of Michigan	11.419	SUBK00009740	—	141
Regents of the University of Michigan	11.419	SUBK00009740 SUB #1-P3531770	—	69,020
Subtotal Coastal Zone Management Administration Awards (CFDA 11.419)			—	69,161
Climate and Atmospheric Research	11.431	Direct	—	147,153
Unallied Science Program	11.472	Direct	—	57,293
Measurement and Engineering Research and Standards	11.609	Direct	—	119,735
Arrangements for Interdisciplinary Research Infrastructure:				
Pass-through programs from:				
Iowa State University	11.619	426-17-02F	—	161,561
North Carolina Coastal Federation	11.UNK	No Award Number	—	8,639
Total Department of Commerce			57,765	872,677
Department of Defense	12.RD	Direct	3,514,762	7,842,457
Basic and Applied Scientific Research	12.300	Direct	2,241,122	10,657,555
Pass-through programs from:				
Battelle	12.300	559281	—	1,777
Institute for Wildlife Studies	12.300	210-001-2015-DUKE	—	138,518
Marine Biological Laboratory	12.300	53785	—	33,087
University of California – San Diego	12.300	S9000383/38598059	—	69,128
University of Illinois at Urbana-Champaign	12.300	071787-14594 SUB #2-P3530804	236,121	236,121
University of Illinois at Urbana-Champaign	12.300	080035-14594 SUB #1-P3530804	—	212,938
University of Pennsylvania	12.300	570496	—	165,070
University of Pennsylvania	12.300	570496 SUB #1-2830920	—	120,123
University of St. Andrews	12.300	14388	—	136,542
University of St. Andrews	12.300	15608	—	49,848
University of St. Andrews	12.300	17266	—	17,217
University of St. Andrews	12.300	17266 SUB#1-P3531805	—	95,712
University of Texas Health Science Center at San Antonio	12.300	157747/153279 SUB #3-P3530853	—	22,605
University of Utah	12.300	D10046918	—	33,045
Water Resources Research Institute	12.300	2015-1959-01	—	135,519
Water Resources Research Institute	12.300	2017-3075-01	—	52,656
Subtotal Basic and Applied Scientific Research (CFDA 12.300)			2,477,243	12,177,461
Scientific Research – Combating Weapons of Mass Destruction	12.351	Direct	66,395	332,359
Military Medical Research And Development	12.420	Direct	534,524	15,231,091
Pass-through programs from:				
Boston VA Research Institute, Inc.	12.420	0204FEDA-1	—	17,597
Henry M. Jackson Foundation	12.420	2573	—	15,158
Johns Hopkins University Applied Physics Laboratory	12.420	2004148580	—	17,059
Johns Hopkins University Applied Physics Laboratory	12.420	No Award Number	—	1,514
Massachusetts Eye and Ear Infirmary	12.420	2300145	—	10,328
Mountain Home Research & Education Corporation	12.420	No Award Number	—	8,872
North Carolina Central University	12.420	A14-0008-S004	—	2,287
Northern California Institute for Research & Education	12.420	YAF2138-01	—	80,553
Ohio State University	12.420	60051953	—	193,187
St Joseph's Hospital & Medical Center	12.420	32689DUKE	—	272,256
The Geneva Foundation	12.420	S-1580-01	—	11,128
University of California – Los Angeles	12.420	1564 G WA459	—	38,815
University of California – San Francisco	12.420	9947SC	—	29,667
University of Minnesota	12.420	N006814101	—	3,444
University of Missouri	12.420	C00052815-1	—	84,681
University of Texas Health Science Center at San Antonio	12.420	155611/155536	—	(5,076)
University of Texas Health Science Center at San Antonio	12.420	159419/155536	—	50,060
University of Texas Health Science Center at San Antonio	12.420	159420/155536	—	272,689
University of Texas Health Science Center at San Antonio	12.420	159727/155536	—	265,592
Wake Forest University School Of Medicine	12.420	WFUHS 440330	—	745,370
Wake Forest University School Of Medicine	12.420	WFUHS 440330 SUB #1 P-3838647	—	327,243
Wake Forest University School Of Medicine	12.420	WFUHS 440330 SUB #2 P-3838647	—	265,287
Wayne State University	12.420	WSU19048	—	13,957
Weill Medical College of Cornell University	12.420	181691-02	—	234,388
Subtotal Military Medical Research And Development (CFDA 12.420)			534,524	18,187,147

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Federal grantors/pass-through grantors/agencies or cluster title	Federal CFDA number	Direct award or pass-through entity identifying number	Passed through to subrecipients	Federal expenditures
Basic Scientific Research	12.431	Direct	$ 1,772,346	5,308,170
Pass-through programs from:				
Johns Hopkins University Applied Physics Laboratory	12.431	144984	—	19,655
Johns Hopkins University Applied Physics Laboratory	12.431	124848	—	89,626
University of Georgia	12.431	RR274-434/S000727	—	2,910
University of Illinois at Urbana-Champaign	12.431	078122-17022	—	83,183
University of Maryland College Park	12.431	38864-Z8425102 P-3531341	—	87,350
University of Maryland College Park	12.431	38864-Z8425102	—	174,524
University of Southern California	12.431	104307597	—	47,027
University of Southern California	12.431	98587868	—	136,396
University of Washington	12.431	UWSC10094	—	48,964
Subtotal Basic Scientific Research (CFDA 12.431)			1,772,346	5,997,805
Basic, Applied, and Advanced Research In Science And Engineering	12.630	Direct	—	190,032
Pass-through programs from:				
Florida International University	12.630	800006441-01UG	—	4,683
Subtotal Basic, Applied, and Advanced Research In Science And Engineering (CFDA 12.630)			—	194,715
Uniformed Services University Medical Research Projects				
Pass-through programs from:				
Henry M. Jackson Foundation	12.750	2605	—	1,479,527
Henry M. Jackson Foundation	12.750	2605 SUB #1-P3837027	1,277,915	1,277,915
Henry M. Jackson Foundation	12.750	2605 SUB #2-P3837027	—	194,322
Henry M. Jackson Foundation	12.750	2605 SUB #3-P3837027	204,259	204,259
Henry M. Jackson Foundation	12.750	2605 SUB #4-P3837027	—	65,764
Henry M. Jackson Foundation	12.750	3359	—	114,987
Institute for Medical Research, Inc.	12.750	3589-DUKE-2017	—	57,795
Subtotal Uniformed Services University Medical Research Projects (CFDA 12.750)			1,482,174	3,394,569
Air Force Defense Research Sciences Program	12.800	Direct	161,798	1,302,197
Pass-through programs from:				
Princeton University	12.800	SUB0000208	—	69,775
University of Florida	12.800	SUB00001781 SUB #1-P3531904	—	18,493
University of Illinois at Urbana-Champaign	12.800	085899-16292	—	104,151
University of North Carolina – Chapel Hill	12.800	5100130	—	208,279
Subtotal Air Force Defense Research Sciences Program (CFDA 12.800)			161,798	1,702,895
Research And Technology Development	12.910	Direct	3,085,265	9,762,114
Pass-through programs from:				
Johns Hopkins University Applied Physics Laboratory	12.910	2002850300 SUB#1-P3838547	—	(720)
Rutgers, The State University of New Jersey	12.910	SUB00000009	—	27,832
Rutgers, The State University of New Jersey	12.910	SUB00000009 SUB #1-P3531354	—	9,755
Subtotal Research And Technology Development (CFDA 12.910)			3,085,265	9,798,981
Pass-through programs from:				
BAE Systems	12.UNK	1006840	—	80,075
Chicago Bridge and Iron	12.UNK	202158	—	27,872
Columbia University	12.UNK	4(GG012664)	—	257,263
Creare, Inc.	12.UNK	S604	—	75,197
Georgia Institute of Technology	12.UNK	RK921-G3	—	12,592
Georgia Institute of Technology	12.UNK	RF154-G1	—	113,416
Georgia Institute of Technology	12.UNK	RK091-S1	—	143,857
Henry M. Jackson Foundation	12.UNK	829295 SUB #3-P3837343	—	19,561
Henry M. Jackson Foundation	12.UNK	829295 SUB #4-P3837343	—	11,709
Henry M. Jackson Foundation	12.UNK	829295 SUB #7-P3837343	—	10,971
Johns Hopkins University Applied Physics Laboratory	12.UNK	No Award Number	—	(7,223)
Johns Hopkins University Applied Physics Laboratory	12.UNK	117933 SUB #1-P3835032	—	129,877
Johns Hopkins University Applied Physics Laboratory	12.UNK	146793	—	427,825
Johns Hopkins University Applied Physics Laboratory	12.UNK	140142	—	—
Lockheed Martin Corporation	12.UNK	No Award Number	—	457,850
Massachusetts Institute of Technology	12.UNK	7000370749	—	155,146
Memorial Sloan-Kettering Cancer Center	12.UNK	BD522363	—	4,288
Memorial Sloan-Kettering Cancer Center	12.UNK	BD522363A	—	16,722
New York University	12.UNK	F0270-1	—	82,448
Ology Bioservices Inc.	12.UNK	No Award Number	—	596,167
Optimal Synthesis, Inc.	12.UNK	No Award Number	—	30,000
Oregon State University	12.UNK	RM134A-A	—	60,450
Princeton University	12.UNK	SUB0000253	—	36,373
Quantum Benchmark	12.UNK	No Award Number	—	36,820
Research Triangle Institute International	12.UNK	2-340-0216887-65526L	—	38,804
Rice University	12.UNK	R1A263	—	34,178
Sandia National Laboratories	12.UNK	1617618	—	7,874
Sandia National Laboratories	12.UNK	1682073	—	191,658
Southwest Research Institute	12.UNK	L99045RI	—	90,115
Southwest Research Institute	12.UNK	L99045RI SUB#1-P-2832001	19,756	31,610
Srico, Inc.	12.UNK	18042DUKE	—	193,212
Teledyne Scientific & Imaging, LLC	12.UNK	PO00149946	—	2,646
University of California – Los Angeles	12.UNK	2000-S-TG173	—	39,704
University of Massachusetts – Amherst	12.UNK	16-009034 B 01	—	294,773
University of Southern California	12.UNK	69094153	—	10,528
University of Southern California	12.UNK	70042648	—	9,633
Virginia Polytechnic Institute	12.UNK	450522-19200	—	64,782
Water Resources Research Institute	12.UNK	2017-1532-17	—	56,129
Water Resources Research Institute	12.UNK	2017-1532-17 SUB #1-P3531637	—	82,794
Water Resources Research Institute	12.UNK	2019-0928-05 SUB #1-P3531858	—	30,421
Water Resources Research Institute	12.UNK	2019-0928-05 SUB #2-P3531858	—	51,645
Water Resources Research Institute	12.UNK	2019-0928-05 SUB #3-P3531858	—	745
Total Department of Defense			13,114,263	63,638,896
Department of Interior	15.RD	Direct	—	75,520
Bureau of Ocean Energy Management (BOEM) Environmental Studies (ES)				
Pass-through programs from:				
University of North Carolina – Wilmington	15.423	578020-18-01	—	282,726
University of North Carolina – Wilmington	15.423	578020-18-01 SUB #1-P3531559	62,540	62,540
University of North Carolina – Wilmington	15.423	578020-18-01 SUB #2-P3531559	324,010	265,127
University of North Carolina – Wilmington	15.423	578020-18-01 SUB #3-P3531559	67,432	70,757
University of North Carolina – Wilmington	15.423	578020-18-01 SUB#4-P3531559	—	87,090
Subtotal Bureau of Ocean Energy Management (BOEM) Environmental Studies (ES) (CFDA 15.423)			453,982	768,240
Wildlife Without Borders-Africa	15.651	Direct	—	119,567
Assistance to State Water Resources Research Institutes				
Pass-through programs from:				
Water Resources Research Institute	15.805	2016-1887-03	—	5,078
U.S. Geological Survey Research and Data Collection	15.808	Direct	—	(966)
National Climate Change and Wildlife Science Center				
Pass-through programs from:				
Water Resources Research Institute	15.820	2017-1878-04	—	50,870

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Federal grantors/pass-through grantors/agencies or cluster title	Federal CFDA number	Direct award or pass-through entity identifying number	Passed through to subrecipients	Federal expenditures
Water Resources Research Institute	15.820	2017-1878-08	$ —	46,941
Subtotal National Climate Change and Wildlife Science Center (CFDA 15.820)			—	97,811
Total Department of Interior			453,982	1,065,250
Department of Justice				
National Institute of Justice Research, Evaluation, and Development Project Grants				
Pass-through programs from:				
University of North Carolina – Chapel Hill	16.560	5110038	—	14,601
Total Department of Justice			—	14,601
Department of State				
Global Threat Reduction	19.033	Direct	—	100,385
Total Department of State			—	100,385
Department of Transportation	20.RD	Direct	—	1,257
Pass-through programs from:				
University of North Carolina – Chapel Hill	20.UNK	5106578	—	111,206
University of North Carolina – Chapel Hill	20.UNK	5106578 SUB #1-P3531598	—	1,301
Total Department of Transportation			—	113,764
National Aeronautics and Space Administration	43.RD	Direct	—	276,440
Science	43.001	Direct	44,255	1,099,486
Pass-through programs from:				
Bay Area Environmental Research Institute	43.001	No Award number	—	66,241
Temple University	43.001	259709	—	56,906
University of Maryland College Park	43.001	60320-Z6027203	—	57,198
University of North Carolina – Chapel Hill	43.001	5109296	—	96,475
Subtotal Science (CFDA 43.001)			44,255	1,376,306
Exploration	43.003	Direct	—	483,392
Pass-through programs from:				
Baylor College of Medicine	43.003	T0405	—	43,465
Baylor College of Medicine	43.003	7000000467	—	249,514
Baylor College of Medicine	43.003	7000000445	—	242,843
Baylor College of Medicine	43.003	7000000445 SUB #1-P2832357	—	51,026
Subtotal Exploration (CFDA 43.003)			—	1,070,240
Space Operations				
Pass-through programs from:				
University of Illinois at Urbana-Champaign	43.007	084091-16042	—	13,824
Education				
Pass-through programs from:				
Water Resources Research Institute	43.008	2015-1942-DU-01	—	10,250
Water Resources Research Institute	43.008	2015-1942-DU-02	—	4,201
Subtotal Education (CFDA 43.008)			—	14,451
Pass-through programs from:				
Baylor College of Medicine	43.UNK	7000000445	—	123,444
Columbia University	43.UNK	1 (GG012402-02)	—	61,043
East Central University	43.UNK	No Award number	—	3,148
Johns Hopkins University Applied Physics Laboratory	43.UNK	143008	—	106,564
Space Telescope Science Institute	43.UNK	HST-GO-15640.010-A	—	16,742
Total National Aeronautics and Space Administration			44,255	3,062,202
National Endowment for the Humanities				
Promotion of the Humanities Federal/State Partnership				
Pass-through programs from:				
North Carolina Humanities Council	45.129	No Award Number	—	18,602
Promotion of the Humanities Research	45.161	Direct	—	108,813
Promotion of the Humanities Office of Digital Humanities	45.169	Direct	33,811	46,499
Pass-through programs from:				
University of Maine	45.169	UMS-1194	—	11,830
Subtotal Promotion of the Humanities Office of Digital Humanities (CFDA 45.169)			33,811	58,329
Pass-through programs from:				
American Center of Oriental Research	45.UNK	No Award Number	—	(5,726)
Total National Endowment for the Humanities			33,811	180,018
Institute of Museum and Library Services				
Museums for America	45.301	Direct	—	38,048
National Science Foundation	47.RD	Direct	153,358	489,640
Engineering Grants	47.041	Direct	72,697	2,909,784
Pass-through programs from:				
Multi3D LLC	47.041	No Award Number	—	19,610
Texas A&M University	47.041	M1900036	—	1,250
University of Illinois at Urbana-Champaign	47.041	083676-16019	—	80,169
University of Maryland College Park	47.041	52222-Z3075202	—	122,484
University of North Carolina – Chapel Hill	47.041	5037015	—	18,841
University of North Carolina – Chapel Hill	47.041	5037015 SUB #1-P3530828	—	7,740
University of North Carolina – Chapel Hill	47.041	5037015 SUB #2-P3530828	—	2,452
Virginia Polytechnic Institute	47.041	479890-19200	—	7,515
Water Resources Research Institute	47.041	2015-1760-02	—	305,375
Water Resources Research Institute	47.041	2015-1760-02 SUB #1 P3531200	—	3,342
Subtotal Engineering Grants (CFDA 47.041)			72,697	3,478,562
Mathematical And Physical Sciences	47.049	Direct	554,135	8,122,804
Pass-through programs from:				
University of North Carolina – Chapel Hill	47.049	5108247	—	1,442,052
University of North Carolina – Chapel Hill	47.049	5108247 SUB #1-P3531573	—	139,884
University of North Carolina – Chapel Hill	47.049	5037426 SUB #1-P3530647	—	(601)
Subtotal Mathematical And Physical Sciences (CFDA 47.049)			554,135	9,704,139
Geosciences	47.050	Direct	952,637	2,855,093
Pass-through programs from:				
Columbia University	47.050	1 (GG008808)	—	152,851
Research Foundation of State University of New York	47.050	R984137	—	1,953
University of California – Santa Cruz	47.050	A15-0275-S001-P0651760	—	3,401
University of Georgia	47.050	SUB00000074	—	30,643
University of North Carolina – Wilmington	47.050	577910-18-02	—	42,896
Subtotal Geosciences (CFDA 47.050)			952,637	3,086,837
Computer And Information Science And Engineering	47.070	Direct	45,915	7,019,177

