Consolidated Financial Statements and Supplementary Information, Including Uniform Guidance Reports and Schedule

Vanderbilt University Medical Center
Year Ended June 30, 2018
With Report of Independent Auditors

Ernst & Young LLP

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Vanderbilt University Medical Center
Index to Consolidated Financial Statements
June 30, 2018 and 2017

Page

Report of Independent Auditors 1

Consolidated Financial Statements

Consolidated Balance Sheets 3
Consolidated Statements of Operations 4
Consolidated Statements of Changes in Net Assets 5
Consolidated Statements of Cash Flows 6
Notes to Consolidated Financial Statements 7

Supplementary Information

Schedule of Expenditures of Federal Awards and State Financial Assistance 38
Notes to Schedule of Expenditures of Federal Awards and State Financial Assistance 87

Uniform Guidance Reports and Schedule

Report of Independent Auditors on Internal Control Over Financial Reporting and on Compliance and Other Matters Based on an Audit of Financial Statements Performed in Accordance with *Government Auditing Standards* 88
Report of Independent Auditors on Compliance for the Major Federal Program and Report on Internal Control Over Compliance Required by the Uniform Guidance 90
Schedule of Findings and Questioned Costs 92

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Report of Independent Auditors

The Board of Directors
Vanderbilt University Medical Center

We have audited the accompanying consolidated financial statements of Vanderbilt University Medical Center, which comprise the consolidated balance sheet as of June 30, 2018, and the related consolidated statements of operations, changes in net assets, and cash flows for the year then ended, and the related notes to the consolidated financial statements.

Management's Responsibility for the Financial Statements

Management is responsible for the preparation and fair presentation of these financial statements in conformity 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 financial statements that are free of material misstatement, whether due to fraud or error.

Auditor's Responsibility

Our responsibility is to express an opinion on these financial statements based on our audit. We conducted our audit in accordance with auditing standards generally accepted in the United States and the standards applicable to financial audits contained in *Government Auditing Standards*, issued by the Comptroller General of the United States. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the 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 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 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 financial statements referred to above present fairly, in all material respects, the consolidated financial position of Vanderbilt University Medical Center as of June 30, 2018, and the consolidated results of its operations and its cash flows for the year then ended in conformity with U.S. generally accepted accounting principles.

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Report of Other Auditors on 2017 Financial Statements

The consolidated financial statements of Vanderbilt University Medical Center for the year ended June 30, 2017, were audited by other auditors who expressed an unmodified opinion on those statements on October 19, 2017.

Supplementary Information

Our audit was conducted for the purpose of forming an opinion on the financial statements as a whole. The schedule of expenditures of federal awards and state financial assistance, as required by Title 2 U.S. *Code of Federal Regulations* Part 200, *Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards* and the Audit Manual issued by the State of Tennessee Department of Audit, is presented for purposes of additional analysis and is not a required part of the 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 financial statements. The information has been subjected to the auditing procedures applied in the audit of the financial statements and certain additional procedures, including comparing and reconciling such information directly to the underlying accounting and other records used to prepare the financial statements or to the financial statements themselves, and other additional procedures in accordance with auditing standards generally accepted in the United States. In our opinion, the information is fairly stated, in all material respects, in relation to the financial statements as a whole.

Other Reporting Required by Government Auditing Standards

In accordance with *Government Auditing Standards*, we also have issued our report dated October 26, 2018, on our consideration of Vanderbilt University Medical Center'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 Vanderbilt University Medical Center'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 Vanderbilt University Medical Center's internal control over financial reporting and compliance.

Ernst & Young LLP

October 26, 2018

Vanderbilt University Medical Center
Consolidated Balance Sheets
June 30, 2018 and 2017

($ in thousands)	2018	2017
Assets		
Current assets:		
Cash and cash equivalents	$ 500,908	$ 520,857
Current investments	134,467	133,977
Patient accounts receivable, net of allowance for bad debts of $179.1 million and $130.5 million as of June 30, 2018 and 2017, respectively	474,385	374,686
Estimated receivables under third-party programs	-	12,642
Grants and contracts receivable, net	57,748	67,249
Inventories	72,636	67,478
Other current assets	85,843	73,076
Total current assets	1,325,987	1,249,965
Noncurrent investments	262,846	94,412
Noncurrent investments limited as to use	260,842	202,592
Property, plant, and equipment, net	1,306,639	1,219,768
Other noncurrent assets	35,877	34,593
Total assets	$ 3,192,191	$ 2,801,330
Liabilities and Net Assets		
Current liabilities:		
Current installments of long-term debt	$ 5,774	$ 5,753
Accounts payable and other accrued expenses	268,087	266,665
Estimated payables under third-party programs	72,947	37,072
Accrued compensation and benefits	197,945	194,739
Current portion of deferred revenue	37,303	39,353
Current portion of medical malpractice self-insurance reserves	16,558	17,161
Total current liabilities	598,614	560,743
Long-term debt, net of current installments	1,512,698	1,288,346
Fair value of interest rate exchange agreements	54,206	65,203
Noncurrent portion of medical malpractice self-insurance reserves	57,520	54,373
Noncurrent portion of deferred revenue	18,719	10,694
Other noncurrent liabilities	22,804	21,069
Total liabilities	2,264,561	2,000,428
Net assets:		
Unrestricted net assets controlled by Vanderbilt University Medical Center	807,481	708,088
Unrestricted net assets related to noncontrolling interests	5,724	5,891
Total unrestricted net assets	813,205	713,979
Temporarily restricted net assets	79,496	69,058
Permanently restricted net assets	34,929	17,865
Total net assets	927,630	800,902
Total liabilities and net assets	$ 3,192,191	$ 2,801,330

The accompanying notes are an integral part of these consolidated financial statements.

Vanderbilt University Medical Center
Consolidated Statements of Operations
Years Ended June 30, 2018 and 2017

($ in thousands)	2018	2017
Operating revenues		
Patient service revenue, net of contractual adjustments and discounts	$ 3,578,525	$ 3,444,438
Provision for bad debts	(135,748)	(109,119)
Patient service revenue, net	3,442,777	3,335,319
Academic and research revenue	495,306	421,776
Other operating revenue	148,316	146,473
Total operating revenues	4,086,399	3,903,568
Operating expenses		
Salaries, wages, and benefits	2,179,647	2,035,263
Supplies and drugs	770,459	699,200
Facilities and equipment	256,938	245,416
Services and other	659,455	605,302
Depreciation and amortization	105,654	91,443
Interest	58,078	48,482
Total operating expenses	4,030,231	3,725,106
Income from operations	56,168	178,462
Nonoperating revenues and expenses		
Income from investments	24,021	21,250
Gift income	11,945	9,770
Earnings of unconsolidated organizations	3,696	3,910
Unrealized gain on interest rate exchange agreements, net of cash settlements	6,379	18,845
Other nonoperating losses, net	-	(861)
Total nonoperating revenues and expenses	46,041	52,914
Excess of revenues over expenses	102,209	231,376
Excess of revenues over expenses attributable to noncontrolling interests	(4,068)	(4,883)
Excess of revenues over expenses attributable to VUMC	98,141	226,493
Other changes in unrestricted net assets		
Change in noncontrolling interest's net assets	(167)	364
Net asset reclassification	(89)	(22,234)
Plant contributions placed into service	1,292	-
Other changes	49	(65)
Total changes in unrestricted net assets	$ 99,226	$ 204,558

The accompanying notes are an integral part of these consolidated financial statements.

Vanderbilt University Medical Center
Consolidated Statements of Changes in Net Assets
Years Ended June 30, 2018 and 2017

($ in thousands)	2018	2017
Unrestricted net assets		
Unrestricted net assets at the beginning of the period	$ 713,979	$ 509,421
Excess of revenues over expenses	98,141	226,493
Change in noncontrolling interest's net assets	(167)	364
Net asset reclassification	(89)	(22,234)
Plant contributions placed into service	1,292	-
Other changes	49	(65)
Change in unrestricted net assets	99,226	204,558
Unrestricted net assets at the end of the period	$ 813,205	$ 713,979
Temporarily restricted net assets		
Temporarily restricted net assets at the beginning of the period	$ 69,058	$ 26,985
Contributions	17,817	27,681
Endowment appreciation	759	749
Net assets released from restrictions	(7,042)	(6,114)
Net asset reclassification	195	19,757
Plant contributions released from restrictions	(1,292)	-
Other changes	1	-
Change in temporarily restricted net assets	10,438	42,073
Temporarily restricted net assets at the end of the period	$ 79,496	$ 69,058
Permanently restricted net assets		
Permanently restricted net assets at the beginning of the period	$ 17,865	$ 6,769
Contributions	17,170	8,619
Net asset reclassification	(106)	2,477
Change in permanently restricted net assets	17,064	11,096
Permanently restricted net assets at the end of the period	$ 34,929	$ 17,865
Total net assets		
Beginning of the period	$ 800,902	$ 543,175
Change in total net assets	126,728	257,727
End of the period	$ 927,630	$ 800,902

The accompanying notes are an integral part of these consolidated financial statements.