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Pass-through programs from:				
Indiana University	47.070	BL4812537DU	$ —	84,196
New York University	47.070	F7299-01	—	(192)
Rensselaer Polytechnic Institute	47.070	A12761 SUB	—	10,340
Rensselaer Polytechnic Institute	47.070	A12761	—	45,706
University of Illinois at Urbana-Champaign	47.070	067846-17006	—	43,667
University of Illinois at Urbana-Champaign	47.070	067846-17005	—	43,667
Virginia Polytechnic Institute	47.070	479590-19200A	—	24,799
Virginia Polytechnic Institute	47.070	479589-19200	—	54,817
Water Resources Research Institute	47.070	2017-2103-01	—	14,935
Subtotal Computer And Information Science And Engineering (CFDA 47.070)			45,915	7,341,112
Biological Sciences	47.074	Direct	1,324,059	8,248,520
Pass-through programs from:				
Harvard University	47.074	131716-5103068	—	61,601
Research Foundation of State University of New York	47.074	79977/2/1143699	—	53,152
University of California – Riverside	47.074	S-000696	—	2,677
University of Colorado Health Sciences Center	47.074	0313.05.0482B	—	2,435
University of Florida	47.074	UFDSP00011895	—	51,085
University of Florida	47.074	UFDSP00011370	—	86,653
University of Maine	47.074	UMS-1045	—	75,509
University of North Carolina – Chapel Hill	47.074	5037279	—	31,618
University of North Carolina – Chapel Hill	47.074	5054568	—	532
University of North Carolina – Chapel Hill	47.074	5111182	—	2,906
University of Notre Dame	47.074	203467DU	—	14,482
Water Resources Research Institute	47.074	2019-1173-01	—	139,801
Subtotal Biological Sciences (CFDA 47.074)			1,324,059	8,770,971
Social, Behavioral, And Economic Sciences	47.075	Direct	182,729	2,389,119
Pass-through programs from:				
Carnegie Mellon University	47.075	1122280-377073	—	15,115
Mount Holyoke College	47.075	GD9011	—	4,325
Touro University	47.075	00010SC	—	5,567
University of California – Berkeley	47.075	9267	—	25,072
University of North Carolina – Chapel Hill	47.075	5102426	—	(372)
University of Southern California	47.075	74885961	—	32,766
Subtotal Social, Behavioral, And Economic Sciences (CFDA 47.075)			182,729	2,471,592
Education and Human Resources	47.076	Direct	114,969	4,844,255
Pass-through programs from:				
University of Chicago	47.076	FP068516-A	—	9,888
Subtotal Education and Human Resources (CFDA 47.076)			114,969	4,854,143
Office of International Science and Engineering	47.079	Direct	220,375	449,863
Pass-through programs from:				
University of Chicago	47.079	OISE-18-64072-1	—	1,722
Subtotal Office of International Science and Engineering (CFDA 47.079)			220,375	451,585
Office of Integrative Activities				
Pass-through programs from:				
University of Missouri	47.083	C00060846-6	—	15,389
Pass-through programs from:				
Institute for Advanced Studies	47.UNK	7449-2305	—	15,118
Intel Corporation	47.UNK	22337415	—	1,960
Johns Hopkins University Applied Physics Laboratory	47.UNK	2003427669	—	52,510
Qatch Technologies LLC	47.UNK	1-P2831215	—	—
Qatch Technologies LLC	47.UNK	No Award Number	—	6,391
Research Foundation of State University of New York	47.UNK	79376-DUKE	—	19,855
University of North Carolina – Chapel Hill	47.UNK	5107310	—	103,226
University of North Carolina – Chapel Hill	47.UNK	5107310 SUB#1-P3531486	—	42,851
University of North Carolina – Chapel Hill	47.UNK	5107310 SUB#2-P3531486	—	106,312
University of Washington	47.UNK	UWSC9463 SUB #1-P3531401	—	600
University of Washington	47.UNK	UWSC9463	—	200,388
US Ignite	47.UNK	No Award Number	—	23,550
US Ignite	47.UNK	5-P3890779	9,987	9,987
US Ignite	47.UNK	6-P3890779	—	10,000
US Ignite	47.UNK	3-P3890779	—	18,000
US Ignite	47.UNK	4-P3890779	—	4,204
Total National Science Foundation			3,630,861	41,278,922
Department of Veterans Affairs				
Pass-through programs from:				
FHI 360	64.UNK	No Award Number	—	1,043
FHI 360	64.UNK	102131.004.001.001	—	4,899
Total Department of Veterans Affairs			—	5,942
Environmental Protection Agency	66.RD	Direct	10,158	380,480
Science To Achieve Results (STAR) Research Program				
Pass-through programs from:				
Dartmouth College	66.509	R922	—	24,489
Pass-through programs from:				
ICF International, Inc.	66.UNK	16ANBO0001	—	189,335
ICF International, Inc.	66.UNK	18ANBO0023	—	132,233
Total Environmental Protection Agency			10,158	726,537
Department of Energy				
Office Of Science Financial Assistance Program	81.049	Direct	162,384	9,979,248
Pass-through programs from:				
Electron Energy Corporation	81.049	37522	—	2,065
Massachusetts Institute of Technology	81.049	5710004153	—	18,442
Montana State University	81.049	G145-17-W5072	—	(150)
Temple University	81.049	254998-DUKE	—	40,084
Temple University	81.049	262850-02	—	97,436
University of North Georgia	81.049	140-001	—	42,662
Washington State University	81.049	134124-G003967	—	110,973
Subtotal Office Of Science Financial Assistance Program (CFDA 81.049)			162,384	10,290,760
Renewable Energy Research And Development	81.087	Direct	770,049	1,480,111
Pass-through programs from:				
Yale University	81.087	C17E12619 (CON-80000148)	—	54,374
Subtotal Renewable Energy Research And Development (CFDA 81.087)			770,049	1,534,485
Fossil Energy Research and Development				
Pass-through programs from:				
Carnegie Mellon University	81.089	1070241-410346	—	21,079
Stewardship Science Grant Program	81.112	Direct	—	394,914

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Defense Nuclear Nonproliferation Research				
Pass-through programs from:				
Regents of the University of Michigan	81.113	3003222365	$ —	316,444
Nuclear Energy Research, Development and Demonstration	81.121	Direct	—	150,718
Advanced Research Projects Agency – Energy	81.135	Direct	94,658	915,522
Pass-through programs from:				
Brookhaven National Labs	81.UNK	148120	—	—
Brookhaven National Labs	81.UNK	148120 SUB #1-P3831516	—	8,010
Brookhaven National Labs	81.UNK	324196	—	(4,793)
Brookhaven National Labs	81.UNK	327643	—	71,766
Brookhaven National Labs	81.UNK	335323	—	51,758
Brookhaven National Labs	81.UNK	349352	—	62,955
Brookhaven National Labs	81.UNK	360583	—	9,741
Fermilab	81.UNK	651868	—	146,322
Fermilab	81.UNK	624046 SUB #1-P3838494	—	155,279
Fermilab	81.UNK	253596-SAE	—	15,063
Jefferson Science Associates	81.UNK	JSA-18-C0268	—	74,539
Jefferson Science Associates	81.UNK	No Award Number	—	29,375
Lawrence Livermore National Laboratory	81.UNK	B614628	—	60,177
Lawrence Livermore National Laboratory	81.UNK	B626859	—	5,440
Lawrence Livermore National Laboratory	81.UNK	B627926	—	47,610
Lawrence Livermore National Laboratory	81.UNK	B632269	—	8,404
Lawrence Livermore National Laboratory	81.UNK	B633205	—	43,251
National Renewable Energy Laboratory	81.UNK	XGJ-9-92006-01 SUB#1- P2832298	—	57,732
National Renewable Energy Laboratory	81.UNK	XGJ-9-92006-01 SUB#2- P2832298	—	34,625
National Renewable Energy Laboratory	81.UNK	XGJ-9-92006-01	—	61,801
Oak Ridge National Laboratory	81.UNK	4200000567 TO 4000150576	—	64,867
Oak Ridge National Laboratory	81.UNK	4000152260 MNL	—	25,537
Oak Ridge National Laboratory	81.UNK	4000155949	—	157,593
Sandia National Laboratories	81.UNK	1991956	—	75,325
Sandia National Laboratories	81.UNK	1166466	—	20,020
Sandia National Laboratories	81.UNK	1756815	—	53,916
Sandia National Laboratories	81.UNK	1972200	—	87,575
Sandia National Laboratories	81.UNK	1972200 SUB #1 P2832515	—	12,428
Sandia National Laboratories	81.UNK	2022078	—	9,400
Triad National Security	81.UNK	519640	—	115,011
University of California – Berkeley	81.UNK	7463277	—	6,573
University of Chicago Argonne National Lab	81.UNK	7F-30170	—	(38)
Total Department of Energy			1,027,091	15,191,184
Department of Education				
National Resource Centers Program for Foreign Language and Area Studies of Foreign Language and International Studies Program and Foreign Language and Area Studies Fellowship Program				
Pass-through programs from:				
University of North Carolina at Chapel Hill	84.015	5100422	—	35,808
Javits Gifted and Talented Students Education	84.206	Direct	—	285,903
Pass-through programs from:				
University of Arkansas for Medical Sciences	84.206	211345-DU18	—	16,318
University of Connecticut	84.206	314057	—	25,625
Subtotal Javits Gifted and Talented Students Education (CFDA 84.206)			—	327,846
Education Research, Development and Dissemination	84.305	Direct	203,906	1,213,269
Pass-through programs from:				
University of Delaware	84.305	43803	—	74,400
University of North Carolina – Chapel Hill	84.305	5101693	—	18,534
University of North Carolina – Chapel Hill	84.305	5107737	—	52,345
Subtotal Education Research, Development and Dissemination (CFDA 84.305)			203,906	1,358,548
Pass-through programs from:				
American Institutes for Research	84.UNK	03230.002.13	—	(5,312)
Total Department of Education			203,906	1,716,890
Scholarship Foundations				
MCC Foreign Assistance for Overseas Programs				
Pass-through programs from:				
Social Impact Inc.	85.002	100090-S-18-0600(PO00209)	—	55,844
Department of Health and Human Services	93.RD	Direct	3,391,675	32,755,568
Birth Defects and Developmental Disabilities – Prevention and Surveillance	93.073	Direct	45,990	445,761
Pass-through programs from:				
University of North Carolina – Chapel Hill	93.073	5112603	—	21,171
Subtotal Birth Defects and Developmental Disabilities – Prevention and Surveillance (CFDA 93.073)			45,990	466,932
Family Smoking Prevention And Tobacco Control Act Regulatory Research	93.077	Direct	565,324	1,938,459
Pass-through programs from:				
Minneapolis Medical Research Foundation	93.077	15031	—	5,477
University of Minnesota	93.077	P006754501 SUB1-P3531588	—	217,791
University of Minnesota	93.077	P006754501	—	119,651
Yale University	93.077	GR100827 (CON-80001008)	—	20,781
Yale University	93.077	GR104117 (CON-80001488)	—	161,774
Subtotal Family Smoking Prevention And Tobacco Control Act Regulatory Research (CFDA 93.077)			565,324	2,463,933
Prevention of Disease, Disability, and Death by Infectious Diseases	93.084	Direct	600,003	2,292,473
Pass-through programs from:				
American College of Preventive Medicine	93.084	No Award Number	—	43,263
Harvard Pilgrim Health Care, Inc.	93.084	No Award Number	—	22,727
Harvard Pilgrim Health Care, Inc.	93.084	1-P2830457	—	(70)
Rush University Medical Center	93.084	15122904-Sub04	—	32,955
Washington State University	93.084	131314-G003768	—	129,556
Washington University in St. Louis	93.084	WU-17-157-MOD-5	—	139,325
Washington University in St. Louis	93.084	WU-17-158-MOD-2	—	(104)
Subtotal Prevention of Disease, Disability, and Death by Infectious Diseases (CFDA 93.084)			600,003	2,660,125
Food And Drug Administration Research	93.103	Direct	561,891	6,188,449
Pass-through programs from:				
Boston Children's Hospital	93.103	GENF0001538054	—	11,209
Georgia Institute of Technology	93.103	RK489-G1	—	97,607
Medical Device Innovation	93.103	6292-2018-DQ-001	—	39,449
University of North Carolina – Chapel Hill	93.103	No Award Number	—	4,849
University of North Carolina – Chapel Hill	93.103	5105974	—	1,331
University of North Carolina – Chapel Hill	93.103	5110575	—	78,380
University of North Carolina – Chapel Hill	93.103	5102612	—	24,298
University of North Carolina – Chapel Hill	93.103	5107545	—	(10,583)
University of North Carolina – Chapel Hill	93.103	5111643	—	105,255
Subtotal Food And Drug Administration Research (CFDA 93.103)			561,891	6,540,244

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Federal grantors/pass-through grantors/agencies or cluster title	Federal CFDA number	Direct award or pass-through entity identifying number	Passed through to subrecipients	Federal expenditures
Environmental Health	93.113	Direct	$ 240,738	6,129,692
Pass-through programs from:				
Athghin Biotechnology, Inc	93.113	No Award Number	—	33,139
Columbia University	93.113	3(GG013047)	—	26,602
East Carolina University	93.113	A19-0053-S001-A01	—	123,277
General Hospital Corporation (Mass)	93.113	229264 SUB #1-P2830726	—	38,372
General Hospital Corporation (Mass)	93.113	229264	—	123,718
Harvard University	93.113	112147-5072944	—	19,591
Michigan State University	93.113	RC109570DUKE	—	55,484
Northwestern University	93.113	60052569 DUKE	—	3,563
University of California – Riverside	93.113	S-000895	—	55,309
University of Colorado Health Sciences Center	93.113	FY17.625.003	—	66,871
University of Louisville	93.113	ULRF 11-0272D-03	—	(86)
University of Missouri	93.113	C00049410-1	—	(736)
University of Rochester	93.113	417160/URFAO:GR510699	—	143,475
Washington State University	93.113	124336 G003758 MNL	—	69,792
Water Resources Research Institute	93.113	2018-1110-01	—	3,268
Water Resources Research Institute	93.113	2015-3275-01	—	125,168
Water Resources Research Institute	93.113	2017-1825-01	—	104,621
Subtotal Environmental Health (CFDA 93.113)			240,738	7,121,120
Oral Diseases And Disorders Research	93.121	Direct	190,876	1,886,131
Pass-through programs from:				
Carolinas HealthCare System	93.121	13-014S2 (3000300177)	—	9,987
Carolinas Medical Center	93.121	13-014S2 (3000300177)	—	1,850
New York University	93.121	F8883-01	—	74,102
Regents of the University of Michigan	93.121	3004692463	—	287,082
University of North Carolina – Chapel Hill	93.121	5034276	—	8,799
University of North Carolina – Chapel Hill	93.121	5105381	—	29,435
University of North Carolina – Chapel Hill	93.121	5105428	—	20,659
University of North Carolina – Chapel Hill	93.121	5111991	—	11,281
University of North Carolina – Chapel Hill	93.121	5105655	—	3,457
Subtotal Oral Diseases And Disorders Research (CFDA 93.121)			190,876	2,332,783
Injury Prevention and Control Research and State and Community Based Programs				
Pass-through programs from:				
University of North Carolina – Chapel Hill	93.136	5112105	—	11,206
NIEHS Hazardous Waste Worker Health and Safety Training	93.142	Direct	114,822	346,277
NIEHS Superfund Hazardous Substances Basic Research and Education	93.143	Direct	160,207	2,776,109
Pass-through programs from:				
Dartmouth College	93.143	R1053	—	33,815
Subtotal NIEHS Superfund Hazardous Substances Basic Research and Education (CFDA 93.143)			160,207	2,809,924
HIV-Related Training and Technical Assistance				
Pass-through programs from:				
Vanderbilt University Medical Center	93.145	VUMC 56744	—	104,356
Human Genome Research	93.172	Direct	118,489	3,803,647
Pass-through programs from:				
EpiCypher, Inc.	93.172	No Award Number	—	23,829
University of Ibadan	93.172	5U4HG009826-02/DUKE-002	—	116,491
University of Ibadan	93.172	17/09/03/DU01	—	(427)
University of Iowa	93.172	W001026834	—	12,843
Vanderbilt University Medical Center	93.172	VUMC66349	—	181,709
Subtotal Human Genome Research (CFDA 93.172)			118,489	4,138,092
Research Related To Deafness And Communication Disorders	93.173	Direct	33,624	3,769,260
Pass-through programs from:				
Baebies, Inc	93.173	No Award Number	—	43,564
University of Kentucky	93.173	3200000349-16-110	—	77,524
University of Pennsylvania	93.173	567346	—	121,052
Subtotal Research Related To Deafness And Communication Disorders (CFDA 93.173)			33,624	4,011,400
Immunization Research, Demonstration, Public Information and Education Training and Clinical Skills Improvement Projects	93.185	Direct	39,359	136,674
Research and Training in Complementary and Integrative Health	93.213	Direct	1,010,467	5,895,411
Pass-through programs from:				
Mount Sinai Hospital	93.213	5UH3AT009149-04	—	469
Mount Sinai Hospital	93.213	R01 AT009273	—	475,566
Northwestern University	93.213	SP0050754-PROJ0014202	—	36,257
University of Minnesota	93.213	P005878805	—	(5,566)
Subtotal Research and Training in Complementary and Integrative Health (CFDA 93.213)			1,010,467	6,402,137
Research on Healthcare Costs, Quality and Outcomes	93.226	Direct	2,257,971	5,700,140
Pass-through programs from:				
Emory University	93.226	T688583	—	167,242
General Hospital Corporation (Mass)	93.226	229271	—	10,039
Society of Thoracic Surgeons	93.226	6066	—	1,178
Society of Thoracic Surgeons	93.226	R01HS022279	—	36,468
University of Colorado Health Sciences Center	93.226	FY17.688.004	—	33,258
Subtotal Research on Healthcare Costs, Quality and Outcomes (CFDA 93.226)			2,257,971	5,948,325
Mental Health Research Grants	93.242	Direct	1,865,822	13,968,856
Pass-through programs from:				
Brigham and Women's Hospital	93.242	118512	—	8,752
Columbia University	93.242	1(GG008104-04)	—	3,128
Columbia University	93.242	1(GG012020-01)	—	149,654
Columbia University	93.242	5(GG008104-05)	—	56,157
Johns Hopkins University Applied Physics Laboratory	93.242	2003026410	—	276,530
The George Washington University	93.242	17-M78	—	3,708
University of Chicago	93.242	FP067060	—	113,533
University of Nevada – Las Vegas	93.242	GR07160	—	39,624
University of North Carolina – Chapel Hill	93.242	5107961 SUB#2-P3520124	—	8,672
University of North Carolina – Chapel Hill	93.242	5115282	—	225,901
University of North Carolina – Chapel Hill	93.242	5105838	—	48,438
University of North Carolina – Chapel Hill	93.242	5102050	—	100,489
University of Pennsylvania	93.242	568541	—	51,376
University of Pennsylvania	93.242	568543	—	298,454
University of Pittsburgh	93.242	CNVA00060810 (131777-1)	—	98,026
University of South Carolina	93.242	16-3085	—	120,399
University of South Carolina	93.242	16-3129	—	69,383
University of South Carolina	93.242	17-3234	—	22,263
University of Southern California	93.242	104023123	—	51,937
University of Southern California	93.242	109855482	—	111,440
University of Vermont	93.242	34337SUB53038	—	7,423
Virginia Commonwealth University	93.242	PD303624-SC105364	—	23,753
Virtually Better, Inc.	93.242	No Award Number	—	5,765
Wake Forest University School of Medicine	93.242	102300-553261	—	42,009
Yale University	93.242	GR100253(CON-80000781)SUB1-2831143	515	818