Vanderbilt University Medical Center
Consolidated Statements of Cash Flows
Years Ended June 30, 2018 and 2017

($ in thousands)	2018	2017
Cash flows from operating activities		
Change in total net assets	$ 126,728	$ 257,727
Adjustments to reconcile change in total net assets to net cash provided by operating activities:		
Depreciation and amortization	105,654	91,443
Amortization of debt issuance costs, and original issue premium and discount	518	(902)
Provision for bad debts	135,748	109,119
(Gain) loss on disposal of assets	(7,686)	3,409
Undistributed equity in earnings of equity method affiliates	(1,807)	(1,156)
Net realized and unrealized gain on investments	(10,954)	(16,371)
Purchases of trading securities	(348,124)	(312,072)
Sales of trading securities	332,330	112,056
Change in split-interest trusts	(230)	(963)
Unrealized gain on interest rate exchange agreements	(10,997)	(24,333)
Restricted contributions for endowments and property, plant, and equipment	(24,326)	(17,991)
(Decrease) increase in cash due to changes in:		
Patient accounts receivable	(235,447)	(144,582)
Accounts payable and other accrued expenses	477	49,352
Other assets and other liabilities, net	58,538	539
Net cash provided by operating activities	120,422	105,275
Cash flows from investing activities		
Purchase of property, plant, and equipment	(198,562)	(158,729)
Purchases of long-term securities	(314,137)	(59,552)
Sales and maturities of long-term securities	155,141	52,237
Proceeds on sale of property, plant, and equipment	20,394	-
Change in restricted cash for property, plant, and equipment	(40,692)	(9,371)
Net cash used in investing activities	(377,856)	(175,415)
Cash flows from financing activities		
Proceeds from issuance of long-term debt	329,719	-
Debt issuance costs	(3,035)	-
Repayment of long-term debt	(108,100)	(4,583)
Principal payments under capital lease obligations	(1,191)	(552)
Change in bank overdrafts	-	(13,846)
Restricted contributions for endowments and property, plant, and equipment	24,326	17,991
Distributions to noncontrolling interests	(4,234)	(4,519)
Net cash provided by (used in) financing activities	237,485	(5,509)
Net change in cash and cash equivalents	(19,949)	(75,649)
Cash and cash equivalents		
Beginning of the period	520,857	596,506
End of the period	$ 500,908	$ 520,857

The accompanying notes are an integral part of these consolidated financial statements.

1. Description of Organization

Vanderbilt University Medical Center ("VUMC") is a Tennessee not-for-profit corporation incorporated in March 2015 to operate an academic medical center, including a comprehensive research, teaching, and patient care health system (the "Medical Center"). Until April 29, 2016, the Medical Center operated as a unit within Vanderbilt University ("the University" or "VU"), as a part of the University's administrative structure, with the same governing board, legal, financial, and other shared services.

VUMC began operations effective April 30, 2016, following the closing of the sale of the Medical Center by the University (the "Acquisition"). VUMC owns and operates three hospitals located on the main campus of the University in Nashville, Tennessee: Vanderbilt University Adult Hospital ("VUAH"), Monroe Carell Junior Children's Hospital at Vanderbilt ("MCJCHV"), and Vanderbilt Psychiatric Hospital ("VPH"). In addition, VUMC partially owns Vanderbilt Stallworth Rehabilitation Hospital ("VSRH"), also located on the main campus of the University, through a joint venture with HealthSouth Corp. in which VUMC holds a 50% interest, which includes a 1% interest held by Vanderbilt Health Services, LLC, ("VHS"), a VUMC wholly owned subsidiary. VUAH, MCJCHV, and VPH are licensed for 1,051 beds, and VSRH is licensed for 80 beds.

VUMC consists of two major operating divisions and an administrative overhead division. The operating divisions include the Clinical Enterprise and Academic Enterprise divisions. The administrative overhead division is referred to as Medical Center Administration ("MCA").

The Clinical Enterprise division includes the professional clinical practice revenues and related expenses of Vanderbilt Medical Group ("VMG"), and technical revenues and associated expenses for the operation of VUMC's hospitals and clinic facilities, including VUAH, MCJCHV, and VPH. The Clinical Enterprise also includes VHS.

- VUAH is a quaternary care teaching hospital licensed for 692 acute care and specialty beds. VUAH, a Level I trauma center, provides advanced patient care and serves as a key site for medical education and clinical research conducted by physician faculty. VUAH includes a comprehensive burn center, the Vanderbilt Transplant Center, the Vanderbilt Heart and Vascular Institute, and the Vanderbilt Ingram Cancer Center.

- MCJCHV is a pediatric quaternary care teaching hospital licensed for 129 acute and specialty beds, 42 pediatric intensive care beds, and 96 neonatal intensive care beds. MCJCHV is the region's only full-service pediatric hospital, with over 30 pediatric specialties. MCJCHV serves as a site for medical education and clinical research conducted by pediatric physician faculty, houses the only Level IV neonatal intensive care center and the only Level 1 pediatric trauma center within the region, and is a regional referral center for extracorporeal membrane oxygenation (heart and lung failure).

- VPH is a psychiatric hospital licensed for 92 beds and provides both inpatient and outpatient partial hospitalization psychiatric services to both adult and adolescent patients. Also, VPH provides psychiatric assessment services and neuromodulation procedures through electroconvulsive therapy and transcranial magnetic stimulation.

- VMG is the practice group of physicians and advanced practice nurses employed by VUMC, most of whom have faculty appointments from the University, who perform billable professional medical services. VMG is not a separate legal entity. VMG has a board which consists of the VUMC clinical service chiefs, who also serve as clinical department chairs. Under the oversight of VUMC executive leadership, VMG sets professional practice standards, bylaws, policies,

and procedures. VUMC bills for services rendered by the VMG clinicians in both inpatient and outpatient locations. Collected fees derive a component of each VMG clinician's compensation. VMG includes nationally recognized physicians whose expertise spans the spectrum from primary care to the most specialized quaternary discipline. The entire clinical faculty is "board certified" or eligible for board certification. All staff members are re-credentialed every two years by the National Committee for Quality Assurance standards. All specialties and subspecialties currently recognized by the various national specialty boards are represented on the clinical faculty.

- VHS serves as a holding company for 15 healthcare related subsidiaries and joint ventures owned with various entities, including, but not limited to, VSRH and the Vanderbilt Health Affiliated Network ("VHAN"). VHS operations primarily consist of community physician practices, walk-in and retail health clinics, imaging services, outpatient surgery centers, radiation oncology centers, a home health care agency, a home infusion and respiratory service, an affiliated health network, accountable care organizations, and a rehabilitation hospital. These subsidiaries include clinics managed in multiple outpatient locations throughout middle Tennessee and southwestern Kentucky.

- VUMC also has a holding company that includes four limited liability subsidiaries, which support various business-to-business health care activities in order to improve the quality, affordability, and availability of health care services. These subsidiaries include business focused on pharmacy, supply chain, and consulting services.

The Academic Enterprise division includes all clinically related research, research-support activities, and faculty endeavors supporting post graduate training programs. A significant funding source for VUMC's research has historically been the federal government. Federal funding is received from the Department of Health and Human Services, the National Institutes of Health, the Department of Defense, NASA, and other federal agencies. Sponsored research awards, including multiple-year grants and contracts from government sources, foundations, associations, and corporations, signify future research commitments. Also, core activities supporting research, including advanced computing and grant administration, are included in this division.

The terms "Company," "VUMC," "we," "our", or "us" as used herein and unless otherwise stated or indicated by context refer to Vanderbilt University Medical Center and its affiliates. The terms "facilities" or "hospitals" refer to entities owned and operated by VUMC and its affiliates, and the term "employees" refers to employees of VUMC and its affiliates.

VUMC operates on a fiscal year which ends on June 30. The term "Fiscal" preceding a year refers to a particular VUMC fiscal year.

2. Summary of Significant Accounting Policies

Basis of Presentation

The accompanying consolidated financial statements have been prepared on the accrual basis in accordance with accounting principles generally accepted in the U.S. ("GAAP"). Based on the existence or absence of donor-imposed restrictions, VUMC classifies resources into three categories: unrestricted, temporarily restricted, and permanently restricted net assets.

Principles of Consolidation
The consolidated financial statements include the accounts of VUMC and its wholly owned, majority-owned, and controlled organizations. Noncontrolling interests in less-than-wholly owned consolidated subsidiaries of VUMC are presented as a component of net assets to distinguish between the interests of VUMC and the interests of the noncontrolling owners. All material intercompany transactions and account balances among the various entities have been eliminated.

VUMC uses the equity method to account for its interests in unconsolidated partnerships, joint ventures, and limited liability entities over which it exercises significant influence. Investment carrying amounts are adjusted for VUMC's share of investee earnings or losses based on percentage of ownership. Distributions received from unconsolidated entities that represent returns on the investor's investment (i.e., dividends) are reported as cash flows from operating activities in the investor's statement of cash flows.

Use of Estimates
The preparation of consolidated financial statements in conformity with U.S. GAAP requires management to make estimates and assumptions that affect amounts reported in the consolidated financial statements and accompanying notes. These estimates affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the consolidated balance sheet and the reported amounts of revenues and expenses during the reporting period. Actual results ultimately could differ from those estimates.

Cash and Cash Equivalents
Cash and cash equivalents are liquid assets with minimal interest rate risk and maturities of three months or less when purchased. VUMC invests operating assets in a diversified manner. At times, VUMC may have cash and cash equivalents at a financial institution in excess of federally insured limits, and therefore, bear a risk of loss. VUMC maintains certain cash balances within the noncurrent investments limited as to use caption in the consolidated balance sheet which are not included in the cash and cash equivalents section.

Revenue Recognition—Healthcare Services
VUMC recognizes revenues from patient services in the period those services are provided and reports these revenues at the net realizable amount expected to be collected from patients or through the assignment or other entitlement to receive patients' benefits payable under patients' health insurance programs, plans, or policies. Amounts realized from patient services are generally less than standard billing charges, due to contractual agreements with third-party payors, state-mandated discounts, governmental programs that require reduced collection rates, or amounts which prove uncollectible. Services are provided before assessing ability to pay and, thus, provision for bad debts is a deduction from net patient service revenue.

In addition to patient payments, VUMC earns revenue and reimbursements from certain services provided under federal healthcare programs and other contracts with third-party payors. These compensation arrangements are complex programs which extend over multiple accounting periods and are subject to the interpretation of federal and state-specific reimbursement rates, new or changing legislation, and final cost report settlements. Estimated settlements under these programs are recorded in the period the related services are performed and are subsequently adjusted, as needed, based on new information.

VUMC receives periodic interim payments from Medicare in lieu of individual payments for patient claims processed by VUMC's fiscal intermediary. These payments are applied against claims processed, with the final settlement of amounts owed for a fiscal year included in the applicable Medicare cost report.

In evaluating the collectibility of accounts receivable, VUMC analyzes its history and identifies trends for each of its major revenue categories to estimate the appropriate allowance for bad debts and related provision. Management regularly reviews data about these major revenue categories in evaluating the sufficiency of the allowance for bad debts, taking into consideration recent write-off experience by payor category, payor agreement rate changes, and other factors. For third-party payors, the provision is determined by analyzing contractually due amounts from payors who are known to be having financial difficulties. For self-pay patients, which includes self-pay after insurance, the provision is based on an analysis of experience related to patients' payments. The difference between the standard rate charged (less contractual adjustments and discounts) and the amount collected (after reasonable collection efforts have been exhausted) is charged against the allowance for bad debts. VUMC follows established guidelines, Centers for Medicare & Medicaid Services ("CMS") regulations, and Internal Revenue Services ("IRS") Reg. §1.501(r)-6 for placing certain past-due patient balances with external collection agencies.

VUMC provides care to patients who meet the criteria under its financial assistance policy for no payment or at payment amounts less than its established charge rates. VUMC does not recognize the charges that qualify as charity care as revenue because VUMC does not pursue collection of these amounts.

Revenue Recognition— Academic and Research
VUMC receives funding through grants and contracts issued by departments and agencies of the U.S. government, industry, and other foundation sponsors who restrict the use of such funds to academic and research purposes. VUMC recognizes revenue from these grants and contracts upon the incurrence of allowable expenditures, as defined in the agreements governing that funding. VUMC recognizes facilities and administrative ("F&A") costs recovery as revenue when revenue is recognized on the associated grant or contract. This activity represents reimbursement, primarily from the federal government, of F&A costs on sponsored activities.

Grants and contracts receivable include amounts due from these sponsors of externally funded research. These amounts have been billed or are billable to the sponsor. These receivables are reported net of reserves for uncollectible accounts.

Deferred Revenue
The majority of deferred revenue relates to grants and contracts whereby certain grantors pay in advance of incurring eligible costs. In these cases, VUMC records the amount received in excess of reimbursable costs incurred as deferred revenue.

Gift Income and Pledges
VUMC recognizes unconditional promises to give cash and other assets, referred to as pledges, as gift income at fair value when the pledge is received. Conditional promises to give are recognized as pledges once the conditions are substantially met. Gifts received with donor stipulations limiting the use of the donated assets are reported as either temporarily or permanently restricted support, depending on the nature of the restriction. Donor-restricted contributions whose restrictions are met within the same year as received are reported as gift income in the accompanying consolidated statements of operations. Gift income is recognized when a donor restriction expires, that is, when a stipulated time restriction ends or purpose restriction is accomplished. Pledges are treated as unrestricted, temporarily restricted, or permanently restricted net assets depending on the donor instructions associated with the pledge. Gifts of cash or other assets that must be used to acquire long-lived assets are reported as temporarily restricted net assets until the assets are placed in service, at which point they are reclassified to unrestricted net assets.

Pledges receivable are reported net of allowances for uncollectible amounts based on an analysis of past collection experience and other judgmental factors. Pledges receivable are included in other current or other noncurrent assets in the consolidated balance sheet based on the expected timing of cash flows. VUMC discounts the noncurrent portion of pledges receivables at a rate commensurate with the scheduled timing of receipt. VUMC applied discount rates ranging from 0.5% to 1.5% to amounts outstanding as of June 30, 2018 and 2017.

Concentrations of Credit Risk
VUMC grants unsecured credit to its patients, primarily residing in Nashville, Tennessee and the surrounding areas of middle Tennessee, most of whom are insured under commercial, Medicare, or TennCare agreements. Medicare, Blue Cross Blue Shield ("BCBS"), and TennCare (which includes BCBS, United, and Amerigroup) represent VUMC's significant concentrations of credit risk from payors.

Inventories
VUMC reports inventories at the lower of cost or market, with cost being determined on the first-in, first-out method. Inventories consist primarily of medical supplies, surgical implants, and pharmaceuticals.

Investments
VUMC reports investments held at fair value on the consolidated balance sheets. VUMC records purchases and sales of securities on the trade dates, and realized gains and losses are determined based on the average historical cost of the securities sold. VUMC reports net receivables and payables arising from unsettled trades as a component of investments.

Property, Plant, and Equipment, Net
VUMC records purchases of property, plant, and equipment at cost and expenses repairs and maintenance costs as incurred. VUMC capitalizes interest cost incurred on borrowed funds during the period of construction of capital assets as a component of the cost of acquiring those assets. VUMC capitalizes donated assets at fair value on the date of donation.

Capitalized software for internal use is recorded during the application development stage. These costs include fees paid to third parties for direct costs of materials and services consumed in developing or obtaining the software; payroll related costs and capitalized interest costs. Costs for training and application maintenance in the post-implementation operation stage are expensed as incurred.

VUMC computes depreciation using the straight-line method over the estimated useful life of land improvements (3 to 18 years), buildings and leasehold improvements (2 to 37 years), and equipment (1 to 20 years). Equipment costs also include capitalized internal use software costs, which are expensed over the expected useful life, which is generally 1.5 to 12 years. VUMC assigns useful lives in accordance with American Hospital Association guidelines.

Software for internal use is amortized on a straight-line basis over its estimated useful life. In determining the estimated useful life, management considers the effects of obsolescence, technology, competition, other economic factors, and rapid changes that may be occurring in the development of software products, operating systems, and computer hardware. Amortization begins once the software is ready for its intended use, regardless of when the software is placed into service.

Impairment of Long-Lived Assets
VUMC reviews long-lived assets, such as property, plant, and equipment, for impairment whenever events or changes in circumstances indicate that the carrying amount of an asset may not be recoverable. VUMC measures the recoverability of assets to be held and used by comparing the carrying amount of an asset to estimated undiscounted future cash flows expected to be generated by the asset. If the carrying amount of an asset exceeds its estimated future cash flows, VUMC recognizes an impairment charge to the extent the carrying amount of the asset exceeds its fair value.

Conditional Asset Retirement Costs and Obligations
VUMC recognizes the estimated fair value of liabilities for existing legal obligations to perform certain activities, primarily asbestos removal, in connection with the retirement, disposal, or abandonment of assets. These liabilities are included in other noncurrent liabilities on the consolidated balance sheets and total $6.1 million and $6.0 million as of June 30, 2018 and 2017, respectively. VUMC measures these liabilities using estimated cash flows with an inflation rate applied of 3.0% as of June 30, 2018 and 2017. VUMC discounts those cash flow estimates at a credit-adjusted, risk-free rate, which ranged from 2.9% to 4.2% as of June 30, 2018 and 2017, and adjusts these liabilities for accretion costs and revisions in estimated cash flows.

Long-Term Debt
The carrying value of VUMC's debt is the par amount adjusted for the net unamortized amount of debt issuance costs, and bond premiums and discounts.