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Federal grantors/pass-through grantors/agencies or cluster title	Federal CFDA number	Direct award or pass-through entity identifying number	Passed through to subrecipients	Federal expenditures
Yale University	93.242	GR100253(CON-80000781)	$ —	1,451
Yale University	93.242	GR102863(CON-80001418)	—	140,564
Yale University	93.242	GR100249(CON-80000777)	—	556,393
Yale University	93.242	GR102863(CON-80001418)SUB1-P2832045	6,067	9,118
Subtotal Mental Health Research Grants (CFDA 93.242)			1,872,404	16,614,014
Substance Abuse and Mental Health Services Projects of Regional and National Significance	93.243	Direct	264,599	475,108
Pass-through programs from:				
University of California – Los Angeles	93.243	2000 G UG238	—	280,854
University of California – Los Angeles	93.243	2000GUC816	—	2,753,227
University of California – Los Angeles	93.243	2000GUC816 SUB #1-P3531527	—	162,432
University of California – Los Angeles	93.243	2000GUC816 SUB #1-P3531742	—	389,236
Subtotal Substance Abuse and Mental Health Services Projects of Regional and National Significance (CFDA 93.243)			264,599	4,060,857
Health Systems Strengthening and HIV/AIDS Prevention, Care and Treatment under the President's Emergency Plan for AIDS Relief				
Pass-through programs from:				
University of Colorado Health Sciences Center	93.266	FY17.688.004	—	9,448
University of Nebraska Medical Center	93.266	34-5224-2005-001	—	8,797
Subtotal Research On Health Systems Strengthening and HIV/AIDS Prevention, Care and Treatment under the President's Emergency Plan for AIDS Relief (CFDA 93.266)			—	18,245
Alcohol Research Programs	93.273	Direct	187,355	2,342,926
Pass-through programs from:				
University of California – Riverside	93.273	S-001069	—	7,319
University of North Carolina – Wilmington	93.273	576920-17-01	—	25,574
University of Rochester	93.273	417121/UR FAO: GR510670	—	24,877
University of Texas Southwestern	93.273	GMO190909	—	42,302
Subtotal Alcohol Research Programs (CFDA 93.273)			187,355	2,442,998
Drug Abuse And Addiction Research Programs	93.279	Direct	834,024	13,692,286
Pass-through programs from:				
Pennsylvania State University	93.279	4950-DU-NIDA-05A1	—	34,542
The University of Texas at Dallas	93.279	1603594	—	13,735
University of California – San Francisco	93.279	10925SC	—	31,824
University of Cincinnati	93.279	011130-006	—	79,784
University of North Carolina – Chapel Hill	93.279	5110843	—	284,058
Subtotal Drug Abuse And Addiction Research Programs (CFDA 93.279)			834,024	14,136,229
Discovery And Applied Research For Technological Innovations To Improve Human Health	93.286	Direct	153,699	4,968,383
Pass-through programs from:				
Kitware Inc.	93.286	K001848-00-S07	—	4,563
Regents of the University of Michigan	93.286	SUBK00011083	—	123,898
Stanford University	93.286	61853886-116928	—	82,311
Stanford University	93.286	1-P2832260	—	2,743
University of California – Los Angeles	93.286	1430 G UA755	—	112,250
University of California – Los Angeles	93.286	1430 G UA755 SUB#1-P3531382	—	118,903
University of Texas Health Science Center at Houston	93.286	0012172B	—	231,930
Subtotal Discovery And Applied Research For Technological Innovations To Improve Human Health (CFDA 93.286)			153,699	5,644,981
Minority Health And Health Disparities Research	93.307	Direct	517,054	4,426,491
Pass-through programs from:				
Emory University	93.307	A090505	—	1,150
Emory University	93.307	T930880	—	1,515
Medical College of Wisconsin	93.307	No Award Number	—	56,684
University of North Carolina – Chapel Hill	93.307	5111098	—	18,393
University of Pennsylvania	93.307	575095	—	8,287
University of Washington	93.307	10079	—	12,064
Water Resources Research Institute	93.307	2017-1593-05	—	30,704
Subtotal Minority Health And Health Disparities Research (CFDA 93.307)			517,054	4,555,288
Trans-NIH Research Support	93.310	Direct	1,617,931	23,068,137
Pass-through programs from:				
Broad Institute	93.310	5000621-5500000965	—	16,561
Broad Institute	93.310	5000628-5500000965	—	388,620
University of California – San Diego	93.310	94839527	—	36,136
University of North Carolina – Chapel Hill	93.310	5108615	—	1,926
University of North Carolina – Chapel Hill	93.310	5111885	—	7,836
University of Rochester	93.310	417193G/UR FAO GR510712	—	35,744
Subtotal Trans-NIH Research Support (CFDA 93.310)			1,617,931	23,554,960
Rare Disorders: Research, Surveillance, Health Promotion, and Education	93.315	Direct	—	82,498
National Center For Advancing Translational Sciences	93.350	Direct	2,431,252	20,319,822
Pass-through programs from:				
EpiVax, Inc.	93.350	No Award Number	—	17,574
Regents of the University of Michigan	93.350	SUBK00008519	—	166,739
Research Triangle Institute International	93.350	3-312-0215481-52688L	—	97,334
University of North Carolina – Chapel Hill	93.350	5113330	—	9,395
University of Pittsburgh	93.350	0055353 (130910-7)	—	39,833
University of Pittsburgh	93.350	AWD00000243 (132627-23)	—	270
Subtotal National Center For Advancing Translational Sciences (CFDA 93.350)			2,431,252	20,650,967
Research Infrastructure Programs	93.351	Direct	171,935	1,213,363
Pass-through programs from:				
Ascent Bio-Nano Technologies, Inc.	93.351	1- P2832415	—	10,326
Ascent Bio-Nano Technologies, Inc.	93.351	No Award Number	—	2,239
General Hospital Corporation (Mass)	93.351	232921	—	34,922
Micro-Leads, Inc.	93.351	5R43OD024448-02	—	19,143
Ramona Optics	93.351	No Award Number	—	122,758
University of California – San Diego	93.351	108737809	—	91,306
Subtotal Research Infrastructure Programs (CFDA 93.351)			171,935	1,494,057
21st Century Cures Act – Beau Biden Cancer Moonshot	93.353	Direct	225,307	1,202,532
Pass-through programs from:				
Fred Hutchinson Cancer Research Center	93.353	918477	—	3,500
Subtotal 21st Century Cures Act – Beau Biden Cancer Moonshot (CFDA 93.353)			225,307	1,206,032
Nursing Research	93.361	Direct	479,197	1,528,146
Pass-through programs from:				
Rush University	93.361	12101001-SUB01-AMEND	—	182,190
University of California – Irvine	93.361	2018-3658	—	1,213
University of Colorado Health Sciences Center	93.361	FY18.105.014	—	184,597
University of North Carolina – Chapel Hill	93.361	5112550	—	13,858
University of North Carolina – Chapel Hill	93.361	5113683	—	474
University of North Carolina – Chapel Hill	93.361	5106243	—	87,930

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University of South Carolina	93.361	19-3792	$ —	60,383
University of Washington	93.361	UWSC11036	—	5,569
Subtotal Nursing Research (CFDA 93.361)			479,197	2,064,360
Sickle Cell Treatment Demonstration Program				
Pass-through programs from:				
Carolinas HealthCare System	93.365	3000301054 (A17-0142-S007)	—	63,122
Carolinas Medical Center	93.365	3000301054 (A17-0142-S007)	—	15,282
Subtotal Sickle Cell Treatment Demonstration Program (CFDA 93.365)			—	78,404
Cancer Cause and Prevention Research	93.393	Direct	971,175	4,245,066
Pass-through programs from:				
Arizona State University	93.393	ASUB00000170	—	150,785
Arizona State University	93.393	17-112	—	222,458
Baylor College of Medicine	93.393	101622276	—	(271)
City of Hope	93.393	53332.2004159.669301	—	117,122
Fred Hutchinson Cancer Research Center	93.393	932902	—	10,273
Fred Hutchinson Cancer Research Center	93.393	976615	—	8,084
Georgetown University	93.393	412642_GR412599-DU	—	97,926
Mayo Clinic	93.393	DUK-181294-05	—	(1,265)
MD Anderson Cancer Center	93.393	3435	—	50,350
Northwestern University	93.393	60037274DU	—	7,841
University of California – Berkeley	93.393	7336099	—	56,181
University of California – San Francisco	93.393	8924SC	—	63,976
University of North Carolina – Chapel Hill	93.393	5109379	—	131,489
University of North Carolina – Chapel Hill	93.393	5109508	—	4,155
University of Southern California	93.393	112842963	—	45,981
University of Utah	93.393	10044180-03	—	26,408
University of Virginia – Charlottesville	93.393	GB10416-154701	—	96,216
Wake Forest University School of Medicine	93.393	100730-114162	—	35,618
Water Resources Research Institute	93.393	2018-2962-01	—	5,220
Subtotal Cancer Cause and Prevention Research (CFDA 93.393)			971,175	5,373,613
Cancer Detection And Diagnosis Research	93.394	Direct	726,960	5,327,534
Pass-through programs from:				
Baylor College of Medicine	93.394	7000000435	—	17,421
Brigham and Women's Hospital	93.394	117717	—	31,343
City of Hope	93.394	52422.2001475.669303	—	112,560
Kaiser Permanente	93.394	OOS080185_DUKE	—	38,023
Lumicell Diagnostics	93.394	1	—	32,318
Mayo Clinic	93.394	DUK-187132-04	—	213
Memorial Sloan-Kettering Cancer Center	93.394	BD521993A	—	1,516
Memorial Sloan-Kettering Cancer Center	93.394	BD521993B	—	16,777
MicroElastic Ultrasound Systems, Inc.	93.394	No Award Number	—	17,972
Northeastern University	93.394	500596	—	121,557
Pancreatic Cancer Action Network	93.394	17-40-ADHI	—	52,206
St. Jude Children's Research Hospital	93.394	112134030-7831583	—	15,365
Stanford University	93.394	61843078-PAOPZ SUB	—	3,695
Stanford University	93.394	61843078-135410 PARENT	—	117,222
University of California – Davis	93.394	201700508-02	—	(2,929)
Subtotal Cancer Detection And Diagnosis Research (CFDA 93.394)			726,960	5,902,793
Cancer Treatment Research	93.395	Direct	2,332,052	13,988,350
Pass-through programs from:				
American College of Radiology Imaging Network	93.395	U10CA180820-01-DUKE1	—	10,270
Annias Immunotherapeutics, Inc.	93.395	No Award Number	—	264,572
Apogee Biotechnology Corporation	93.395	No Award Number	—	325,744
BioMimetix JV LLC	93.395	No Award Number	—	60,054
BioMimetix JV LLC	93.395	1-P3838737	—	67,501
BioMimetix JV LLC	93.395	2-P3838737	—	7,315
BioMimetix JV LLC	93.395	3-P3838737	—	14,159
Boston Children's Hospital	93.395	GENFD0001538280	—	1,313
Brigham and Women's Hospital	93.395	No Award Number	—	152,262
Brigham and Women's Hospital	93.395	110408	—	250,548
Children's Hospital of Philadelphia	93.395	No Award Number	—	35,867
Children's Hospital of Philadelphia	93.395	950008021717	—	13,097
Children's Hospital of Philadelphia	93.395	95008021717	—	7,518
Children's Hospital of Philadelphia	93.395	9500080216-XX	—	3,794
Children's Hospital of Philadelphia	93.395	FP00015221_SUB103_02	—	3,794
City of Hope	93.395	51901.2001469.669303	—	15,660
ECOG-ACRIN Medical Research Foundation	93.395	No Award Number	—	224,618
ECOG-ACRIN Medical Research Foundation	93.395	U10CA180820-04-DUKE2	—	11,547
Fox Chase Cancer Center	93.395	15134-01	—	244,395
Fred Hutchinson Cancer Research Center	93.395	218864-FFS7163 SUB #1-P2831100	—	3,746
General Hospital Corporation (Mass)	93.395	233094	—	83,371
General Hospital Corporation (Mass)	93.395	231928	—	156,744
Heuris, Inc.	93.395	No Award Number	—	43,819
Johns Hopkins University Applied Physics Laboratory	93.395	2002221748 PARENT	—	104,635
Mayo Clinic	93.395	DUU-194321	—	4,017
Mayo Clinic	93.395	DUK-194321-03	—	19,328
Mayo Clinic	93.395	DUN-188695-01	—	375,330
Mayo Clinic	93.395	No Award Number	—	209,666
Medical College of Wisconsin	93.395	No Award Number	—	111,240
Memorial Sloan-Kettering Cancer Center	93.395	BD518487C	—	2,144
Memorial Sloan-Kettering Cancer Center	93.395	BD518487D	—	24,014
Memorial Sloan-Kettering Cancer Center	93.395	BD517179C	—	1,427
Memorial Sloan-Kettering Cancer Center	93.395	BD517179D	—	15,701
Minnetronix, Inc	93.395	No Award Number	—	228,734
National Marrow Donor Program	93.395	1302	—	13,961
NRG Oncology Foundation	93.395	NCTN04-SECORD	—	7,000
Oregon Health & Science University	93.395	9009627_DUKE	—	21,163
Oregon Health & Science University	93.395	1013080_DUKE	—	24,496
Purdue University	93.395	11000609-009 MNL	—	62,928
St. Jude Children's Research Hospital	93.395	110068200-7818693	—	2,091
St. Jude Children's Research Hospital	93.395	111287240-7798277	—	1,509
St. Jude Children's Research Hospital	93.395	111287250-7859263	—	10,676
Temple University	93.395	256353-03-02	—	35,768
University of Florida	93.395	UFDSP00012036	—	421,046
University of North Carolina – Chapel Hill	93.395	5101331	—	125,234
University of North Carolina – Chapel Hill	93.395	5101331 SUB#1-P3531070	—	148,445
University of North Carolina – Chapel Hill	93.395	5101331 SUB#2-P3531070	—	16,176
University of North Carolina – Chapel Hill	93.395	5101331 SUB#3-P3531070	—	41,282
University of North Carolina – Chapel Hill	93.395	5101331 SUB#4-P3531070	—	164,219
University of North Carolina – Chapel Hill	93.395	5108075	—	65,609
University of North Carolina – Chapel Hill	93.395	5108076	—	77,775
University of North Carolina – Chapel Hill	93.395	5110555	—	45,054