Interest Rate Exchange Agreements
VUMC reports interest rate exchange agreements at fair value, which is determined to be the present value of future net cash settlements that reflect market yields as of the measurement date and estimated amounts that VUMC would pay, or receive, to terminate the contracts as of the report date. VUMC considers current interest rates and creditworthiness of the interest rate exchange counterparties when estimating termination settlements.

Self-Insurance Reserves
VUMC elects to self-insure a portion of its medical malpractice, professional, and general liability coverage via an irrevocable self-insurance trust. The maximum annual self-insurance retention was $5.5 million per occurrence, up to $43.0 million in the aggregate for both Fiscal 2018 and 2017. Actuarial firms determine expected losses on an annual basis, at which time VUMC records medical malpractice, professional, and general liability expense within the limits of the program. These liabilities are classified as current or noncurrent based on the expected timing of cash flows and are measured at the net present value of those cash flows using a discount rate of 2.5% as of June 30, 2018 and 2017. For both Fiscal 2018 and 2017, VUMC obtained excess medical malpractice, professional, and general liability coverage from commercial insurance carriers for claims in excess of $5.5 million per occurrence, up to $125.0 million. These policies would also provide coverage up to $125.0 million if any claims in the aggregate exceed $43.0 million.

VUMC also elects to self-insure for employee health and workers' compensation expenses. Actuarial firms determine expected losses on an annual basis. The maximum retention for workers' compensation was $0.8 million per occurrence for both Fiscal 2018 and 2017. There is no stop loss insurance on health plan claims.

Income Taxes
VUMC is a tax-exempt organization as described in Section 501(c)(3) of the Internal Revenue Code (the "Code") and is generally exempt from federal income taxes under Section 501(a) of the Code.

The Tax Cuts and Jobs Act (the "Act") was enacted on December 22, 2017. The Act reduces the U.S. federal corporate tax rate from 35% to 21%, requires companies to pay a one-time transition tax on earnings of certain foreign subsidiaries that were previously tax deferred, and creates new taxes on certain foreign sourced earnings. For tax-exempt entities, the Act also requires organizations to categorize certain fringe benefit expenses as a source of unrelated business income, pay an excise tax on remuneration above certain thresholds that is paid to executives by the organization, and report income or loss from unrelated business activities on an activity-by-activity basis, among other provisions. At June 30, 2018, the Company has made a reasonable estimate of the tax effects of the enactment of the Act. Certain regulatory guidance provides for a measurement period of up to one year during which the accounting for the tax effects of the Act may be completed. The Company may record further adjustments in future periods upon obtaining, preparing, or analyzing additional information about facts and circumstances that existed as of the date of enactment that would have affected the income tax effects initially reported. The Company will continue to revise and refine the calculations as additional IRS guidance is issued.

Excess of Revenues Over Expenses
The consolidated statements of operations include excess of revenues over expenses as a performance indicator. Excess of revenues over expenses includes all changes in unrestricted net assets except for changes in noncontrolling interest holders' share of consolidated entities, reclassifications of net assets from the prior period presentation, and certain other adjustments.

Conforming Reclassifications
Certain amounts in the Fiscal 2017 consolidated balance sheet and statement of operations have been reclassified to conform to their Fiscal 2018 presentation.

Recent Accounting Pronouncements
Periodically, the Financial Accounting Standards Board ("FASB") issues Accounting Standards Updates ("ASUs") that may impact the recognition, measurement, and presentation of balances and activity in VUMC's consolidated financial statements or the disclosures contained within those statements. As part of preparing financial statements, VUMC evaluates the effects of the ASUs and applies the updated guidance within the required effective dates.

- In May 2014, the FASB issued the terms ASU 2014-09, which is a principles-based standard on revenue recognition. Companies across all industries will use a five-step model to recognize revenue from customer contracts. The new standard, which replaces nearly all existing GAAP revenue recognition guidance, will require significant management judgment in addition to changing the way many companies recognize revenue in their financial statements. The FASB subsequently issued ASU 2016-08, *Revenue from Contracts with Customers (Topic 606): Principal versus Agent Considerations,* ASU 2016-10, *Revenue from Contracts with Customers (Topic 606): Identifying Performance Obligations and Licensing*, and ASU 2016-12, *Narrow-Scope Improvements and Practical Expedients,* to address issues arising from implementation of the new revenue recognition standard. For VUMC, the above ASUs are effective for Fiscal 2019. VUMC believes the most significant impact of adopting the new standard will be to the presentation of our consolidated statement of operations where the provision for bad debts will be recorded as a direct reduction to revenues and will not be presented as a separate line item. We expect to adopt the new standard using the full retrospective application.

- In February 2016, the FASB issued ASU 2016-02, *Leases*, which requires lessees to recognize assets and liabilities for most leases. ASU 2016-02's transition provisions will be applied to the most recent period presented in the financial statements. For VUMC, the amendments in ASU

2016-02 are effective July 1, 2019, although early adoption is permitted. VUMC expects the primary effect of adopting the new standard to be a requirement to record assets and offsetting obligations for current operating leases.

- In August 2016, the FASB issued ASU 2016-14, *Presentation of Financial Statements for Not-for-Profit Entities,* which, among other things, replaces the existing three-category classification of net assets (i.e., unrestricted, temporarily restricted, and permanently restricted) with a model that combines temporarily restricted and permanently restricted into a single category called "net assets with donor restrictions." Differences in the nature of donor restrictions will be disclosed in the notes, with an emphasis on how and when the resources can be used. ASU 2016-14 also provides guidance for classifying deficiencies in endowment funds, accounting for the lapsing of restrictions on gifts to acquire property, plant, and equipment, and providing information about how the nature of expenses relates to programs and supporting activities. For VUMC, ASU 2016-14 is effective for Fiscal 2019. ASU 2016-14's requirements must be applied retrospectively; however, entities can elect not to provide certain comparative disclosures in the year of adoption.

3. Related Parties

On April 29, 2016, VUMC acquired the assets, liabilities, rights, and obligations of the clinical enterprise, postgraduate medical training programs, and clinically related research of the University's owned and operated Medical Center "the Acquisition". VUMC is a 501(c)(3) not-for-profit corporation, governed by a separate and autonomous board apart from the governance of VU; VUMC is responsible for its debt and liabilities, separate and apart from the University.

The assets acquired and liabilities assumed from the Acquisition were detailed in a Master Transfer and Separation Agreement ("MTSA"). In addition to the explanation of the transaction details pertaining to the Medical Center assets and liabilities, the MTSA contains the framework for the ongoing economic relationship between VUMC and the University. The relationship is memorialized in the form of an Academic Affiliation Agreement ("AAA"), a Trademark License Agreement ("TMLA"), a Ground Lease, and a Reciprocal Master Services Agreement ("MSA"). The agreements are described below.

- The AAA outlines the ongoing academic, research, and clinical affiliation between the University and VUMC for all of the University's degree-granting, certificate, and research programs. The AAA allocates responsibility between the University and VUMC for jointly administered research and academic programs and is an exclusive agreement between VUMC and VU requiring VUMC to be organized, governed, and operated in a manner that supports VU's academic and research mission. The agreement provides that VU will be the exclusive academic affiliate of VUMC, and VUMC will be the exclusive clinical affiliate of VU.

  The AAA requires VUMC to pay VU an annual fee in equal monthly payments adjusted annually for inflation based upon the Biomedical Research and Development Price Index ("BRDPI") in perpetuity under certain mutually agreed-upon termination or default clauses. During Fiscal 2018 and 2017, VUMC recorded operating expenses totaling $73.1 million and $71.5 million, respectively, in connection with fees due under the AAA.

  The AAA required a one-time $12.0 million commitment to fund trans-institutional programs with the University. VUMC paid this commitment in June 2017. This commitment was recorded as additional consideration in the Acquisition.

- Under the TMLA, the University grants, subject to certain consents and approvals, a perpetual license to use various University-owned licensed marks in connection with VUMC's fundamental activities after the Acquisition date. The licensed marks, which VUMC will continue to use as its primary brands, include virtually all those currently in use by VUMC. This agreement requires VUMC to pay VU a monthly royalty payment equal to 1.0% of all operating revenues of VUMC and a percentage of net income from operations (5% in Fiscal 2018, 10% in Fiscal 2019, and 15% in Fiscal 2020 and beyond). Also, VUMC is required to pay VU, in equal monthly installments, an annual base fee, which increases 3% annually, reduced by the amount of principal payments made under the subordinate note payable to VU discussed in Note 11. Long-Term Debt (the "Fixed TMLA Royalty Payment"). The payments related to this base fee, inclusive of the principal payments made under the subordinate note, were approximately $63.7 million in Fiscal 2018. This agreement is in force in perpetuity under certain mutually agreed-upon termination or default clauses. During Fiscal 2018 and 2017, VUMC recorded operating expenses totaling $98.0 million and $96.0 million, respectively, in connection with fees due under the TMLA.

- The Ground Lease is an agreement between VU and VUMC that allows VUMC to use the land on which VUMC's campus and related buildings are located. The initial term of the Ground Lease ends June 30, 2114, with the option to extend the lease for two additional terms of up to 50 to 99 years each with agreement between VU and VUMC. The lease covers 1.7 million square feet or 38.75 acres of space, payable monthly and CPI adjusted annually. During Fiscal 2018 and 2017, VUMC recorded operating expenses totaling $18.5 million and $18.1 million, respectively, in connection with fees due under the Ground Lease.

- The University and VUMC provide services to one another for agreed-upon consideration as outlined in the MSA. VU provides services to VUMC, such as information technology infrastructure support, utilities, and law enforcement staffing. VUMC provides various operational services for the University, such as a student health clinic and animal care. Additionally, the MSA encompasses an Employee Matters Agreement ("EMA") and specific Employee Service Agreements ("ESAs"). The EMA and ESAs govern employee transitions and ongoing sharing between VU and VUMC in various capacities, such as research, teaching, clinical, and other administrative services. Services under the MSA can be terminated by either party subject to predetermined cancellation notification periods. In connection with the MSA, during Fiscal 2018 and 2017, VUMC recognized revenue totaling $50.9 million and $50.8 million, respectively, and recorded operating expenses totaling $124.2 million and $121.3 million, respectively.

- Also, as part of the Acquisition, VUMC issued to VU a $100.0 million subordinate promissory note payable, which is further described in Note 11. Long-Term Debt, with a balance of $89.6 million as of June 30, 2018, and $94.6 million as of June 30, 2017. During Fiscal 2018 and 2017, VUMC recorded interest expense totaling $2.7 million and $3.1 million, respectively, associated with this subordinate promissory note payable to VU.

The impact of these related-party agreements in the consolidated statements of operations during Fiscal 2018 and 2017 is as follows:

($ in thousands)	2018	2017
Academic and research revenue	$ 12,239	$ 11,919
Other operating revenue	38,647	38,928
Total operating revenues	$ 50,886	$ 50,847
Operating expenses		
Salaries, wages, and benefits	$ 6,973	$ 700
Supplies and drugs	-	338
Facilities and equipment	57,385	53,989
Services and other	249,482	251,884
Interest	2,743	3,148
Total operating expenses	$ 316,583	$ 310,059

Other current assets include amounts receivable from VU, which totaled $7.0 million as of June 30, 2018, and $5.8 million as of June 30, 2017. Accounts payable and other accrued expenses include amounts payable to VU, which totaled $31.8 million as of June 30, 2018, and $30.0 million as of June 30, 2017.

In the normal course of business, members of VUMC's Board of Directors or VUMC employees may be directly or indirectly associated with companies engaged in business activities with VUMC. VUMC has a written conflict of interest policy that requires, among other things, that members of the VUMC community (including trustees) may not review, approve, or administratively control contracts or business relationships when (i) the contract or business relationship is between VUMC and a business in which the individual or a family member has a material financial interest, or (ii) the individual or a family member is an employee of the business and is directly involved with activities pertaining to VUMC.

Furthermore, VUMC's conflict of interest policy extends beyond the foregoing business activities in that disclosure is required for any situation in which an applicable individual's financial, professional, or other personal activities may directly or indirectly affect, or have the appearance of affecting, an individual's professional judgment in exercising any VUMC duty or responsibility, including the conduct or reporting of research.

The policy extends to all members of the VUMC community (including trustees, faculty, staff, and their immediate family members). Each applicable person is required to certify compliance with the conflict of interest policy on an annual basis. This certification includes specifically disclosing whether VUMC conducts business with an entity in which he or she (or an immediate family member) has a material financial interest, as well as any other situation that could appear to present a conflict with VUMC's best interests.

When situations exist relative to the conflict of interest policy, VUMC takes active measures to appropriately manage the actual or perceived conflict in the best interests of VUMC, including periodic reporting of measures taken to the Audit Committee of the Board of Directors.

4. Patient Service Revenue, Patient Accounts Receivable, and Estimated Third-Party Settlements

The sources of patient service revenues, net, for Fiscal 2018 and 2017 are as follows:

	2018	2017
Commercial/managed care	63.4 %	63.5 %
Medicare/Managed Medicare	23.0	22.8
TennCare/Medicaid	12.4	12.2
Uninsured (self-pay)	1.2	1.5
	100.0 %	100.0 %

Patient accounts receivable, net of related contractual adjustments, discounts, and bad debt allowances, comprise amounts due from the following sources as of June 30, 2018 and 2017:

($ in thousands)	2018	2017
Medicare	$ 71,405	$ 56,286
TennCare/Medicaid	77,158	54,621
Blue Cross	95,986	76,692
Other third-party payors, primarily commercial carriers	174,397	147,467
Patient responsibility[(1)]	55,439	39,620
Patient accounts receivable, net	$ 474,385	$ 374,686

(1) Includes self-pay after insurance.

Estimated third-party settlements by major payor category as of June 30, 2018 and 2017, are as follows:

($ in thousands)	2018	2017
Receivables under third-party programs		
Tricare/Champus[(1)]	$ 8,875	$ 4,712
Medicare[(1)]	-	7,930
Total receivables under third-party programs	$ 8,875	$ 12,642
Payables under third-party programs		
TennCare/Medicaid	$ 53,162	$ 37,072
Medicare[(1)]	28,660	-
Total payables under third-party programs	$ 81,822	$ 37,072

(1) These two federal healthcare programs are combined for presentation purposes on the face of the consolidated balance sheets and are reflected as an obligation in Fiscal 2018 and an asset in Fiscal 2017.

Certain contracts require pay for performance or episode of care settlements whereby VUMC receives additional payment or pays a penalty based on its ability to achieve certain clinical measures or manage the cost of care for patients within various thresholds. VUMC estimates and accrues these adjustments in the period the related services are rendered and adjusts these

estimates in future periods as settlements are finalized. The aggregate liability associated with pay for performance and episode of care settlements at June 30, 2018 and 2017, was $0.9 million and $1.7 million, respectively, with the ultimate resolution of such financial arrangements not expected to have a material impact on the operating results of VUMC.

Medicare
Amounts received under Medicare are subject to review and final determination by program intermediaries or their agents. Final settlements have been reached for program periods ended June 30, 2011. Final settlements have not been reached for subsequent years due to audit delays experienced with the Medicare Administrative Contractor, and thus, those periods remain subject to audit by program representatives. VUMC records provisions in the consolidated financial statements for the effects of estimated final settlements. The receivable and payable above are presented net of these provisions.

TennCare
TennCare is a Medicaid managed care program implemented by the state of Tennessee to provide healthcare coverage to those patients eligible for Medicaid through the Federal 1115 Waiver Program. VUMC contracts with each of the three TennCare managed care organizations ("MCOs"), which offer health maintenance organization ("HMO") and Medicare Special Needs Products for Dual Eligible Enrollees. VUMC receives inpatient reimbursement through payments that are primarily based on the Medicare severity diagnostic related group system ("MS-DRG") for these plans. VUMC receives outpatient payments generally based on an ambulatory payment classification system ("APC"), and/or a payor-developed fee schedule.

In accordance with the Tennessee Hospital Assessment Act, VUMC receives a payment of a portion of its unreimbursed TennCare costs based upon VUMC's share of uninsured TennCare costs for all of the covered hospitals.

There is no assurance that this program will be continued or will not be materially modified in the future. In Fiscal 2018 and 2017, patient service revenue, net, includes the following supplemental amounts from TennCare:

($ in thousands)	**2018**	**2017**
Essential access	$ 14,609	$ 13,731
Disproportionate share	11,511	11,078
Trauma fund	1,900	1,798
Graduate medical education	14,158	14,117
Provision for disproportionate share audit	(11,511)	(27,593)
Total supplemental TennCare revenue, net of audit provision	$ 30,667	$ 13,131

5. Charity Care Assistance, Community Benefits, and Other Unrecovered Costs

VUMC maintains a policy which sets forth the criteria under which health care services are provided to patients who have minimal financial resources to pay for medical care. Additionally, VUMC provides other services that benefit the economically disadvantaged for which little or no payment is expected.

Charity care is determined by examining patient and family income relative to the federal poverty guidelines. VUMC provides additional discounts based on the income level of the patient household using a sliding scale for those patients with a major catastrophic medical event not qualifying for full charity assistance. Tennessee law mandates that all uninsured patients receive a discount from billed charges for medically necessary services. These amounts are classified as charity care if the patient meets charity care criteria, for which no revenue is recorded, or as a discount, and included as a part of discounts and contractual adjustments.

VUMC maintains records to identify and monitor the level of charity care provided, and these records include gross charges and patient deductibles, coinsurance and copayments foregone for services furnished under its charity care policy, and the estimated cost of those services. VUMC calculates a ratio of total costs to gross charges and then multiplies the ratio by foregone charity care charges in determining the estimated cost of charity care. The gross amount of foregone charity care revenues in Fiscal 2018 and 2017 total $323.9 million and $261.1 million, respectively. The estimated cost of providing care to charity patients in Fiscal 2018 and 2017 totals $89.9 million and $70.8 million, respectively.