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Federal grantors/pass-through grantors/agencies or cluster title	Federal CFDA number	Direct award or pass-through entity identifying number	Passed through to subrecipients	Federal expenditures
Vanderbilt University	93.395	UNIV60666	$ —	992
Vivor, LLC	93.395	No Award Number	—	212,823
Subtotal Cancer Treatment Research (CFDA 93.395)			2,332,052	18,584,541
Cancer Biology Research	93.396	Direct	144,787	6,084,770
Pass-through programs from:				
City of Hope	93.396	52421.2001474.669201	—	18,729
Cleveland Clinic Foundation	93.396	1128-SUB	—	179,201
Cleveland Clinic Foundation	93.396	929-SUB	—	72,803
Sage Bionetworks	93.396	CSBCDU2017	—	3,763
University of California – San Francisco	93.396	10765SC	—	44,936
University of Chicago	93.396	FP059292	—	2,214
University of Georgia	93.396	SUB00001716	—	12,012
University of Illinois at Chicago	93.396	17378-00	—	31,331
University of North Carolina – Chapel Hill	93.396	5104985	—	84,314
University of North Carolina – Chapel Hill	93.396	5104987	—	60,200
University of North Carolina – Chapel Hill	93.396	5104989	—	350,274
University of North Carolina – Chapel Hill	93.396	5103037	—	48,099
Subtotal Cancer Biology Research (CFDA 93.396)			144,787	6,992,646
Cancer Centers Support Grants	93.397	Direct	60,000	9,478,268
Pass-through programs from:				
Mayo Clinic	93.397	DUK-182363	—	13,332
Memorial Sloan-Kettering Cancer Center	93.397	BD520977B	—	6,096
University of California – San Francisco	93.397	9665SC	—	36,551
University of North Carolina – Chapel Hill	93.397	5109170	—	966
University of Texas Health Science Center at San Antonio	93.397	163624/163613	—	16,034
University of Texas Health Science Center at San Antonio	93.397	165363/41019	—	2,440
University of Texas Health Science Center at San Antonio	93.397	165372/41019	—	96,601
University of Texas Health Science Center at San Antonio	93.397	165377/41019	—	2,099
University of Texas Health Science Center at San Antonio	93.397	164265/163613	—	77,174
Subtotal Cancer Centers Support Grants (CFDA 93.397)			60,000	9,729,561
Cancer Research Manpower	93.398	Direct	—	2,533,284
Pass-through programs from:				
University of North Carolina – Chapel Hill	93.398	5108039 SUB #1-P3520129	—	4,757
University of North Carolina – Chapel Hill	93.398	5111061 SUB #1-P3520144	—	53,587
University of North Carolina – Chapel Hill	93.398	5111061 SUB #2-P3520144	—	53,235
Subtotal Cancer Research Manpower (CFDA 93.398)			—	2,644,863
Cancer Control				
Pass-through programs from:				
Kaiser Permanente	93.399	UH3NS088731/OOS100303-DUKE	—	4,604
Strengthening Public Health Systems and Services through National Partnerships to Improve and Protect the Nation's Health:				
Pass-through programs from:				
Association of University Centers on Disabilities	93.421	3-18-8813	—	147,358
NON-ACA/PPHF—Building Capacity of the Public Health System to Improve Population Health through National Nonprofit Organizations				
Pass-through programs from:				
American College of Preventive Medicine	93.424	No Award Number	—	64,611
ACL National Institute on Disability, Independent Living, and Rehabilitation Research	93.433	Direct	382,415	451,644
Pass-through programs from:				
Shepherd Center	93.433	SHEP-19-0001	—	169,785
Subtotal ACL National Institute on Disability, Independent Living, and Rehabilitation Research (CFDA 93.433)			382,415	621,429
Child Care and Development Block Grant				
Pass-through programs from:				
North Carolina Department of Health & Human Services	93.575	00037775	—	85,288
North Carolina Department of Health & Human Services	93.575	00037775 SUB#1-P3531739	18,522	20,374
North Carolina Department of Health & Human Services	93.575	00037775 SUB#3-P3531739	—	34,015
Subtotal Child Care and Development Block Grant (CFDA 93.575)			18,522	139,677
Family Violence Prevention and Services/Discretionary				
Pass-through programs from:				
Durham County Department of Social Services	93.592	1900000427	—	25,946
Subtotal Family Violence Prevention and Services/Discretionary (CFDA 93.592)			—	25,946
Medical Assistance Program				
Pass-through programs from:				
University of Louisville	93.778	ULRF 19-0064	—	58,440
Capacity Building Assistance (CBA) for High-Impact HIV Prevention	93.834	Direct	—	58,240
Cardiovascular Diseases Research	93.837	Direct	5,471,411	35,914,407
Pass-through programs from:				
Ascent Bio-Nano Technologies, Inc.	93.837	No Award Number	—	9,952
Ascent Bio-Nano Technologies, Inc.	93.837	1-P2832501	—	8,399
Boston University	93.837	4500003024	—	2,754
Brigham and Women's Hospital	93.837	119071	—	22,972
Brigham and Women's Hospital	93.837	No Award Number	—	43,761
Children's Hospital of Philadelphia	93.837	320126061 9-XX	—	311,492
Cincinnati Children's Hospital Medical Center	93.837	137829	—	7,526
Cincinnati Children's Hospital Medical Center	93.837	138511	—	3,848
Cleveland Clinic Lerner College of Medicine	93.837	1091-SUB	—	4,735
Columbia University	93.837	3(GG11036-03)	—	403
Emory University	93.837	A060817 PARENT	—	26,419
Emory University	93.837	T847791 PARENT	—	2,204
Emory University	93.837	T847791 SUB	—	1,070
Fred Hutchinson Cancer Research Center	93.837	917086	—	6,082
General Hospital Corporation (Mass)	93.837	224838	—	110,317
General Hospital Corporation (Mass)	93.837	No Award Number	—	32,822
General Hospital Corporation (Mass)	93.837	224838	—	18,657
Heart Imaging Technologies, LLC	93.837	No Award Number	—	190,953
Icahn School of Medicine at Mount Sinai	93.837	0255-1502-4605	—	2,535
Icahn School of Medicine at Mount Sinai	93.837	0255-8174-4609	—	8,167
Icahn School of Medicine at Mount Sinai	93.837	0255-A341-4605	—	72,483
Icahn School of Medicine at Mount Sinai	93.837	0255-A341-4609	—	42,665
ICON Clinical Research, Inc.	93.837	2222/0003	—	3,982
Johns Hopkins University Applied Physics Laboratory	93.837	2003249888	—	85,135
Kaiser Permanente	93.837	OOS030382-Duke	—	11,293
Mayo Clinic	93.837	DUK-249833	—	77,084
MD Anderson Cancer Center	93.837	No Award Number	—	(85)
New England Research Institutes, Inc.	93.837	No Award Number	—	56,805
New York University	93.837	19-A0-00-1002499	—	41,091
New York University	93.837	10-01037	—	45,395
New York University	93.837	10-01073	—	178,564
NYU Langone Medical Center	93.837	No Award Number	—	26,559
Ohio State University	93.837	60045503	—	208,935

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Society of Thoracic Surgeons	93.837	No Award Number	$ —	205,191
Society of Thoracic Surgeons	93.837	1(GG012956-02)	—	1,373
Symple Surgical, Inc.	93.837	No Award Number	—	69,930
Temple University	93.837	P0328226	—	42,499
University of Alabama at Birmingham	93.837	000503570-015A03 SUB#1-P3531614	—	29,072
University of Alabama at Birmingham	93.837	000503570-015A04 SUB#1-P3531872	—	43,925
University of Alabama at Birmingham	93.837	000512395-002	—	(3,323)
University of Alabama at Birmingham	93.837	000503570-015 A03	—	(1,148)
University of Alabama at Birmingham	93.837	000503570-015 A04	—	6,817
University of California – San Francisco	93.837	7737sc	—	764
University of North Carolina – Chapel Hill	93.837	5111703	—	70,422
University of North Carolina – Chapel Hill	93.837	5111703 SUB# 1-P3531830	—	4,976
University of North Carolina – Chapel Hill	93.837	5105461	—	46,717
University of North Carolina – Chapel Hill	93.837	5102220	—	82,805
University of Pennsylvania	93.837	565725	—	21,015
University of Pennsylvania	93.837	572516	—	336,351
University of Pittsburgh	93.837	0041597 (130470-5)	—	16,762
University of Pittsburgh	93.837	0053396 (129213-2)	—	14,015
University of South Carolina	93.837	19-3839	—	4,230
University of Virginia – Charlottesville	93.837	GB10643. PO	—	71,168
Vanderbilt University Medical Center	93.837	VUMC 66072	—	47,259
Vanderbilt University Medical Center	93.837	VUMC 67228	—	30,294
Vigilant Medical	93.837	No Award Number	—	52,228
Water Resources Research Institute	93.837	2005-1013-01	—	50,071
Water Resources Research Institute	93.837	2015-2973-01	—	10,361
Yale University	93.837	GR104908(CON-80001567)	—	24,312
Yale University	93.837	GR105657(CON-80001696)	—	1,084,993
Subtotal Cardiovascular Diseases Research (CFDA 93.837)			5,471,411	39,942,460
Lung Diseases Research	93.838	Direct	1,503,118	5,694,308
Pass-through programs from:				
American Lung Association	93.838	No Award Number	—	9,921
Ascent Bio-Nano Technologies, Inc.	93.838	No Award Number	—	322,153
COPD Foundation Inc	93.838	001-AMEND1	—	14,504
COPD Foundation Inc	93.838	002	—	27,242
National Jewish Health	93.838	20052711	—	79,929
Path Bioanalytics	93.838	No Award Number	—	6,237
Research Triangle Institute International	93.838	215920	—	3,530
Stanford University	93.838	61954168-50959	—	256,777
The George Washington University	93.838	No Award Number	—	26,084
The George Washington University	93.838	2-AF-31	—	4,059
University of Florida	93.838	UFDSP00010280	—	(3)
University of North Carolina – Chapel Hill	93.838	5111678	—	151,578
University of North Carolina – Chapel Hill	93.838	5101141	—	16,594
University of Pennsylvania	93.838	565138	—	5,817
University of Pennsylvania	93.838	574470	—	2,053
University of Pennsylvania	93.838	No Award Number	—	2,740
University of Pennsylvania	93.838	574470	—	64,666
University of Vermont	93.838	31339SUB52222	—	57,172
Vanderbilt University Medical Center	93.838	VUMC 63242	—	(17,636)
Vanderbilt University Medical Center	93.838	VUMC 64504	—	17,784
Vanderbilt University Medical Center	93.838	VUMC 63245	—	(1,205)
Weill Medical College of Cornell University	93.838	16121993-2E	—	(1,479)
Weill Medical College of Cornell University	93.838	183434-2E	—	100,298
Weill Medical College of Cornell University	93.838	180007-01	—	(88,157)
Weill Medical College of Cornell University	93.838	183693-01	—	432,883
Subtotal Lung Diseases Research (CFDA 93.838)			1,503,118	7,187,849
Blood Diseases And Resources Research	93.839	Direct	183,184	5,746,347
Pass-through programs from:				
Case Western Reserve University	93.839	RES513522	—	20,678
Gateway Bio, Inc.	93.839	No Award Number	—	41,579
Mayo Clinic	93.839	DUK-196262-07	—	222,715
MD Anderson Cancer Center	93.839	3001186774	—	127,171
Memorial Sloan-Kettering Cancer Center	93.839	BD522189B	—	3,004
National Marrow Donor Program	93.839	No Award Number	—	5,360
Research Triangle Institute International	93.839	215920	—	42,923
Research Triangle Institute International	93.839	No Award Number	—	27,040
Rutgers, The State University of New Jersey	93.839	966	—	1,564
Rutgers, The State University of New Jersey	93.839	462	—	16,661
Rutgers, The State University of New Jersey	93.839	SUB0167	—	(1,044)
University of North Carolina – Chapel Hill	93.839	5101982	—	20,388
University of North Carolina – Chapel Hill	93.839	5103752	—	(2,570)
Wasatch Photonics, Inc.	93.839	No Award Number	—	11,027
Wasatch Photonics, Inc.	93.839	1-P2831624	—	82,655
Washington University in St. Louis	93.839	WU-15-412	—	5,929
Subtotal Blood Diseases And Resources Research (CFDA 93.839)			183,184	6,371,427
Translation and Implementation Science Research for Heart, Lung, Blood Diseases, and Sleep Disorders	93.840	Direct	—	462,314
Pass-through programs from:				
Case Western Reserve University	93.840	RES513343	—	265,295
Case Western Reserve University	93.840	RES513945	—	71,232
Case Western Reserve University	93.840	RES514483	—	14,053
Subtotal Translation and Implementation Science Research for Heart, Lung, Blood Diseases, and Sleep Disorders (CFDA 93.840)			—	812,894
Arthritis, Musculoskeletal And Skin Diseases Research	93.846	Direct	1,221,159	8,257,182
Pass-through programs from:				
Children's Hospital of Philadelphia	93.846	3210940919-XX SUB #1-P2832074	1,008	1,613
Children's Hospital of Philadelphia	93.846	3210940919-XX SUB #2-P2832074	982	1,571
Children's Hospital of Philadelphia	93.846	3210940919-XX SUB #3-P2832074	1,581	2,530
Children's Hospital of Philadelphia	93.846	3210940919-XX SUB #4-P2832074	41,634	56,634
Children's Hospital of Philadelphia	93.846	3210940919-XX SUB #6-P2832074	14,796	23,673
Children's Hospital of Philadelphia	93.846	3210940919-XX SUB #7-P2832074	2,593	4,149
Children's Hospital of Philadelphia	93.846	3210940919-XX SUB #8-P2832074	3,694	5,911
Children's Hospital of Philadelphia	93.846	3210940919-XX	—	72,913
FirstString Research, Inc.	93.846	No Award Number	—	51,808
New York University	93.846	15-A0-00-005193	—	5,053
Oregon Health & Science University	93.846	1011396_DUKE	—	77,926
Scripps Research Institute	93.846	5-53662	—	75,621
University of North Carolina – Chapel Hill	93.846	5103365	—	(1,054)
University of North Carolina – Chapel Hill	93.846	5103369	—	(114)
University of Pennsylvania	93.846	572644	—	528
University of Pennsylvania	93.846	575155	—	2,557
Virginia Commonwealth University	93.846	PT107007-SC103388	—	4,702
Subtotal Arthritis, Musculoskeletal And Skin Diseases Research (CFDA 93.846)			1,287,447	8,643,203

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Diabetes, Digestive, And Kidney Diseases Extramural Research	93.847	Direct	$ 1,290,394	21,438,201
Pass-through programs from:				
Augusta University	93.847	32307-33	—	98,016
Baylor College of Medicine	93.847	No Award Number	—	159,620
Baylor College of Medicine	93.847	7000000828	—	59,645
Baylor College of Medicine	93.847	No Award Number	—	1,544
Buck Institute for Research on Aging	93.847	SA14001-DU	—	193,033
Carnegie Institution of Washington	93.847	5-10491-01	—	44,692
Carnegie Institution of Washington	93.847	5-10868-01	—	282,208
Case Western Reserve University	93.847	RES511821	—	18,228
Cleveland Clinic Lerner College of Medicine	93.847	894-SUB	—	1,218
Columbia University	93.847	1(GG010947-01)	—	163,591
East Carolina University	93.847	A17-0007-S001	—	46,029
Icahn School of Medicine at Mount Sinai	93.847	0255-2981-4609	—	16,114
Johns Hopkins University Applied Physics Laboratory	93.847	2002880953	—	6
Northwestern University	93.847	60043451DU	—	(3)
Northwestern University	93.847	60036899DU	—	12,344
Northwestern University	93.847	60037997 DU	—	37,626
Northwestern University	93.847	60050519 DUKE	—	196,075
Regents of the University of Michigan	93.847	SUBK00010439	—	9,416
Regents of the University of Michigan	93.847	No Award Number	—	56,452
Regents of the University of Michigan	93.847	SUBK00009156	—	10,930
Regents of the University of Michigan	93.847	SUBK00010438	—	25,296
Regents of the University of Michigan	93.847	SUBK00010846	—	7,027
Research Institute at Nationwide Children's Hospital	93.847	700043-0519-00	—	4,220
Research Institute at Nationwide Children's Hospital	93.847	700043-0518-00	—	1,804
Temple University	93.847	261778 DUKE	—	53,480
The Board of Regents of the University of Wisconsin System	93.847	851K410	—	70,299
The George Washington University	93.847	S-GRD1718-LL8	—	57,933
The George Washington University	93.847	S-GRD1819-LL8	—	534,789
Tufts Medical Center	93.847	5008748-SERV	—	20,485
Tufts Medical Center	93.847	5015642-SERV	—	122,963
Tufts Medical Center	93.847	5012481-SERV	—	(14,605)
University of Alabama at Birmingham	93.847	000518101-004	—	5,621
University of Alabama at Birmingham	93.847	000509533-007	—	10,118
University of Arizona	93.847	421037	—	11,125
University of Colorado Health Sciences Center	93.847	FY17.269.002	—	7,726
University of Ghana	93.847	5U54DK1169139-08	—	18,479
University of Ghana	93.847	9U54DK1169139-06	—	4,703
University of Illinois at Chicago	93.847	16420-03	—	494,406
University of Maryland, Baltimore County	93.847	1300318A	—	35,678
University of North Carolina – Chapel Hill	93.847	5111389	—	94,560
University of North Carolina – Chapel Hill	93.847	5104771 MINI #1-C3530862	—	17,530
University of North Carolina – Chapel Hill	93.847	5104771 MINI #4-C3530862	—	81,694
University of North Carolina – Chapel Hill	93.847	5107939	—	42,987
University of North Carolina – Chapel Hill	93.847	5108134	—	13,958
University of North Carolina – Chapel Hill	93.847	5111319	—	44,714
University of North Carolina – Chapel Hill	93.847	5113987	—	2,475
University of Pennsylvania	93.847	572695	—	88,170
University of Pennsylvania	93.847	575038	—	55,651
University of Pittsburgh	93.847	CNVA00049860(127333-1)	—	34,278
University of Pittsburgh	93.847	9011205(125433-2)	—	65,133
University of Utah	93.847	10042896-01	—	9,846
University of Washington	93.847	UWSC10873	—	25,296
University of Washington	93.847	UWSC9627	—	31,672
Vanderbilt University Medical Center	93.847	VUMC56948	—	8,373
Wake Forest University Health Sciences	93.847	WFUHS 119549	—	7,811
Washington University in St. Louis	93.847	WU-15-197-MOD-4	—	182,753
Washington University in St. Louis	93.847	WU-15-198-MOD-5	—	54,042
Subtotal Diabetes, Digestive, And Kidney Diseases Extramural Research (CFDA 93.847)			1,290,394	25,177,475
Extramural Research Programs in the Neurosciences And Neurological Disorders	93.853	Direct	3,256,448	26,217,112
Pass-through programs from:				
AegisCN LLC	93.853	No Award Number	—	70,638
Albert Einstein College of Medicine	93.853	311302 SUB #1-P2831975	—	3,943
Albert Einstein College of Medicine	93.853	311302 SUB #2-P2831975	14,056	22,350
Albert Einstein College of Medicine	93.853	311302	—	216,784
Albert Einstein College of Medicine	93.853	311436	—	42,498
Albert Einstein College of Medicine	93.853	311509	—	15,153
Allen Institute for Brain Science	93.853	2014-0567	—	135,056
Beth Israel Deaconess Medical Center	93.853	1029142	—	1,938
BioAxone Biosciences, Inc.	93.853	No Award Number	—	47,383
Columbia University	93.853	2(GG010209)	—	112,236
General Hospital Corporation (Mass)	93.853	226396	—	111,629
Johns Hopkins University Applied Physics Laboratory	93.853	2003044420	—	11,718
Krieger Institute	93.853	5K12NS098482-02	—	136,160
Mayo Clinic	93.853	DUK-224063-03	—	5,021
Micro-Leads, Inc.	93.853	1NS102067-02-DUKE2067	—	70,883
Northwestern University	93.853	60043599 DU	—	179,794
Platinum Group Coatings, LLC	93.853	No Award Number	—	28,641
Regents of the University of Michigan	93.853	SUBK9082CSPR-001	—	25,080
ReveraGen BioPharma	93.853	No Award Number	—	73,145
Salk Institute	93.853	No Award Number	—	95,882
University of Alabama at Birmingham	93.853	00051297-013	—	2,277
University of Alabama at Birmingham	93.853	000519299-SP007-001	—	295,001
University of California – San Diego	93.853	110747421	—	232,127
University of California – San Francisco	93.853	8410SC	—	15,657
University of California – San Francisco	93.853	8410SC PARENT	—	99,255
University of California – San Francisco	93.853	8410SC SUB	—	77,251
University of California – San Francisco	93.853	10202SC	—	148
University of Chicago	93.853	FP066541	—	164,625
University of Cincinnati	93.853	011078-007	—	24,831
University of Cincinnati	93.853	010333-004	—	60,000
University of Cincinnati	93.853	010333-007	—	19,029
University of Miami	93.853	SPC-001084	—	11,373
University of Minnesota	93.853	N004689102	—	59,213
University of Minnesota	93.853	N004631401	—	44,182
University of North Carolina – Chapel Hill	93.853	5101706	—	21,646
University of North Carolina – Chapel Hill	93.853	5101420	—	90,042
University of Pennsylvania	93.853	570593	—	184,867
Washington University in St. Louis	93.853	WU-16-158-MOD-4	—	147,216
Subtotal Extramural Research Programs in the Neurosciences And Neurological Disorders (CFDA 93.853)			3,270,504	29,171,784
Allergy and Infectious Diseases Research	93.855	Direct	26,770,811	104,845,285
Pass-through programs from:				
Affinergy	93.855	No Award Number	—	5,194
Albert Einstein College of Medicine	93.855	31100A	—	205,137

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Amplyx Pharmaceuticals, Inc.	93.855	No Award Number	$ —	160,416
Benaroya Research Institute at Virginia Mason	93.855	FY19ITN279 SUB #1-P2832703	—	78,248
Benaroya Research Institute at Virginia Mason	93.855	FY19ITN279 SUB #2-P2832703	—	221,125
Benaroya Research Institute at Virginia Mason	93.855	FY18ITN263	—	18,676
Benaroya Research Institute at Virginia Mason	93.855	FY19ITN263	—	33,684
Benaroya Research Institute at Virginia Mason	93.855	FY18ITN042	—	68,647
Benaroya Research Institute at Virginia Mason	93.855	FY19ITN042	—	63,774
Benaroya Research Institute at Virginia Mason	93.855	FY18ITN081	—	(10,413)
Benaroya Research Institute at Virginia Mason	93.855	FY18ITN122	—	10,290
Benaroya Research Institute at Virginia Mason	93.855	FY18ITN283	—	40,451
Benaroya Research Institute at Virginia Mason	93.855	FY18ITN299	—	43,189
Benaroya Research Institute at Virginia Mason	93.855	FY19ITN122	—	5,399
Benaroya Research Institute at Virginia Mason	93.855	FY19ITN283	—	18,993
Benaroya Research Institute at Virginia Mason	93.855	FY19ITN302	—	4,838
Benaroya Research Institute at Virginia Mason	93.855	FY19ITN316	—	64,191
Benaroya Research Institute at Virginia Mason	93.855	FY18ITN279	—	9,347
Benaroya Research Institute at Virginia Mason	93.855	FY19ITN279	—	20,630
Benaroya Research Institute at Virginia Mason	93.855	FY19ITN309	—	95,145
Benaroya Research Institute at Virginia Mason	93.855	FY18ITN263 SUB#1-P2831715	—	4,114
Benaroya Research Institute at Virginia Mason	93.855	FY19ITN263 SUB#1-P2832630	—	3,214
Boston Children's Hospital	93.855	GENFD0001320533	—	22,579
Boston Children's Hospital	93.855	GENFD0001501263	—	315,822
Boston Children's Hospital	93.855	GENFD0001501264	—	627,813
Boston Children's Hospital	93.855	GENFD0001501265	—	344,225
Boston Children's Hospital	93.855	GENFD0001659740	—	6,753
Boston University	93.855	4500003061	—	141,016
Boston University	93.855	4500002928	—	138,130
Boston University	93.855	4500002929	—	143,956
Boston University	93.855	4500002643	—	315,476
Broad Institute	93.855	5001620-5500001276	—	9,397
Children's Hospital of Philadelphia	93.855	1-P3834877	2,980	4,679
Children's Hospital of Philadelphia	93.855	FP12542_A1_SUB01_08	—	163,865
Columbia University	93.855	09(GG011896-49) SUB#1-P2832065	—	54,080
Columbia University	93.855	1(GG011896-34) SUB #1-P2831180	—	(2,161)
Columbia University	93.855	1- P2831415	—	(19,443)
Columbia University	93.855	1(GG011896-34)	—	4,045
Columbia University	93.855	09(GG011896-34)	—	3,707
Columbia University	93.855	09(GG011896-49)	—	66,809
Columbia University	93.855	23(GG011896-49)	—	338,012
Columbia University	93.855	4(GG011896-34)	—	2,767
Columbia University	93.855	5(GG011896-34)	—	9,949
Element Genomics, Inc.	93.855	No Award Number	—	65,920
Emory University	93.855	T854547	—	1,417
Emory University	93.855	T854557	—	(41,143)
Emory University	93.855	T683925	—	(4,107)
Fox Chase Cancer Center	93.855	11097-05	—	358,372
Fred Hutchinson Cancer Research Center	93.855	929246	—	224,209
Fred Hutchinson Cancer Research Center	93.855	0000929246 SUB #1-P2831524	—	38,512
Fred Hutchinson Cancer Research Center	93.855	0000929246 SUB #2-P2831524	—	189,762
Fred Hutchinson Cancer Research Center	93.855	0000929246 SUB #3-P2831524	—	44,219
Fred Hutchinson Cancer Research Center	93.855	0000927244 SUB#1-P2831544	—	4,911
Fred Hutchinson Cancer Research Center	93.855	0000927244 SUB#2-P2831545	—	15,307
Fred Hutchinson Cancer Research Center	93.855	0000927244 SUB#3-P2831546	—	11,175
Fred Hutchinson Cancer Research Center	93.855	0000965178 MINI #1-C2832362	—	179,610
Fred Hutchinson Cancer Research Center	93.855	0000965178 MINI #2-C2832362	—	74,450
Fred Hutchinson Cancer Research Center	93.855	0000965178 MINI #3-C2832362	—	111,010
Fred Hutchinson Cancer Research Center	93.855	0000965467 MINI #1-C2832367	—	44,982
Fred Hutchinson Cancer Research Center	93.855	0000965467 MINI #2-C2832367	—	103,709
Fred Hutchinson Cancer Research Center	93.855	0000965467 MINI #3-C2832367	—	20,232
Fred Hutchinson Cancer Research Center	93.855	958779	—	25,175
Fred Hutchinson Cancer Research Center	93.855	962460	—	4,227
Fred Hutchinson Cancer Research Center	93.855	968903	—	112,764
Fred Hutchinson Cancer Research Center	93.855	975770	—	2,523
Fred Hutchinson Cancer Research Center	93.855	984428	—	10,517
Fred Hutchinson Cancer Research Center	93.855	986191	—	9,069
Fred Hutchinson Cancer Research Center	93.855	989844	—	39,886
Fred Hutchinson Cancer Research Center	93.855	927244	—	54,121
Fred Hutchinson Cancer Research Center	93.855	1-P2832379	—	121,915
Fred Hutchinson Cancer Research Center	93.855	925565	—	571,334
Fred Hutchinson Cancer Research Center	93.855	933144	—	63,688
Fred Hutchinson Cancer Research Center	93.855	0000933144 SUB#1-P2831542	—	14,873
Fred Hutchinson Cancer Research Center	93.855	0000933144 SUB#3-P2831542	—	27,017
Fred Hutchinson Cancer Research Center	93.855	0000933144 SUB#4-P2831542	—	8,599
Fred Hutchinson Cancer Research Center	93.855	947758	—	92,357
Fred Hutchinson Cancer Research Center	93.855	955788	—	11,179
Fred Hutchinson Cancer Research Center	93.855	0000955788 SUB #1-P2831536	—	5,813
Fred Hutchinson Cancer Research Center	93.855	0000955788 SUB #2-P2831536	—	5,902
Fred Hutchinson Cancer Research Center	93.855	965178	—	515,418
Fred Hutchinson Cancer Research Center	93.855	965389	—	394,026
Fred Hutchinson Cancer Research Center	93.855	0000965389 SUB #1-P2832371	—	53,834
Fred Hutchinson Cancer Research Center	93.855	0000965389 SUB #2-P2832371	—	134,885
Fred Hutchinson Cancer Research Center	93.855	0000965389 SUB #3-P2832371	—	1,524
Fred Hutchinson Cancer Research Center	93.855	965467	—	225,152
Fred Hutchinson Cancer Research Center	93.855	965569	—	152,645
Fred Hutchinson Cancer Research Center	93.855	0000965569 SUB #1-P2832384	—	67,136
Fred Hutchinson Cancer Research Center	93.855	0000965569 SUB #2-P2832384	—	86,269
Fred Hutchinson Cancer Research Center	93.855	0000965569 SUB #3-P2832384	—	52,667
Fred Hutchinson Cancer Research Center	93.855	966517	—	81,720
Fred Hutchinson Cancer Research Center	93.855	975374	—	15,404
Fred Hutchinson Cancer Research Center	93.855	0000947464 SUB#1-P2831960	—	117,203
Fundacao Manhica	93.855	No Award Number	—	7,057
General Hospital Corporation (Mass)	93.855	232561	—	1,662
General Hospital Corporation (Mass)	93.855	227111	—	3,670
Georgia State University	93.855	SP00013630-02	—	15,588
Harbor-UCLA Research and Education	93.855	30685-DUKE SUB#1-P2831848	—	100,471
Harbor-UCLA Research and Education	93.855	30685-DUKE	—	557,716
Harvard University	93.855	116543.508	—	179,812
Harvard University	93.855	152623.5110539.0517	—	118,901
Henry M. Jackson Foundation	93.855	2493	—	254,533
Henry M. Jackson Foundation	93.855	4115	—	55,167
Henry M. Jackson Foundation	93.855	3977	—	205,701
Icahn School of Medicine at Mount Sinai	93.855	0255-B011-4609	—	86,981
Icahn School of Medicine at Mount Sinai	93.855	0255-1369-4609	—	60,757
Institute for Clinical Research, Inc.	93.855	M59-DU-074-1101-3 SUB #2-P3833111	—	11,543
Institute for Clinical Research, Inc.	93.855	M59-DU-074-1101-3 SUB #3-P3833111	—	(1,464)
Institute for Clinical Research, Inc.	93.855	M59-DU-074-1101-3	—	5,292
Institute for Clinical Research, Inc.	93.855	M59-DU-074-1101-3 T.O. #6	—	4,697
Johns Hopkins University Applied Physics Laboratory	93.855	LDR 06 MOD 07	—	5,567
Johns Hopkins University Applied Physics Laboratory	93.855	PTCL 10	—	5,870