In addition to the charity care services described above, TennCare/Medicaid and state indigent programs do not cover the full cost of providing care to beneficiaries of those programs. As a result, in addition to direct charity care costs, VUMC provided services related to TennCare/Medicaid and state indigent programs and was reimbursed substantially below the cost of rendering such services. VUMC also provides public health education and training for new health professionals and provides, without charge, services to the community at large for many patients with special needs.

6. Academic and Research Revenue, and Grants and Contracts Receivable, Net

Academic and research revenue comprises the following for Fiscal 2018 and 2017:

($ in thousands)	2018	2017
Grants and contracts revenue		
Federally funded	$ 288,535	$ 239,926
Non-federally funded	102,239	93,663
	390,774	333,589
Facilities and administrative costs recovery	104,532	88,187
Academic and research revenue	$ 495,306	$ 421,776

Grants and contracts receivable comprises the following as of June 30, 2018 and 2017:

($ in thousands)	2018	2017
Federally funded	$ 29,500	$ 31,603
Non-federally funded	28,498	37,192
	57,998	68,795
Allowance for bad debts	(250)	(1,546)
Total grants and contracts receivable, net	$ 57,748	$ 67,249

7. Pledges Receivable, Net

Pledges receivable, net of applied discounts and allowance for uncollectible pledges, as of June 30, 2018 and 2017, were as follows:

($ in thousands)	2018	2017
Amounts due		
Within one year	$ 9,569	$ 7,022
In one to five years	11,141	12,417
Total pledges receivable	20,710	19,439
Unamortized discount	(453)	(449)
	20,257	18,990
Allowance for uncollectible pledges	(2,068)	(1,934)
Net pledges receivable	$ 18,189	$ 17,056
Net pledges receivable classified as		
Current	$ 8,070	$ 5,785
Noncurrent	10,119	11,271
	$ 18,189	$ 17,056
Net pledges receivable by asset class		
Temporarily restricted	$ 14,286	$ 14,580
Permanently restricted	3,903	2,476
	$ 18,189	$ 17,056

In addition to pledges reported as pledges receivable, VUMC had cumulative bequest intentions and conditional promises to give totaling $58.1 million as of June 30, 2018, and $43.0 million as of June 30, 2017. Due to their conditional nature, VUMC does not recognize intentions to give as assets.

8. Other Relevant Financial Information

Other current assets comprise the following as of June 30, 2018 and 2017:

($ in thousands)	2018	2017
Prepaid expenses	$ 29,263	$ 21,928
Other receivables	29,543	27,610
Amounts due from VU (see Note 3.Related Parties)	7,038	5,814
Current pledges receivable, net (see Note 7.Pledges Receivable, Net)	8,070	5,785
Expected recoveries from commercial insurance excess coverage	5,457	4,028
Other	6,472	7,911
Total other current assets	$ 85,843	$ 73,076

Other noncurrent assets comprise the following as of June 30, 2018 and 2017:

($ in thousands)	2018	2017
Equity in unconsolidated organizations	$ 21,822	$ 20,184
Noncurrent pledges receivable (see Note 7.Pledges Receivable, Net)	10,119	11,271
Other	3,936	3,138
Total other noncurrent assets	$ 35,877	$ 34,593

Other operating revenue comprises the following for Fiscal 2018 and 2017:

($ in thousands)	2018	2017
Amounts recognized under MSA with VU (see Note 3. Related Parties)	$ 38,647	$ 38,928
Clinical contracts	26,527	25,304
VHS other revenue	18,168	14,514
Medical services provided during air transports	10,839	10,561
Nonclinical contracts	7,631	6,326
Resident and house staff rotations	6,972	9,148
Parking fees	6,967	5,936
Cafeteria	6,191	5,557
Other	26,374	30,199
Total other operating revenue	$ 148,316	$ 146,473

9. Investments

VUMC investments are made up of current investments, noncurrent investments, and noncurrent investments limited as to use on the face of the consolidated balance sheets. VUMC investments include assets limited as to use related to the following specified purposes as of June 30, 2018 and 2017:

($ in thousands)	2018	2017
Self-insured malpractice program	$ 66,595	$ 69,849
Internally designated	87,904	85,865
Donor-designated gifts for capital assets	38,404	31,248
Designated bond proceeds	33,536	-
Donor endowments	26,826	8,283
Split-interest trusts	7,577	7,347
	$ 260,842	$ 202,592

Endowment-related assets include both donor-restricted endowment funds, included in donor endowments, and board-designated institutional funds, included in internally designated. VUMC's endowment does not include gift annuities, interests in trusts held by others, contributions pending donor designation, or contributions receivable.

The Board of Directors' interpretation of its fiduciary responsibilities for donor-restricted endowments under the Uniform Prudent Management of Institutional Funds Act ("UPMIFA") requirements is to preserve intergenerational equity, barring the existence of any donor-specific provisions. Under this broad guideline, future endowment beneficiaries should receive at least the same level of real economic support as the current generation. The overarching objective is to preserve and enhance the real (inflation-adjusted) purchasing power of the endowment in perpetuity. VUMC invests assets to provide a relatively predictable and stable stream of earnings to meet spending needs and attain long-term return objectives without the assumption of undue risks.

Investments were as follows as of June 30, 2018 and 2017:

($ in thousands)	2018	2017
Corporate bonds	$ 122,639	$ 119,045
Equity mutual funds	135,885	112,704
Cash and cash equivalents	75,972	32,569
Split-interest trusts	7,577	7,347
Hedged equity mutual funds	41,275	14,759
Fixed income mutual funds	97,946	38,211
Certificates of deposit	48,243	38,657
Asset-backed securities	33,547	21,779
Real estate mutual funds	14,098	16,206
Commercial paper	10,284	11,609
Government bonds	1,899	9,097
Hedged debt mutual funds	63,295	5,178
Commodities and managed futures mutual funds	5,495	3,820
Total investments, at fair value	$ 658,155	$ 430,981

Investment returns comprise the following elements for Fiscal 2018 and 2017:

($ in thousands)	2018	2017
Interest and dividend income	$ 15,991	$ 8,417
Net realized gains on sales of securities	14,688	3,493
Realized investment gains, before fees	30,679	11,910
Unrealized investment gains and (losses), net	(3,759)	12,878
Total investment returns before fees	26,920	24,788
Investment manager and trustee fees and other	(2,899)	(3,538)
Total income from investments, net	$ 24,021	$ 21,250

VUMC has exposure to risks, including liquidity, interest rate, counterparty, basis, regulatory, market, and credit risks, for marketable securities. Due to the level of risk exposure, it is possible that material near-term valuation changes for investment securities may occur.

VUMC manages all investments, including endowments, as an investment pool.

10. Property, Plant, and Equipment, Net

Property, plant, and equipment comprise the following as of June 30, 2018 and 2017:

($ in thousands)	2018	2017
Land and land improvements	$ 20,132	$ 27,762
Buildings and improvements	971,393	893,728
Equipment and software	391,745	205,357
Construction in progress	131,838	196,828
Property, plant, and equipment at cost	1,515,108	1,323,675
Accumulated depreciation and amortization	(208,469)	(103,907)
Property, plant, and equipment, net	$ 1,306,639	$ 1,219,768

As part of the MTSA, VUMC acquired land and land improvements and buildings and improvements which are not allowed to be repurposed without the express consent of VU.

Property, plant, and equipment balances above include the following amounts related to capitalized internal use software:

($ in thousands)	2018	2017
Equipment and software	$ 150,568	$ 6,287
Construction in progress[(1)]	1,137	92,478
	151,705	98,765
Accumulated amortization	(12,019)	(2,230)
Internal use software, carrying value	$ 139,686	$ 96,535

[(1)] As of June 30, 2018 and 2017, construction in progress includes $0.2 million and $24.9 million, respectively, of internal costs, primarily payroll and payroll-related costs, for employees directly associated with and who devoted time to internal use software.

As of June 30, 2018 and 2017, internal use software capitalized includes $144.3 million and $92.5 million, respectively, of costs related to the implementation of an integrated electronic health record and revenue cycle system. The system went live in November 2017. These costs are amortized over a 12-year life. In addition to internal use software, VUMC has capitalized $21.9 million of hardware costs related to this project.

During Fiscal 2018, VUMC continued the children's hospital expansion, as well as the adult bed expansion and clinical relocation, which are included in buildings and improvements and construction in progress. The children's hospital expansion is expected to be completed in Fiscal 2019, and the adult bed expansion is a phased project, which is also expected to be completed in Fiscal 2019.