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Johns Hopkins University Applied Physics Laboratory	93.855	LDR 01 MOD 06	$ —	38,221
Johns Hopkins University Applied Physics Laboratory	93.855	LDR 01 MOD 07	—	54,498
Johns Hopkins University Applied Physics Laboratory	93.855	LDR 02 MOD 04	—	15,305
Johns Hopkins University Applied Physics Laboratory	93.855	LDR 02 MOD 07	—	21,903
Johns Hopkins University Applied Physics Laboratory	93.855	LDR 06 MOD 03	—	3,976
Johns Hopkins University Applied Physics Laboratory	93.855	LDR 07	—	8,725
Johns Hopkins University Applied Physics Laboratory	93.855	LDR 07 MOD 04	—	10,907
Johns Hopkins University Applied Physics Laboratory	93.855	LDR 08	—	8,047
Johns Hopkins University Applied Physics Laboratory	93.855	LDR 08 MOD 03	—	7,205
Johns Hopkins University Applied Physics Laboratory	93.855	No Award Number	—	180,756
Linnaeus Bioscience	93.855	No Award Number	—	9,052
MacroGenics, Inc.	93.855	No Award Number	—	33,339
Minnetronix, Inc	93.855	No Award Number	—	368,416
Molecular Express, Inc.	93.855	No Award Number	—	(3,217)
National Jewish Health	93.855	20098205	—	4,747
Northwestern University	93.855	60043860 DU	—	174,271
Rutgers, The State University of New Jersey	93.855	394	—	15,338
San Diego Biomedical Research Institute	93.855	FY2018-VERKOCZY-DUKE	—	89,617
Scripps Research Institute	93.855	5-53520	—	11,924
Scripps Research Institute	93.855	5-53739	—	1,338,612
Stanford University	93.855	No Award Number	—	19,132
Stanford University	93.855	61731994-128772	—	48,456
The Board of Regents of the University of Wisconsin System	93.855	600K714	—	(1,308)
The Board of Regents of the University of Wisconsin System	93.855	768K375	—	57,160
The Board of Regents of the University of Wisconsin System	93.855	844K734	—	68,574
Tulane University	93.855	TUL-HSC-555901-17/18	—	17,970
University of California – Los Angeles	93.855	1560 G WB243	—	19,317
University of California – Los Angeles	93.855	1650 G UA193	—	133,358
University of California – San Francisco	93.855	10148SC	—	28,542
University of California – San Francisco	93.855	8461SC	—	(1,391)
University of California – San Francisco	93.855	8477SC MNL	—	8,789
University of California – San Francisco	93.855	9273SC	—	23,821
University of California – San Francisco	93.855	9889SC	—	41,907
University of Illinois at Urbana-Champaign	93.855	091668-17057	—	107,936
University of Maryland, Baltimore County	93.855	101155B SUB #1-P3531557	—	23,299
University of Maryland, Baltimore County	93.855	101155B	—	161,025
University of Maryland, Baltimore County	93.855	101155B SUB#1-P3531748	—	42,842
University of Minnesota	93.855	N004761503	—	53,023
University of North Carolina – Chapel Hill	93.855	5113016	—	16,829
University of North Carolina – Chapel Hill	93.855	5113809	—	4,449
University of North Carolina – Chapel Hill	93.855	5113288	—	3,906
University of North Carolina – Chapel Hill	93.855	5034591	—	99,415
University of North Carolina – Chapel Hill	93.855	5105560	—	1,795
University of North Carolina – Chapel Hill	93.855	5105561 SUB #1-P3531496	—	5,983
University of North Carolina – Chapel Hill	93.855	5105561 SUB #1-P3531688	—	256,934
University of North Carolina – Chapel Hill	93.855	5105561 SUB #2-P3531688	—	91,393
University of North Carolina – Chapel Hill	93.855	5105561 SUB #4-P3531496	—	(1,561)
University of North Carolina – Chapel Hill	93.855	5111562 SUB #1 P3531936	—	1,322
University of North Carolina – Chapel Hill	93.855	5111562 SUB #2 P3531936	—	240
University of North Carolina – Chapel Hill	93.855	5114417	—	570
University of North Carolina – Chapel Hill	93.855	5111750	—	79,533
University of North Carolina – Chapel Hill	93.855	5111568	—	199,901
University of North Carolina – Chapel Hill	93.855	5111641	—	379,381
University of North Carolina – Chapel Hill	93.855	5050079	—	35,509
University of North Carolina – Chapel Hill	93.855	5104899	—	(198)
University of North Carolina – Chapel Hill	93.855	5105561	—	465,213
University of North Carolina – Chapel Hill	93.855	5105562	—	192
University of North Carolina – Chapel Hill	93.855	5110151	—	22,420
University of North Carolina – Chapel Hill	93.855	5111562	—	11,436
University of North Carolina – Chapel Hill	93.855	5111563	—	117,234
University of Pennsylvania	93.855	568080	—	28,762
University of Pennsylvania	93.855	571311 SUB #1-P2830996	—	288,759
University of Pennsylvania	93.855	571311 SUB #1-P2831119	—	269,962
University of Pennsylvania	93.855	571311 SUB #2 P2831119	—	2,440
University of Pennsylvania	93.855	571311 SUB #2-P2830996	—	177,445
University of Pennsylvania	93.855	571311	—	498,766
University of Pittsburgh	93.855	CNVA00060724 (13127	—	33,253
University of Wyoming	93.855	1003306A-Duke	—	92,873
Virginia Commonwealth University	93.855	FP00002076_SA003	—	25,203
Weill Medical College of Cornell University	93.855	16121967	—	31,538
Weill Medical College of Cornell University	93.855	184032	—	84,751
Wistar Institute of Anatomy and Biology	93.855	25132-05-374	—	51,949
Wistar Institute of Anatomy and Biology	93.855	25133-05-374	—	208,752
Wistar Institute of Anatomy and Biology	93.855	25133-05-374 SUB #1-2831751	—	79,293
Wistar Institute of Anatomy and Biology	93.855	25133-05-374 SUB #2-2831751	—	104,149
Wistar Institute of Anatomy and Biology	93.855	25133-05-374 SUB #3-2831751	—	61,624
Wistar Institute of Anatomy and Biology	93.855	25134-05-374	—	98,188
Wistar Institute of Anatomy and Biology	93.855	25134-05-374 SUB #1-P2832664	—	34,789
Wistar Institute of Anatomy and Biology	93.855	25134-05-374 SUB #2-P2832664	—	36,856
Wistar Institute of Anatomy and Biology	93.855	25134-05-374 SUB #3-P2832664	—	58,819
Subtotal Allergy and Infectious Diseases Research (CFDA 93.855)			26,773,791	122,206,121
Microbiology and Infectious Diseases Research	93.856	Direct	—	530,681
Biomedical Research And Research Training	93.859	Direct	471,825	27,609,710
Pass-through programs from:				
Ascent Bio-Nano Technologies, Inc.	93.859	2-P2831699	—	37,063
Ascent Bio-Nano Technologies, Inc.	93.859	1-P2831699	—	48,414
Ascent Bio-Nano Technologies, Inc.	93.859	No Award Number	—	114,470
Cell Microsystems, Inc.	93.859	No Award Number	—	(365)
Celldom	93.859	1- P2832378	—	83,254
Celldom	93.859	No Award Number	—	61,673
Deep Blue Medical Advances Inc	93.859	No Award Number	—	(1,659)
Emory University	93.859	T481598	—	36,869
EpiCypher, Inc.	93.859	No Award Number	—	60,936
Mayo Clinic	93.859	DUK-216993-03	—	21,887
Mayo Clinic	93.859	DUK-216993-05	—	6,612
Medical University of South Carolina	93.859	MUSC16-006	—	95,225
Michigan State University	93.859	RC106661Duke	—	34,660
Northeastern University	93.859	500617-78051	—	55,010
Regents of the University of Michigan	93.859	3004686663	—	180,343
Regents of the University of Michigan	93.859	SUBK00009505	—	132,384
Regents of the University of Michigan	93.859	3004686662	—	186,384
Rutgers, The State University of New Jersey	93.859	221	—	72,884
Stanford University	93.859	60592257-25996 SUB #2-P3836269	—	105,022
Stanford University	93.859	No Award Number	—	34,898
The Board of Regents of the University of Wisconsin System	93.859	704K561	—	11,012
University of California – Berkeley	93.859	6810177	—	194,343
University of California – San Diego	93.859	91338308	—	97,958
University of Chicago	93.859	FP055408	—	1,362

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Federal grantors/pass-through grantors/agencies or cluster title	Federal CFDA number	Direct award or pass-through entity identifying number	Passed through to subrecipients	Federal expenditures
University of Iowa	93.859	1001762952	$ —	83,582
University of North Carolina – Chapel Hill	93.859	5110874	—	67,635
University of North Carolina – Chapel Hill	93.859	5100062	—	15,093
University of North Carolina – Chapel Hill	93.859	5114184	—	470
University of North Carolina – Chapel Hill	93.859	5107515	—	(382)
University of North Carolina – Chapel Hill	93.859	5110875	—	84,962
Vanderbilt University	93.859	UNIV60829	—	1,681
Washington University in St. Louis	93.859	WU-15-397	—	128,796
Washington University in St. Louis	93.859	WU-18-28-MOD-2	—	37,540
Subtotal Biomedical Research And Research Training (CFDA 93.859)			471,825	29,699,726
Child Health And Human Development Extramural Research	93.865	Direct	2,048,605	14,840,699
Pass-through programs from:				
Baebies, Inc	93.865	No Award Number	—	296,433
California Institute of Technology	93.865	S383607	—	215,996
Children's Hospital Los Angeles	93.865	RGP010402-A	—	731
Cincinnati Children's Hospital Medical Center	93.865	139469	—	110,192
General Hospital Corporation (Mass)	93.865	229029	—	201,332
General Hospital Corporation (Mass)	93.865	233278	—	199,348
Harvard University	93.865	116355-5066764 MNL	—	7,413
Icahn School of Medicine at Mount Sinai	93.865	0255-4031-4609	—	212,086
Magee-Womens Research Institute and Foundation	93.865	3503	—	340,171
Quality Biological, Inc.	93.865	No Award Number	—	28,931
Research Triangle Institute International	93.865	225712	—	162,092
Research Triangle Institute International	93.865	No Award Number	—	120,350
Stanford University	93.865	61085438-117721	—	177,120
Stanford University	93.865	61919042-126401	—	14,787
The Board of Regents of the University of Wisconsin System	93.865	857K032	—	18,683
The Board of Regents of the University of Wisconsin System	93.865	508K325	—	(5,972)
The Children's Mercy Hospital	93.865	No Award Number	—	170
The Children's Mercy Hospital	93.865	17-0001	—	29,536
University of Alabama at Birmingham	93.865	000509380-SP004-005	—	24,613
University of Arkansas for Medical Sciences	93.865	51460	—	232,598
University of Arkansas for Medical Sciences	93.865	51460 VDORA	—	85,881
University of North Carolina – Chapel Hill	93.865	5113863	—	4,972
University of North Carolina – Chapel Hill	93.865	No Award Number	—	160
University of North Carolina – Chapel Hill	93.865	17-1709	—	8,457
University of North Carolina – Chapel Hill	93.865	5112135	—	24,949
University of North Carolina – Chapel Hill	93.865	5109265	—	(23)
University of North Carolina – Chapel Hill	93.865	5110645	—	52,685
University of North Carolina – Chapel Hill	93.865	5111124	—	55,914
University of North Carolina – Chapel Hill	93.865	5105595	—	92,913
University of Texas Medical Branch	93.865	16-054	—	2,448
University of Texas Medical Branch	93.865	15-037	—	3,549
University of Virginia – Charlottesville	93.865	GB10584.2150590	—	8,779
University of Washington	93.865	UWSC10748	—	16,864
Vanderbilt University Medical Center	93.865	VUMC53376	—	1,939
Vanderbilt University Medical Center	93.865	VUMC61276	—	46,205
Vanderbilt University Medical Center	93.865	VUMC61276 SUB#1-P2831888	20,821	23,031
Subtotal Child Health And Human Development Extramural Research (CFDA 93.865)			2,069,426	17,656,032
Aging Research	93.866	Direct	4,643,112	26,376,292
Pass-through programs from:				
American Geriatrics Society	93.866	AGS-U13AG054139	—	5,264
Brigham and Women's Hospital	93.866	120037	—	42,860
Brigham and Women's Hospital	93.866	113049	—	204,888
Brigham and Women's Hospital	93.866	120036	—	15,033
Brown University	93.866	1173	—	331,961
California Pacific Medical Center	93.866	280201019-S227	—	58,644
California Pacific Medical Center	93.866	No Award Number	—	5,876
Columbia University	93.866	1(GG012937-01) SUB #1-P2832173	3,998	6,357
Columbia University	93.866	1(GG012937-01) SUB #2-P2832173	—	(8,658)
Columbia University	93.866	1(GG012937-01) SUB #3-P2832173	3,999	6,358
Columbia University	93.866	1(GG012937-01)	—	154,726
Columbia University	93.866	2(GG012026-01)	—	315,986
Columbia University	93.866	2(GG012126-04)	—	2,503
Columbia University	93.866	4(GG013391-01)	—	20,132
Dana-Farber Cancer Institute	93.866	1201601	—	82,799
Emory University	93.866	A119188	—	2,489
Indiana University	93.866	IN-4688035-DU	—	3,535
Kaiser Permanente	93.866	RNG209396-DU-01	—	12,238
Mayo Clinic	93.866	DUK-233173	—	10,736
Mayo Clinic Jacksonville	93.866	DUK-233173-01	—	83,372
National Bureau of Economic Research	93.866	4029E.23.00.08.DUKE	—	49,965
NeuroCog Trials	93.866	No Award Number	—	72,021
Pennsylvania State University	93.866	5447-DU-DHHS-4138	—	48,864
Regents of the University of Michigan	93.866	3004655427	—	(6)
Regents of the University of Michigan	93.866	3004228394	—	125,077
Regents of the University of Michigan	93.866	3002602981	—	142,160
Regents of the University of Michigan	93.866	3004154503	—	160
Resilio Therapeutics	93.866	No Award Number	—	169,637
Stanford University	93.866	61483188-122233	—	7,362
University of Arizona	93.866	422088	—	94,206
University of California – San Diego	93.866	72796957	—	81,104
University of California – San Francisco	93.866	10850sc	—	38,017
University of Delaware	93.866	51525	—	96,459
University of Kentucky	93.866	3200002345-19-179	—	4,800
University of Massachusetts Worcester	93.866	OSP2018117	—	35,758
University of Miami	93.866	SPC-000898	—	138,157
University of North Carolina – Chapel Hill	93.866	5113091	—	6,336
University of North Carolina – Chapel Hill	93.866	5108798	—	50,843
University of North Carolina – Chapel Hill	93.866	5111428	—	156,601
University of Notre Dame	93.866	203156DU	—	90,072
University of Pennsylvania	93.866	573045	—	48,632
University of Pittsburgh	93.866	0043792 (130576-1)	—	15,678
University of Pittsburgh	93.866	0057266 (130390-1)	—	35,674
University of Southern California	93.866	79635019	—	49,697
Wake Forest University Health Sciences	93.866	101730-110879R	—	28,151
Wake Forest University Health Sciences	93.866	WFUHS 101730-110879C	—	163,304
Wake Forest University Health Sciences	93.866	WFUHS 553487	—	23,575
Wake Forest University Health Sciences	93.866	WFUHS 553568	—	3,693
Wake Forest University School Of Medicine	93.866	WFUHS 112941	—	278,753
Wake Forest University School Of Medicine	93.866	WFUHS118269	—	24,881
Water Resources Research Institute	93.866	2016-0661-01	—	50,869
Wayne State University	93.866	WSU17052 SUB #1-P3531422	—	31,826
Wayne State University	93.866	WSU17052	—	482,433
Subtotal Aging Research (CFDA 93.866)			4,651,109	30,378,150

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Federal grantors/pass-through grantors/agencies or cluster title	Federal CFDA number	Direct award or pass-through entity identifying number	Passed through to subrecipients	Federal expenditures
Vision Research	93.867	Direct	$ 800,138	12,484,239
Pass-through programs from:				
Emory University	93.867	T684225 SUB #1-P2830862	—	1,033
Emory University	93.867	T892218 SUB #1-P2831409	—	(1,032)
Emory University	93.867	A070574	—	2,857
Emory University	93.867	T892218	—	394
Eyedesis Biosciences LLC	93.867	No Award Number	—	60,620
Georgia Institute of Technology	93.867	RF688-G1	—	178,106
Harvard University	93.867	2300142-02-02	—	155
Harvard University	93.867	530066	—	22,677
Jaeb Center For Health Research	93.867	No Award Number	—	229,643
Jaeb Center For Health Research	93.867	1XT1	—	671
Jaeb Center For Health Research	93.867	1XT2	—	806
Jaeb Center For Health Research	93.867	CO2	—	4,165
Johns Hopkins University Applied Physics Laboratory	93.867	2002740713	—	7,461
nGoggle, Inc	93.867	No Award Number	—	186,695
Northwestern University	93.867	SP0028943-PROJ0007597	—	184,550
NYU Langone Medical Center	93.867	106171	—	3,424
Rescindo Therapeutics Inc	93.867	No Award Number	—	14,824
Schepens Eye Research Institute	93.867	4000-0000002145	—	25,291
Schepens Eye Research Institute	93.867	533320	—	3,043
The University of Oklahoma Health Sciences Center	93.867	RS20180691-01	—	233,690
University of Alabama at Birmingham	93.867	000517565-004	—	59,891
University of Arizona	93.867	397026	—	28,979
University of Florida	93.867	UFDSP00011531	—	111,037
University of Miami	93.867	411	—	119,578
University of Pennsylvania	93.867	576250	—	10,581
University of Southern California	93.867	79172502	—	87,056
Weill Medical College of Cornell University	93.867	183136-1	—	148,527
Weill Medical College of Cornell University	93.867	192811	—	8,351
Subtotal Vision Research (CFDA 93.867)			800,138	14,217,312
Medical Library Assistance	93.879	Direct	43,154	254,031
Pass-through programs from:				
Stanford University	93.879	62018721-135162	—	4,340
Subtotal Medical Library Assistance (CFDA 93.879)			43,154	258,371
International Research And Research Training	93.989	Direct	263,656	1,463,570
Pass-through programs from:				
Aga Khan University	93.989	AKU_MED_NIH-001_MAR-2019	—	7,050
Kilimanjaro Christian Medical Centre	93.989	No Award Number	—	46,858
Muhimbili University of Health and Allied Sciences	93.989	1R25-02	—	16,718
University of North Carolina – Chapel Hill	93.989	5108174	—	260,251
Vanderbilt University Medical Center	93.989	VUMC 63217 SUB #1-P3820722	3,156	3,408
Vanderbilt University Medical Center	93.989	VUMC 58378 SUB #1-P3820720	4,320	4,666
Vanderbilt University Medical Center	93.989	VUMC 63217	—	2,452
Vanderbilt University Medical Center	93.989	VUMC 58378	—	5,672
Vanderbilt University Medical Center	93.989	VUMC 63218	—	4,137
Vanderbilt University Medical Center	93.989	VUMC 63216	—	16,281
Vanderbilt University Medical Center	93.989	VUMC 66914	—	6,747
Vanderbilt University Medical Center	93.989	VUMC 66914 SUB #1-P3820767	6,669	7,203
Vanderbilt University Medical Center	93.989	VUMC 66916	—	81,783
Vanderbilt University Medical Center	93.989	VUMC 66997	—	54,879
Vanderbilt University Medical Center	93.989	VUMC 66997 SUB #1-P3820765	9,024	9,746
Vanderbilt University Medical Center	93.989	VUMC 68645	—	31,108
Vanderbilt University Medical Center	93.989	VUMC 68645 SUB #1-P3880467	4,320	4,666
Vanderbilt University Medical Center	93.989	VUMC 63218 SUB #1-P3820718	4,471	4,829
Subtotal International Research And Research Training (CFDA 93.989)			295,616	2,032,024
Pass-through programs from:				
Advanced Bioscience Labs	93.UNK	DU-14007.05.031.0000	—	149,003
American College of Radiology Imaging Network	93.UNK	No Award Number	—	(18,899)
American College of Surgeons Oncology Group	93.UNK	Z1031	—	(10,907)
American Lung Association	93.UNK	No Award Number	—	888
Basilea Pharmaceutica	93.UNK	102568 WORK ORDER #1	—	36,832
Basilea Pharmaceutica	93.UNK	102568 WORK ORDER #2	—	67,020
Brigham and Women's Hospital	93.UNK	110009	—	13,669
Cempra Pharmaceuticals, Inc.	93.UNK	HHSO100201300009C	—	292,200
Cempra Pharmaceuticals, Inc.	93.UNK	HHSO100201300009C SUB#1-P3839753	14,836	23,590
Children's Hospital of Philadelphia	93.UNK	FP00026529_SUB48_01	—	1,519
Children's Hospital of Philadelphia	93.UNK	No Award Number	—	26,268
Children's Research Institute	93.UNK	No Award Number	—	10,831
Collagen Medical, LLC	93.UNK	No Award Number	—	97,143
Cornell University	93.UNK	84042-11077	—	14,112
Durham County Department of Social Services	93.UNK	1900000427	—	46,053
DxTerity Diagnostics	93.UNK	7243-1.2 PARENT	—	412,854
Fred Hutchinson Cancer Research Center	93.UNK	0000965466 PARENT	—	39,959
General Hospital Corporation (Mass)	93.UNK	218211	—	8,421
ICF International, Inc.	93.UNK	14TWSK0097	—	24,326
INDEVR Inc.	93.UNK	No Award Number	—	12,497
Institute for Medical Research, Inc.	93.UNK	No Award Number	—	33,571
Johns Hopkins University Applied Physics Laboratory	93.UNK	HHSN26800001	—	2,976
Johns Hopkins University Applied Physics Laboratory	93.UNK	PTCL10 MOD 01 SUB #1-P2832614	—	87
Johns Hopkins University Applied Physics Laboratory	93.UNK	PTCL 10 MOD 01 PARENT	—	24,834
Kilimanjaro Christian Medical Centre	93.UNK	6579-S28-03-DUKE	—	244,821
Leidos Biomedical Research, Inc.	93.UNK	16X222	—	110,804
Mayo Clinic	93.UNK	DUK-194321-04	—	57,686
Mayo Clinic	93.UNK	No Award Number	—	(27,855)
Medable	93.UNK	No Award Number	—	34,186
Medical Device Innovation	93.UNK	6292-2019-RITC6-001 PARENT	—	32,890
Mercy Health	93.UNK	FD005476-1220-04	—	(6,560)
Mitre Corporation	93.UNK	112374 TO#4 SUB #4-P2830504	—	172,886
Mitre Corporation	93.UNK	112374 TO#6	—	53,659
Molecular Express, Inc.	93.UNK	No Award Number	—	31,604
Molecular Express, Inc.	93.UNK	ME-1223	—	3,529
National Committee for Quality Assurance	93.UNK	No Award Number	—	59,362
National Committee for Quality Assurance	93.UNK	1-P2831407	—	12,716
National Committee for Quality Assurance	93.UNK	1-P2832397	—	9,443
National Committee for Quality Assurance	93.UNK	2-P2831407	—	25,966
National Committee for Quality Assurance	93.UNK	2-P2832397	—	86,534
National Fragile X Foundation	93.UNK	No Award Number	—	14,031
National Marrow Donor Program	93.UNK	1202	—	3,338
New York University	93.UNK	No Award Number	—	77,070
Northwestern University	93.UNK	No Award Number	—	1,844
Northwestern University	93.UNK	60049098	—	21,667
Northwestern University	93.UNK	SP0016040 60045311 TO 11	—	18,159
NRG Oncology Foundation	93.UNK	No Award Number	—	3,070
Research Triangle Institute International	93.UNK	3-312-0215034-52727L	—	10,502
Society of Thoracic Surgeons	93.UNK	No Award Number	—	3,522

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DUKE UNIVERSITY

Schedule of Expenditures of Federal Awards

Year ended June 30, 2019

Federal grantors/pass-through grantors/agencies or cluster title	Federal CFDA number	Direct award or pass-through entity identifying number	Passed through to subrecipients	Federal expenditures
The George Washington University	93.UNK	No Award Number	$ —	9,831
University of Alabama at Birmingham	93.UNK	000512395-002 SUB #1-P3531901	—	596
University of Alabama at Birmingham	93.UNK	000512395-002 SUB #2-P3531901	—	300
University of Alabama at Birmingham	93.UNK	000512395-002	—	296,583
University of Alabama at Birmingham	93.UNK	000512395-002 SUB #1-P3531684	—	6,551
University of Alabama at Birmingham	93.UNK	000512395-002 SUB #2-P3531684	—	24,366
University of Colorado Denver	93.UNK	FY19.571.002	—	35,904
University of Georgia	93.UNK	SUB00000285	—	101,926
University of Mississippi	93.UNK	66102690414-04DU MOD 4	—	3,288
University of Mississippi	93.UNK	66102700414-04DU	—	9,801
University of Mississippi	93.UNK	66111350819-02	—	53,517
University of North Carolina – Chapel Hill	93.UNK	5108490	—	40,700
University of North Carolina – Chapel Hill	93.UNK	5107237	—	54,312
University of North Carolina – Chapel Hill	93.UNK	5112089	—	9,978
University of Rochester	93.UNK	417402G/ UR FAO GR510830	—	64,790
University of Rochester	93.UNK	417403G/ UR FAO GR510831	—	74,721
University of South Florida	93.UNK	No Award Number	—	62,476
University of Southern California	93.UNK	77872168	—	88,593
University of Southern California	93.UNK	115512830	—	17,301
University of Texas Health Science Center at San Antonio	93.UNK	163634/163613	—	343,326
Vanderbilt University Medical Center	93.UNK	No Award Number	—	8,903
Wake Forest University Health Sciences	93.UNK	330098	—	3,348
Water Resources Research Institute	93.UNK	No Award Number	—	11,850
Total Department of Health and Human Services			70,848,057	563,173,499
Department of Homeland Security	97.RD	Direct	561,903	1,314,073
Assistance to Firefighters Grant	97.044	Direct	—	187,444
Centers for Homeland Security				
Pass-through programs from:				
Northeastern University	97.061	505036-78056	—	54,538
Northeastern University	97.061	505036-78056 SUB#1-P2831442	1,128	1,805
Northeastern University	97.061	505036-78056 SUB#2-P2831442	—	30,494
Subtotal Centers for Homeland Security (CFDA 97.061)			1,128	86,837
Homeland Security Research, Development, Testing, Evaluation, and Demonstration of Technologies				
Related to Nuclear Threat Detection	97.077	Direct	—	11,377
Pass-through programs from:				
Scott & White Memorial Hospital	97.UNK	51100191700-001	—	27,866
University of Arizona	97.UNK	380290	—	278,878
Total Department of Homeland Security			563,031	1,906,475
Agency for International Development	98.RD	Direct	1,227,288	2,376,036
USAID Foreign Assistance for Programs Overseas				
Pass-through programs from:				
Internews	98.001	SG-R-GX1874-2	—	319,506
Research Triangle Institute International	98.001	3-330-0216694-65520L	—	133,164
Subtotal USAID Foreign Assistance For Programs Overseas (CFDA 98.001)			—	452,670
Pass-through programs from:				
BroadReach Healthcare	98.UNK	BR-C 16/0072	—	248,768
International Water Management Institute	98.UNK	4500030326	—	49,087
Results for Development Institute	98.UNK	R4D-797	—	326,492
University Research Co., LLC	98.UNK	FY17-A06-7028	—	234,170
Total Agency for International Development			1,227,288	3,687,223
Total Research and Development Cluster			91,389,341	697,799,029
Student Financial Assistance Cluster:				
Department of Education				
Federal Supplemental Educational Opportunity Grant	84.007	Direct	—	1,584,585
Federal Work Study Program	84.033	Direct	—	1,905,498
Federal Perkins Loan Program	84.038	Direct	—	21,157,963
Federal Pell Grant Program	84.063	Direct	—	4,610,520
Federal Direct Student Loan Program	84.268	Direct	—	128,533,558
Total Department of Education			—	157,792,124
Department of Health and Human Services				
Nurse Faculty Loan Program	93.264	Direct	—	4,875,086
Total Department of Health and Human Services			—	4,875,086
Total Student Financial Assistance Cluster			—	162,667,210
Other Programs:				
Department of Agriculture				
Agriculture and Food Research Initiative	10.310	Direct	—	44,765
Urban and Community Forestry Program				
Pass-through programs from:				
North Carolina Forest Service	10.675	18-119-2019	—	2,267
Total Department of Agriculture			—	47,032
Department of Commerce:				
Sea Grant Support				
Pass-through programs from:				
Water Resources Research Institute	11.417	2017-0170-01	—	4,652
Water Resources Research Institute	11.417	2018-2791-01	—	128
Subtotal Sea Grant Support (CFDA 11.417)			—	4,780
Pass-through programs from:				
Mid-Atlantic Fishery Management Council	11.UNK	No Award Number	—	32,781
New England Fishery Management Council	11.UNK	NEFMC GRANT #18-15	—	42,053
North Pacific Fishery Management Council	11.UNK	2018-03	—	38,079
Total Department of Commerce			—	117,693
Department of Defense:				
Basic and Applied Scientific Research	12.300	Direct	—	70,750
Pass-through programs from:				
National Marrow Donor Program	12.300	209159	—	500
National Marrow Donor Program	12.300	No Award Number	—	13,881
Subtotal Basic and Applied Scientific Research (CFDA 12.300)			—	85,131
ROTC Language and Culture Training Grants				
Pass-through programs from:				
Institute of International Education	12.357	2603-DUKE-15-GO-051-PO4	—	32,014
Institute of International Education	12.357	2603-DUKE-15-GO-051-PO4 SUB1-3810300	—	55,150
Subtotal ROTC Language and Culture Training Grants (CFDA 12.357)			—	87,164
Basic Science Research	12.431	Direct	—	253,563

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DUKE UNIVERSITY

Schedule of Expenditures of Federal Awards

Year ended June 30, 2019

Federal grantors/pass-through grantors/agencies or cluster title	Federal CFDA number	Direct award or pass-through entity identifying number	Passed through to subrecipients	Federal expenditures
Centers for Academic Excellence				
Pass-through programs from:				
University of North Carolina at Chapel Hill	12.598	5112119	$ —	55,616
University of North Carolina at Chapel Hill	12.598	5108924	—	4,560
Subtotal Centers for Academic Excellence (CFDA 12.598)			—	60,176
Total Department of Defense			—	486,034
Department of Housing and Urban Development:				
Pass-through programs from:				
Housing Opportunities for Persons with AIDS				
North Carolina Department of Health and Human Services	14.241	37544	—	54,852
North Carolina Department of Health and Human Services	14.241	37545	—	73,792
North Carolina Department of Health and Human Services	14.241	37545 SUB#1-P3590328	—	839
North Carolina Department of Health and Human Services	14.241	35626	—	16,835
North Carolina Department of Health and Human Services	14.241	35627	—	16,343
North Carolina Department of Health and Human Services	14.241	35627 SUB #1-P3590293	—	14,197
Total Department of Housing and Urban Development			—	176,858
Department of Interior	15.UNK	Direct	—	26,500
Department of Justice:				
Promoting Evidence Integration in Sex Offender Management Discretionary Grant Program				
Pass-through programs from:				
Center for Effective Public Policy	16.203	383-02-DUKUNI-451	—	12,405
Total Department of Justice			—	12,405
Department of State:	19.UNK	Direct	—	12,000
Global Threat Reduction	19.033	Direct	85,127	831,789
Bureau of Near Eastern Affairs				
Pass-through programs from:				
World Learning	19.600	S02-SNEAAC-17-CA-1031	—	45,974
World Learning	19.600	1 – P3890930	—	17,130
World Learning	19.600	2 – P3890930	—	30,479
Subtotal Bureau of Near Eastern Affairs (CFDA 19.600)			—	93,583
Total Department of State			85,127	937,372
Internal Revenue Service:				
Pass-through programs from:				
Reinvestment Partners	21.UNK	No Award Number	—	2,400
National Aeronautics and Space Administration:				
Science	43.001	Direct	—	265,459
Education				
Pass-through programs from:				
Water Resources Research Institute	43.008	2015-1942-DU-03	—	128
Total National Aeronautics and Space Administration			—	265,587
National Endowment for the Arts:				
Promotion of the Arts: Grants to Organizations and Individuals:	45.024	Direct	—	64,583
Pass-through programs from:				
South Arts	45.UNK	5521	—	4,469
Total National Endowment for the Arts			—	69,052
National Endowment for the Humanities:				
Promotion of the Humanities: Challenge Grants	45.130	Direct	—	156,439
Promotion of the Humanities: Division of Preservation and Access	45.149	Direct	—	80,688
Promotion of the Humanities: Fellowships and Stipends	45.160	Direct	—	(12,784)
Promotion of the Humanities: Research	45.161	Direct	—	100,444
Promotion of the Humanities: Professional Development	45.163	Direct	—	162,992
Promotion of the Humanities: Office of Digital Humanities	45.169	Direct	—	152,154
Laura Bush 21st Century Librarian Program	45.313	Direct	—	9,050
Total National Endowment for the Humanities			—	648,983
National Gallery of Art	68.UNK	Direct	—	40,919
Department of Energy:				
Office of Science Financial Assistance Program	81.049	Direct	—	10,944
Defense Nuclear Nonproliferation Research				
Pass-through programs from:				
Water Resources Research Institute	81.113	2014-0501-11-F1	—	50,781
Water Resources Research Institute	81.113	2014-0501-11-F2	—	50,877
Subtotal Defense Nuclear Nonproliferation Research (CFDA 81.113)			—	101,658
Pass-through programs from:				
Krell Institute	81.UNK	No Award Number	—	1,787
Oak Ridge Institute for Science and Education	81.UNK	No Award Number	—	3,125
Oak Ridge National Laboratory	81.UNK	4000110329	—	41,039
Sandia National Laboratories	81.UNK	1938977	—	3,569
Thomas Jefferson National Accelerator Facility	81.UNK	No Award Number	—	7,782
Total Department of Energy			—	169,904
Department of Education:				
National Resource Centers Program for Foreign Language and Area Studies or Foreign Language and International Studies Program and Foreign Language and Area Studies Fellowship Program	84.015	Direct	112,093	180,620
Pass-through programs from:				
University of North Carolina – Chapel Hill	84.015	5111842	—	47,441
University of North Carolina – Chapel Hill	84.015	5111842 SUB #1-P3520148	—	1,835
University of North Carolina – Chapel Hill	84.015	5111804	—	165,978
University of North Carolina – Chapel Hill	84.015	5102365	—	4,549
Subtotal National Resource Centers Program for Foreign Language and Area Studies or Foreign Language and International Studies Program and Foreign Language and Area Studies Fellowship Program (CFDA 84.015)			112,093	400,423
Overseas Programs – Doctoral Dissertation Research Abroad	84.022	Direct	—	95,807
Graduate Assistance in Areas of National Need	84.200	Direct	—	132,178
Language Resource Centers	84.229	Direct	13,427	89,763
Indian Education – Special Programs for Indian Children	84.299	Direct	5,789	88,040
Total Department of Education			131,309	806,211
Department of Health and Human Services:				
National Family Caregiver Support, Title III, Part E				
Pass-through programs from:				
North Carolina Department of Health & Human Services	93.052	00037512	—	125,196