Depreciation and amortization comprised the following amounts in Fiscal 2018 and 2017:

($ in thousands)	2018	2017
Depreciation of tangible assets	$ 87,538	$ 82,836
Amortization of capital leases, leasehold improvements, and internal use software	18,116	8,607
Total depreciation and amortization	$ 105,654	$ 91,443

In Fiscal 2018 and 2017, VUMC capitalized interest of $2.0 million and $1.1 million, respectively, related to long-term capital projects, primarily internal use software costs, the children's hospital expansion, and the adult bed expansion. As of June 30, 2018 and 2017, there were $21.5 million and $20.7 million, respectively, of capital expenditures incurred but not yet paid. These costs are included in accounts payable and other accrued expenses on the consolidated balance sheets.

11. Long-Term Debt

Long-term debt comprises the following as of June 30, 2018 and 2017:

($ in thousands)	2018 Carrying Amount	2018 Effective Interest Rate [2]	2017 Carrying Amount	2017 Effective Interest Rate [2]
Series debt				
Fixed-rate debt				
Series 2016A	$ 476,930	4.1 %	$ 476,930	4.1 %
Series 2016B	300,000	4.1 %	300,000	4.1 %
Series 2017A	121,270	4.2 %	-	-
Series 2017 Taxable	100,000	4.2 %	-	-
Total fixed-rate debt	998,200	4.1 %	776,930	4.1 %
Variable-rate debt				
Series 2016C	-	-	50,000	2.2 %
Series 2016D	100,000	4.1 %	100,000	3.3 %
Series 2016E	128,070	3.3 %	128,070	3.2 %
Series 2016F	21,900	2.5 %	75,000	3.3 %
Series 2017B	50,000	2.7 %	-	-
Series 2018 Tax-exempt	53,385	2.6 %	-	-
Total variable-rate debt	353,355	3.3 %	353,070	3.1 %
Total series debt	1,351,555		1,130,000	
Other long-term debt				
Note payable to VU	89,583	3.2 %	94,583	3.2 %
Product financing arrangement	28,929	3.7 %	22,273	4.0 %
Capital leases	1,156	4.3 %	1,448	4.5 %
Subtotal[1]	1,471,223	3.9 %	1,248,304	3.8 %
Net unamortized premiums	60,521		57,467	
Net unamortized issuance costs	(13,272)		(11,672)	
Total long-term debt	1,518,472		1,294,099	
Current portion	(5,774)		(5,753)	
Long-term debt, net	$ 1,512,698		$ 1,288,346	

[1] The effective interest rate, 3.9% as of June 30, 2018, and 3.8% as of June 30, 2017, is presented exclusive of interest rate exchange agreements discussed in Note 12. Interest Rate Exchange Agreements. Inclusive of these agreements, the overall portfolio effective interest rate was 4.2%.

[2] The effective interest rate for each debt instrument is calculated by dividing each instrument's interest expense by the weighted average debt outstanding, and where applicable, interest expense is reduced by premium amortization and increased by original issue discount amortization. Interest rates per the agreements are detailed in the accompanying notes.

On April 29, 2016, VUMC issued the Series 2016 A, B, C, D, E, and F bonds ("2016 Series Debt") and notes aggregating $1.3 billion of proceeds for the purpose of financing the Medical Center Acquisition and paying a portion of the costs of issuance associated with the 2016 Series Debt.

The bonds and notes comprising the 2016 Series Debt were issued by the Health and Educational Facilities Board of The Metropolitan Government of Nashville and Davidson County, Tennessee ("HEFB"). As a conduit issuer, the HEFB loaned the debt proceeds to VUMC. VUMC's debt service requirements under these loan agreements coincide with required debt service of the actual HEFB bonds.

- The Series 2016A tax-exempt fixed-rate revenue bonds were issued in the par amount of $476.9 million and include an original issue premium of $59.6 million. The Series 2016A bonds have a final maturity date of July 1, 2046, and can be optionally redeemed at par on or after July 1, 2026. The 2016A bonds were structured as serial bonds with maturities from Fiscal 2030 through 2032, as well as three term bonds maturing Fiscal 2036 through 2047, which are subject to mandatory sinking fund redemption in lots. The Series 2016A bonds bear interest at 5% per annum and pay interest semiannually on July 1 and January 1.

- The Series 2016B taxable fixed-rate revenue bonds were issued in the par amount of $300.0 million, bearing interest at 4.1% per annum. Interest is paid semiannually on July 1 and January 1, and has a bullet maturity of July 1, 2026. VUMC is entitled, at its option, to redeem all or a portion of the Series 2016B bonds before April 1, 2026, at a make-whole redemption price, which equals the greater of (i) 100% of the remaining outstanding principal and (ii) the net present value of the remaining scheduled principal and interest payments to the original maturity date, using a discount rate of 35 basis points above rates for U.S. Treasury securities with comparable maturities.

- The Series 2016C taxable variable-rate revenue bonds ("R-FLOATs") were issued in the par amount of $50.0 million and bear interest initially at a fixed spread to weekly LIBOR of 1.6%. During Fiscal 2018, VUMC issued the Series 2017B taxable revenue bonds and used the proceeds to extinguish the Series 2016C R-FLOATs, discussed further below.

- The Series 2016D taxable variable-rate revenue notes ("floating rate notes") were issued in the par amount of $100.0 million and bear interest initially at a fixed spread to one-month LIBOR of 2.5% through the initial mandatory tender date of July 1, 2021, and a final maturity of July 1, 2046. Beginning six months prior to the mandatory tender date of July 1, 2021, the bonds have an optional redemption feature. If the Series 2016D bonds are successfully remarketed at the mandatory tender date, they are subject to mandatory redemption in lots commencing on July 1, 2021, and each July thereafter until final maturity.

- The Series 2016E taxable term loan revenue notes were issued in the par amount of $128.1 million and were placed privately with a bank. The notes bear interest in a variable-rate mode at a fixed spread to one-month LIBOR of 2.4% through the initial mandatory tender date of July 1, 2022, and a final maturity of July 1, 2046. During Fiscal 2018, VUMC renegotiated the interest to a variable-rate mode at a fixed spread to one-month LIBOR of 1.8%. In addition to optional redemption of all or a portion of the notes at any time, subject to notice, the Series 2016E notes are subject to principal amortization commencing on July 1, 2022, as defined in the Series 2016E loan agreement between VUMC and the lender.

- The Series 2016F taxable variable-rate revenue bonds were issued in the par amount of $75.0 million and were placed privately with a bank. The bonds bear interest in a variable-rate mode at a fixed spread to one-month LIBOR of 2.5% through the initial mandatory tender date

of July 1, 2022. During Fiscal 2018, $53.1 million of the Series 2016F bonds were extinguished using proceeds from the 2018 tax-exempt fixed-rate revenue bonds, discussed further below. The renegotiated interest rate on the remaining $21.9 million of principal outstanding is a variable-rate mode at a fixed spread to one-month LIBOR of 1.2%. The remaining principal has a mandatory tender date of July 1, 2024. Prior to that, VUMC must pay $2.1 million of principal on July 1, 2022, and $2.2 million of principal on July 1, 2023. The remaining $17.6 million of principal is due on July 1, 2024.

Each of the bonds and notes comprising the 2016, 2017, and 2018 Series Debt represent separate obligations under a Master Trust Indenture ("MTI") structure. The MTI provides the flexibility for multiple parties to participate in debt issuances as part of an obligated group; presently, VUMC has no other third-party members participating in the obligated group. All debt issued under the MTI is a general obligation of the obligated group. Under the provisions of the Leasehold Deed of Trust, Security Agreement, Assignment of Rents and Leases, and Fixture Filing (the "Security Agreement") within the MTI, gross receivables of the obligated group are pledged as collateral. Additionally, the Security Agreement established a mortgage lien on (i) the leasehold interest of the land subject to the Ground Lease; (ii) the buildings, structures, improvements, and fixtures now or hereafter located on the land subject to the Ground Lease; and (iii) certain other collateral.

On July 26, 2017, the Series 2017A Tax-Exempt and Series 2017 Taxable Corporate Bonds were issued, and on August 1, 2017, the Series 2017B Taxable Revenue Bonds was issued ("2017 Series Debt"), aggregating $271.3 million of proceeds for the purpose of refinancing existing debt, funding capital projects related to the children's bed expansion and the adult bed expansion/clinical relocation, which is a phased project, and paying a portion of the costs of issuance associated with the 2017 Series Debt.

The Series 2017A Tax-Exempt Revenue Bonds and the Series 2017B Taxable Term Loan Revenue Note were issued by the HEFB. The Series 2017 Taxable Bonds were a corporate issue with VUMC as the issuer.

- The Series 2017A tax-exempt fixed-rate revenue bonds were issued in the par amount of $121.3 million and include an original issue premium of $5.1 million. The final maturity date is July 1, 2048, and optional redemption at par can occur on or after July 1, 2027. The Series 2017A bonds bear interest at 4.4% per annum and pay interest semiannually on July 1 and January 1.