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DUKE UNIVERSITY

Schedule of Expenditures of Federal Awards

Year ended June 30, 2019

Federal grantors/pass-through grantors/agencies or cluster title	Federal CFDA number	Direct award or pass-through entity identifying number	Passed through to subrecipients	Federal expenditures
Medicare Enrollment Assistance Program				
Pass-through programs from:				
National Council on Aging	93.071	No Award Number	$ —	65,935
Hospital Preparedness Program (HPP) and Public Health Emergency Preparedness (PHEP)				
Aligned Cooperative Agreements	93.074	Direct	—	499,338
Affordable Care Act (ACA) Personal Responsibility Education Program				
Pass-through programs from:				
North Carolina Department of Health & Human Services	93.092	38506	—	5,520
North Carolina Department of Health & Human Services	93.092	00036808	—	111,342
North Carolina Department of Health & Human Services	93.092	35117	—	384
Subtotal Affordable Care Act (ACA) Personal Responsibility Education Program (CFDA 93.092)			—	117,246
Food and Drug Administration Research	93.103	Direct	—	542,590
Area Health Education Centers				
Pass-through programs from:				
University of North Carolina – Chapel Hill	93.107	5109112	—	3,595
University of North Carolina – Chapel Hill	93.107	5112715	—	25,841
Subtotal Area Health Education Centers (CFDA 93.107)			—	29,436
Maternal and Child Health Federal Consolidated Programs				
Pass-through programs from:				
North Carolina Department of Health & Human Services	93.110	No Award Number	—	19
North Carolina Department of Health & Human Services	93.110	00038436	—	52,253
North Carolina Department of Health & Human Services	93.110	38356	—	25,748
Subtotal Maternal and Child Health Federal Consolidated Programs (CFDA 93.110)			—	78,020
Project Grants and Cooperative Agreements for Tuberculosis Control Programs				
Pass-through programs from:				
North Carolina Department of Health & Human Services	93.116	00036376	—	42,337
North Carolina Department of Health & Human Services	93.116	00037999	—	43,526
Subtotal Project Grants and Cooperative Agreements for Tuberculosis Control Programs (CFDA 93.116)			—	85,863
Nurse Anesthetist Traineeship	93.124	Direct	—	83,855
HIV-Related Training and Technical Assistance				
Pass-through programs from:				
Vanderbilt University Medical Center	93.145	VUMC56744	—	2,055
Coordinated Services and Access to Research for Women, Infants, Children, and Youth	93.153	Direct	149,568	509,676
Pass-through programs from:				
New Hanover Regional Medical Center	93.153	No Award Number	—	100,694
Subtotal Coordinated Services and Access to Research for Women, Infants, Children, and Youth (CFDA 93.153)			149,568	610,370
Nursing Workforce Diversity	93.178	Direct	—	441,265
Research On Healthcare Costs, Quality And Outcomes	93.226	Direct	—	295,100
Advanced Nursing Education Workforce Grant Program	93.247	Direct	201,993	845,143
Occupational Safety and Health Program				
Pass-through programs from:				
University of North Carolina at Chapel Hill	93.262	5110895	—	104,097
Centers for Disease Control and Prevention, Investigations, and Technical Assistance	93.283	Direct	—	121,345
Affordable Care Act (ACA) Advanced Nursing Education Expansion Initiative				
Pass-through programs from:				
Affordable Care Act (ACA) Advanced Nursing Education Expansion Initiative	93.513	No Award Number	—	47,008
Hospital Preparedness Program (HPP) Ebola Preparedness and Response Activities	93.817	Direct	—	176,707
ACL Centers for Independent Living, Recovery Act	93.844	Direct	—	197,570
Grants for Primary Care Training and Enhancement	93.884	Direct	—	436,385
HIV Care Formula Grants				
Pass-through programs from:				
County of Wake	93.917	1-P3590308	—	54,192
County of Wake	93.917	1-P3590314	—	94,159
County of Wake	93.917	No Award Number	—	112,149
North Carolina Department of Health & Human Services	93.917	00036473 SUB #1-P3590305	—	100,833
North Carolina Department of Health & Human Services	93.917	00036473	—	210,815
North Carolina Department of Health & Human Services	93.917	00038080	—	39,549
North Carolina Department of Health & Human Services	93.917	00038080 SUB#1-P3590339	—	29,596
Wake County Human Services	93.917	1-P3590360	—	772
Wake County Human Services	93.917	No Award Number	—	40,222
Wake County Human Services	93.917	1-P3590342	—	18,656
Subtotal HIV Care Formula Grants (CFDA 93.917)			—	700,943
Special Projects of National Significance	93.928	Direct	—	174,611
Cooperative Agreements to Support State-Based Safe Motherhood and Infant Health Initiative Programs				
Pass-through programs from:				
Sexual Health Initiatives for Teens	93.946	NU58DP006141	—	24,613
Block Grants for Prevention and Treatment of Substance Abuse				
Pass-through programs from:				
County of Wake	93.959	No Award Number	—	91,855
PPHF Geriatric Education Centers	93.969	Direct	123,185	936,992
Pass-through programs from:				
Alliance Behavioral Healthcare	93.UNK	No Award Number	—	874
Harvard Pilgrim Health Care, Inc.	93.UNK	HHSF22301008T	—	4,000
North Carolina Department of Health & Human Services	93.UNK	38563	—	4,156
North Carolina Department of Health & Human Services	93.UNK	00037512 SUB#1-P3590324	—	2,321
Total Department of Health and Human Services			474,746	6,844,889
Agency for International Development:				
USAID Foreign Assistance for Programs Overseas	98.001	Direct	139,893	1,094,862
Pass-through programs from:				
Nathan Associates, Inc	98.001	30095-10/30095-11 SUB#6-P3890685	—	16,652
Nathan Associates, Inc	98.001	30095-10/30095-11 SUB#7-P3890685	—	4,371
Total Agency for International Development			139,893	1,115,885
Total Other			831,075	11,767,724
Total Federal Award Expenditures			$ 92,220,416	872,233,963

See accompanying notes to schedules of expenditures of federal and state awards.

See accompanying independent auditors' report.

DUKE UNIVERSITY

Schedule of Expenditures of State Awards

Year ended June 30, 2019

State grantors/pass-through grantors/agencies or cluster title		State expenditures
North Carolina Arts Council	$	63,800
North Carolina Central University		21,460
North Carolina Department of Environmental Quality		117,539
North Carolina Department of Health and Human Services		805,334
North Carolina Department of Natural and Cultural Resources		26,984
North Carolina Forgivable Education Loans for Services		442,250
North Carolina Golden LEAF Scholarship Program		4,500
North Carolina National Guard Tuition Assistance Program		9,359
North Carolina Need-Based Scholarship Program		1,180,419
North Carolina State University		91,330
University of North Carolina at Chapel Hill		2,008,133
Total State Award Expenditures	$	4,771,108

See accompanying notes to schedules of expenditures of federal and state awards.

See accompanying independent auditors' report.

(1) Basis of Presentation

The accompanying schedule of expenditures of federal awards includes all grants, contracts, and similar agreements entered into directly between Duke University (Duke) and agencies and departments of the federal government and all subawards to Duke by other organizations pursuant to federal grants, contracts, and similar agreements. The accompanying schedule of expenditures of state awards includes all grants, contracts, and similar agreements entered into directly between Duke and agencies and departments of the North Carolina state government and all subawards to Duke by other organizations pursuant to state grants, contracts, and similar agreements. The information in these schedules is prepared on the accrual basis of accounting. The federal award information is presented in accordance with the provisions of Title 2 U.S. Code of Federal Regulations Part 200, *Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards* (Uniform Guidance). Therefore, certain amounts presented in this schedule may differ from amounts presented in, or used in the preparation of, the consolidated financial statements.

(2) Summary of Significant Accounting Policies

Expenditures for student financial aid programs are recognized as incurred and include the federal share of students' Federal Supplemental Educational Opportunity Grants program and Federal Work-Study program earnings, Pell grants, loan disbursements and administrative cost allowances, where applicable.

Expenditures for research and development and other federal awards are determined using the cost accounting principles and procedures set forth in OMB Circular A-21, *Cost Principles for Educational Institutions*, and the uniform administrative requirements as set forth in OMB Circular A-110, *Uniform Administrative Requirements for Grants and Agreements with Institutions of Higher Education, Hospitals, and Other Non-Profit Organizations* or the administrative and cost principles contained in Title 2 U.S. Code of Federal Regulations Part 200, *Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards*, as applicable. Under these cost principles and administrative requirements, certain expenditures are not allowable or are limited as to reimbursement.

Expenditures include facilities and administrative costs, related primarily to facilities operation and maintenance and general, divisional, and departmental administrative services, which are allocated as a percentage of direct cost based on negotiated rates. Facilities and administrative costs allocated to such awards for the year ended June 30, 2019 were based on predetermined fixed rates negotiated with Duke's cognizant federal agency, the Department of Health and Human Services. Duke has elected not to use the 10-percent de minimis indirect cost rate as allowed under the Uniform Guidance.

(3) Summary of Facilities and Administrative Cost Allowances – Governmental Sources

Facilities and administrative cost recoveries and administrative cost allowances from governmental sources, included in the schedule of expenditures of federal awards, for the year ended June 30, 2019 are summarized as follows:

Research and development	$ 171,869,000
Training and other programs	2,840,000
	$ 174,709,000

(4) Federal Student Financial Aid Loan Programs

The Federal Perkins and Nurse Faculty Loan (Nurse) programs are administered directly by Duke and balances and transactions relating to these programs are included in Duke's consolidated financial statements. The current year loaned amounts under the Federal Perkins and Nurse programs were $0 and $1,150,163, respectively. The amount of Federal Perkins and Nurse loans on the schedule of expenditures of federal awards includes the beginning outstanding loan balance, the current year loaned amount and the administrative charge. The balances of loans outstanding under the Federal Perkins and Nurse programs were $16,448,966 and $3,939,039, respectively, as of June 30, 2019.

Duke is responsible only for the performance of certain administrative duties with respect to the Direct Loan Program and, accordingly, these loans are not included in its consolidated financial statements. It is not practical to determine the balance of loans outstanding to students and former students of Duke under these programs as of June 30, 2019. The amount of current year loaned amounts is included in the schedule of federal expenditures.

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Independent Auditors' Report 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*

The Board of Trustees of Duke University:

We have audited, in accordance with the 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 Duke University (Duke), which comprise the consolidated balance sheet as of June 30, 2019, the related consolidated statements of activities and cash flows for the year then ended, and the related notes to the consolidated financial statements, and have issued our report thereon dated October 1, 2019, which included an emphasis of matter paragraph indicating Duke adopted Accounting Standards Update 2014-09, *Revenue from Contracts with Customers,* as amended, and Accounting Standards Update 2018-08, *Not-for-Profit Entities – Clarifying the Scope and Accounting Guidance for Contributions Received and Contributions Made*, during the year ended June 30, 2019.

Internal Control Over Financial Reporting

In planning and performing our audit of the consolidated financial statements, we considered Duke's internal control over financial reporting (internal control) to determine the audit procedures that are appropriate in the circumstances for the purpose of expressing our opinion on the consolidated financial statements, but not for the purpose of expressing an opinion on the effectiveness of Duke's internal control. Accordingly, we do not express an opinion on the effectiveness of Duke'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 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 Duke's consolidated financial statements are free from material misstatement, we performed tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements, noncompliance with which could have a direct and material effect on the determination of financial statement amounts. However, providing an opinion on compliance with those provisions was not an objective of our audit, and accordingly, we do not express such an opinion. The results of

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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 Duke's internal control or on compliance. This report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering Duke's internal control and compliance. Accordingly, this communication is not suitable for any other purpose.

KPMG LLP

October 1, 2019

KPMG LLP
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Independent Auditors' Report on Compliance for Each Major Federal Program; Report on Internal Control over Compliance; and Report on Schedule of Expenditures of Federal Awards Required by the Uniform Guidance and Schedule of Expenditures of State Awards

The Board of Trustees
Duke University:

Report on Compliance for Each Major Federal Program

We have audited Duke University's (Duke) compliance with the types of compliance requirements described in the *OMB Compliance Supplement* that could have a direct and material effect on each of Duke's major federal programs for the year ended June 30, 2019. Duke's major federal program is identified in the summary of auditors' results section of the accompanying schedule of findings and questioned costs.

Management's Responsibility

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

Auditors' Responsibility

Our responsibility is to express an opinion on compliance for each of Duke'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 Duke'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 the major federal program. However, our audit does not provide a legal determination of Duke's compliance.

Opinion on Each Major Federal Program

In our opinion, Duke 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, 2019.

Other Matters

The results of our auditing procedures disclosed an instance of noncompliance, which is required to be reported in accordance with Uniform Guidance and which is described in the accompanying schedule of findings and questioned costs as item 2019-001. Our opinion on the federal program is not modified with respect to this matter.

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Duke's response to the noncompliance finding identified in our audit is described in the accompanying schedule of findings and questioned costs. Duke is also responsible for preparing a corrective action plan to address each audit finding included in our auditors' report. Duke's response and corrective action plan were not subjected to the auditing procedures applied in the audit of compliance and, accordingly, we express no opinion on the response or the corrective action plan.

Report on Internal Control over Compliance

Management of Duke 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 Duke'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 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 Duke'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 and therefore, material weaknesses or significant deficiencies may exist that have not been identified. We did not identify any deficiencies in internal control over compliance that we consider to be material weaknesses. However, we did identify a certain deficiency in internal control over compliance, described in the accompanying schedule of findings and questioned costs as item 2019-001, that we consider to be a significant deficiency.

Duke's response to the internal control over compliance finding identified in our audit is described in the accompanying schedule of findings and questioned costs. Duke is also responsible for preparing a corrective action plan to address each audit finding included in our auditors' report. Duke's response and corrective action plan were not subjected to the auditing procedures applied in the audit of compliance and, accordingly, we express no opinion on the response or the corrective action plan.

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 Uniform Guidance. Accordingly, this report is not suitable for any other purpose.

Report on Schedule of Expenditures of Federal Awards Required by Uniform Guidance and Schedule of Expenditures of State Awards (Collectively, Schedules of Expenditures of Federal and State Awards)

We have audited the consolidated financial statements of Duke as of and for the year ended June 30, 2019, and have issued our report thereon dated October 1, 2019, which contained an unmodified opinion on those consolidated financial statements. 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 is presented for purposes of additional analysis as required by Uniform Guidance and is not a required part of the consolidated financial statements. The accompanying schedule of expenditures of state awards is presented for purposes of additional analysis and is not a required part of the consolidated financial statements. Such information is the responsibility of management and was derived from and relates directly to the underlying accounting and other records used to prepare the consolidated financial statements. The information has been subjected to the auditing procedures applied in the audit of the consolidated financial statements and certain additional procedures, including comparing and reconciling such information directly to the underlying accounting and other records used to prepare the consolidated financial statements or to the consolidated financial statements themselves, and other additional procedures in accordance with auditing standards generally accepted in the United States of America. In our opinion, the Schedules of Expenditures of Federal Awards and State Awards are fairly stated in all material respects in relation to the consolidated financial statements as a whole.

KPMG LLP

March 3, 2020

DUKE UNIVERSITY

Schedule of Findings and Questioned Costs

Year ended June 30, 2019

(1) Summary of Auditors' Results

(a) Type of report issued on whether the financial statements were prepared in accordance with generally accepted accounting principles: **Unmodified**

(b) Internal control deficiencies over financial reporting disclosed by the audit of the financial statements:

- Material weaknesses: **No**
- Significant deficiencies: **None reported**

(c) Noncompliance material to the financial statements: **No**

(d) Internal control deficiencies over major programs disclosed by the audit:

- Material weaknesses: **No**
- Significant deficiencies: **Yes, 2019-001**

(e) The type of report issued on compliance for major program: **Unmodified**

(f) Audit findings that are required to be reported in accordance with 2 CFR 200.516(a): **Yes, 2019-001**

(g) Major program: **Research and Development Cluster (various CFDA numbers)**

(h) Dollar threshold used to distinguish between Type A and Type B programs: **$3,000,000**

(i) Auditee qualified as a low-risk auditee: **Yes**

(2) Findings Relating to the Financial Statements Reported in Accordance with *Government Auditing Standards:* None

(3) Findings and Questioned Costs Relating to Federal Awards

Finding 2019-001: Enrollment Reporting

Federal Program and Federal Award Number

Student Financial Assistance Cluster (CFDA # 84.268, 84.063); P063P181926, P268K191926

Federal Agency

U.S. Department of Education

Federal Award Year

July 1, 2018 through June 30, 2019

(continued)

Criteria or Requirement

Per Section 34 CFR 685.309, a school shall update the student status confirmation report for changes in student status, report the date the enrollment status was effective and return the student status confirmation report to the Secretary within 60 days of receipt.

Per Section 2 CFR 200.303, the non-Federal entity must establish and maintain effective internal control over the Federal award that provides reasonable assurance that the non-Federal entity is managing the Federal award in compliance with Federal statutes, regulations, and the terms and conditions of the Federal award.

Condition Found, Including Perspective

For a nonmajor program, the Student Financial Assistance cluster, while testing the remediation from the prior year finding, for 2 out of 35 students, the change in the student's status was not reported within the required 60 days. Additionally, for one student of the 35 students, the student's status was not submitted at all to the National Student Loan Data System (NSLDS).

Possible Cause and Effect

The control that management sets a predetermined schedule to submit an enrollment report on a monthly basis to ensure timely reporting to the NSLDS and reviews all reports for the accuracy of all data elements prior to submission was not operating at a level to identify all discrepancies.

Questioned Costs

None identified.

Statistical Validity

The sample was not intended to be, and was not, a statistically valid sample.

Repeat Finding in the Prior Year

Yes, see prior year finding 2018-001.

Recommendation

We recommend Duke enhance the precision of the control around the review of timeliness of the enrollment reporting submissions.

Views of Responsible Officials

Duke University concurs with this finding. The instances of untimely status changes related to students that withdrew in May, when the final report for the academic year was submitted at the end of April. To avoid late withdrawals being undetected, the Office of the University Registrar will run additional student status change reports in both June and July to eliminate this gap. In the instance of the student that was not reported at all, this was due to another institution submitting a student with an identical social security number, and as a result the Duke student was rejected. Going forward, the Office of the University Registrar will have the Office of Student Financial Aid verify any student information that has been rejected by the National Student Clearinghouse.

Duke UNIVERSITY

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& University Controller

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DUKE UNIVERSITY
Summary Schedule of Prior Audit Findings
Year ended June 30, 2019

Finding No. 2018 001: Enrollment Reporting

Corrective Action Planned
To ensure that students are reported with the proper enrollment status, an additional "graduates only" file is submitted at the end of the term. This file, in addition to the enrollment files submitted throughout the term, contains only those students who have graduated. Checks on the data are made both prior to and after submission to ensure accuracy and completeness.

Status
Prior year finding 2018-001 has been partially corrected. The University Registrar's office currently generates a "graduates only" file, and continues to refine and improve it. Additionally, the University Registrar has worked with the offices of the Student Information Services and Systems and Information Technology to create additional queries subsequent to the final spring reporting submission to the National Student Clearinghouse (NSC) that will capture any student status changes.

Finding No. 2018 002: Verification

Corrective Action Planned
To ensure that counselors are completing the verification process correctly, in addition to the annual training and updates they receive, the Assistant Director for Compliance will select a sample of students whose verification has been completed and test to confirm that the verification process has been completed correctly. The sample will include verifications completed by each counselor and will constitute a reasonable percentage of the total number of families selected for verification.

Status
Corrective action completed

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DUKE UNIVERSITY
Corrective Action Plan
Year ended June 30, 2019

Finding No. 2019-001: Enrollment Reporting

Corrective Action Planned

The instances of untimely status changes related to students that withdrew in May, when the final report for the academic year was submitted at the end of April. To avoid late withdrawals being undetected, the Office of the University Registrar will run additional student status change reports in both June and July to eliminate this gap. In the instance of the student that was not reported at all, this was due to another institution submitting a student with an identical social security number, and as a result the Duke student was rejected. Going forward, the Office of the University Registrar will have the Office of Student Financial Aid verify any student information that has been rejected by the National Student Clearinghouse.

Person Responsible for Corrective Action
Frank Blalark, Associate Vice Provost and University Regristrar

Anticipated Completion Date
June 2020