- The Series 2017 taxable fixed-rate corporate bonds were issued in the par amount of $100.0 million, bearing interest at 4.2% per annum. Interest is paid semiannually on July 1 and January 1, and the bonds have a final maturity date of July 1, 2037. There is a bullet payable beginning July 1, 2026, that allows VUMC to call the debt.

- The Series 2017B taxable variable-rate term loan notes were issued in the par amount of $50 million and placed privately with a bank. The notes bear interest initially at a fixed-spread to one-month LIBOR of 1.2%. The notes have a final maturity date of July 1, 2046, and a tender date of August 1, 2024. Proceeds from the issuance of the Series 2017B notes were used to extinguish the Series 2016C R-FLOATs, initially issued on April 29, 2016.

On April 20, 2018, the Series 2018 Tax-Exempt Revenue Bonds ("2018 Series Debt") aggregating $53.4 million of proceeds were issued for the purpose of refinancing existing debt and paying a portion of the costs of issuance associated with the 2018 Series Debt. The Series 2018 Tax-Exempt Revenue Bonds were issued by the HEFB, were placed privately with a bank, and bear interest at a fixed spread to 81% of one-month LIBOR of 0.6%. The bonds have a final maturity

date of July 1, 2049, and can be optionally redeemed on or after July 1, 2025. Proceeds from the issuance of the Series 2018 bonds were used to extinguish a portion of the Series 2016F taxable variable-rate bonds.

Trust indentures for certain bond issues contain covenants and restrictions, the most material of which include limitations on the issuance of additional debt, maintenance of a specified debt service coverage ratio, and a minimum amount of days cash on hand. VUMC complied with such covenants and restrictions as of June 30, 2018 and 2017.

On April 29, 2016, VUMC delivered a secured subordinated promissory note in the amount of $100.0 million to the University to finance the Acquisition (the "VU subordinated note"). The note was issued at a fixed rate of 3.25% with monthly principal payments totaling $5.0 million annually commencing on May 31, 2016, for a period of 20 years ending on April 30, 2036. VUMC may, at any time and from time to time, without premium or penalty, prepay all or any portion of the unpaid principal amount of the VU subordinated note. This note is secured by the gross receivables and mortgaged property described in the Security Agreement subject to the requirements of the 2016 Series Debt and the MTI.

As part of the Acquisition, VUMC assumed a 10-year, unsecured, noninterest-bearing product financing arrangement with a vendor for the purchase and implementation of internal use software. As part of this agreement, VUMC has committed to an annual payment of $0.5 million payable in monthly installments through November 2019. These payments will be considered imputed interest. During Fiscal 2020, the annual payment increases to $4.9 million payable in monthly installments. These payments are considered principal and imputed interest and continue through Fiscal 2027. The balance due under the Product Financing Arrangement is $28.9 million and $22.3 million as of June 30, 2018 and 2017, respectively, and is included in the long-term debt caption of the consolidated balance sheets.

In Fiscal 2018 and 2017, noncash investing and financing activities totaled $5.8 million and $9.0 million, respectively, related to property, plant, and equipment expenditures financed through the product financing arrangement and capital leases.

Interest paid on all obligations, net of amounts capitalized, was $54.7 million and $38.0 million in Fiscal 2018 and 2017, respectively.

Principal retirements and scheduled sinking fund requirements based on nominal maturity schedules for long-term debt due in subsequent fiscal years ending June 30 are as follows:

($ in thousands)

2019	$ 5,774
2020	7,566
2021	8,868
2022	109,031
2023	139,369
Thereafter	1,200,615
	$ 1,471,223

VUMC has entered into an agreement with a bank to provide a general use line of credit with a maximum available commitment totaling $100.0 million. The line of credit, which may be drawn upon for general operating purposes, expires on April 26, 2019, and can be renewed. Interest on

each advance under this line of credit accrues at a rate of 0.65% plus LIBOR, and a commitment fee of 0.15% per annum accrues on any unused portion of the line of credit. Commitment fees for the line of credit totaled $0.2 million in Fiscal 2018 and 2017. No amounts were drawn under this credit facility as of June 30, 2018 or 2017.

12. Interest Rate Exchange Agreements

On April 29, 2016, the University transferred an interest rate exchange agreement to VUMC with a total notional amount of $150.0 million and a maturity date of May 1, 2040. VUMC split the transferred notional amount into two agreements, with key features summarized below:

Notional Amount	Pay Fixed Rate	Receive Variable Rate	Maturity
$75.0 million	4.12%	68% of one-month LIBOR	April 29, 2021
$75.0 million	4.18%	68% of one-month LIBOR	April 29, 2023

VUMC incorporated these interest rate exchange agreements into its debt portfolio management strategy. Collateral pledging requirements were removed from the novated agreements, and the agreements were modified to terminate automatically on April 29, 2021 and 2023, at which point the exchange agreements will be settled at fair value.

VUMC recorded the following activity related to the interest rate exchange agreements during Fiscal 2018 and 2017:

($ in thousands)	2018	2017
Mark-to-market adjustments	$ 10,997	$ 24,333
Cash settlements	(4,618)	(5,488)
Unrealized gain on interest rate exchange agreements, net of cash settlements	$ 6,379	$ 18,845

13. Operating Leases

VUMC has entered into certain long-term agreements with respect to facilities and equipment, both as a lessee and a lessor, which VUMC classifies as operating leases. Rental expense and rental income in Fiscal 2018 and 2017 are as follows:

($ in thousands)	2018	2017	Location in Consolidated Statements of Operations
Operating lease rental expense	$ 112,712	$ 108,008	Operating expenses—Facilities and equipment
Operating lease rental income, including related-party income	7,843	7,764	Operating revenues—Other operating revenue

The following is a schedule by fiscal year of future minimum rentals on noncancelable operating leases as of June 30, 2018:

($ in thousands)	Equipment	Property	Ground Lease	Total
2019	$ 28,143	$ 51,534	$ 19,020	$ 98,697
2020	21,230	49,477	19,020	89,727
2021	14,807	41,704	19,020	75,531
2022	11,447	32,857	19,020	63,324
2023	4,601	25,907	19,020	49,528
Thereafter	2,321	167,990	1,749,842	1,920,153
Total minimum rentals	$ 82,549	$ 369,469	$ 1,844,942	$ 2,296,960

Essential provisions of leases considered by management to be material are as follows:

- On April 29, 2016, VUMC entered into a Ground Lease with VU for approximately 1.7 million square feet of space for an initial term ending June 30, 2114, and an option to extend for up to two additional terms of 50 to 99 years each upon agreement by VU and VUMC. The initial annual base rent of $18.0 million is payable monthly, and CPI is adjusted annually. The Ground Lease allows VUMC to use the land on which its campus and related buildings are located. The $1.8 billion in ground lease payments in the table above represents future minimum rentals based on current payments.

- In July 2007, VU entered into an agreement to lease approximately 50% of the space in the 850,000-square foot One Hundred Oaks shopping center located approximately five miles from the main campus (“100 Oaks Lease”). VU redeveloped this leased space primarily for medical and office uses. This operating lease commenced during Fiscal 2009 with an initial lease term of 12 years. In October 2014, VU agreed to an amendment which extends the original lease term by an additional 15 years, with an option to renew the lease further for four additional 10-year periods. As part of the lease agreement, the lessee also has first rights on leasing additional space in the shopping center and first rights on purchasing if the landlord desires to sell. On April 29, 2016, the 100 Oaks Lease was assigned to VUMC. As a condition of the assignment, amendments to the 100 Oaks Lease were added which required VUMC to provide the landlord a $25.0 million irrevocable standby letter of credit, pay a $13.2 million refinancing penalty payable to the landlord, and pay $7.8 million of the landlord’s closing costs, financing fees, and prepayment penalties associated with a refinancing of the landlord’s debt. The prepayment penalty and closing costs were recorded as part of the Acquisition. The irrevocable standby letter of credit must remain in place through April 29, 2026. The amounts related to this standby letter of credit are recorded as facilities and equipment expense and totaled $0.3 million in Fiscal 2018 and 2017. VUMC included minimum property rental payments totaling $132.1 million related to this space in the above future minimum property rentals.

- On April 29, 2016, VU assigned to VUMC a lease for approximately 231,000 square feet of office space at 2525 West End Avenue with expiration dates primarily in 2026 through 2030, with options to renew for two additional five-year periods. VUMC included minimum property rental payments totaling $82.9 million related to this space in the above future minimum property rentals.

- On April 29, 2016, VUMC and VU entered into certain lease agreements for the use of space in buildings owned by both entities. As of June 30, 2018, VUMC's estimated future minimum property lease payments to VU totaled $28.9 million, and estimated future lease receipts from VU totaled $57.2 million. For the fiscal years ended June 30, 2019 through 2023, the minimum annual rental receipts from VU are $7.2 million.

14. Net Assets

Net asset restrictions relate to the following purposes as of June 30, 2018 and 2017:

($ in thousands)	2018	2017
Temporarily restricted		
Property, plant, and equipment	$ 38,404	$ 31,248
Research and education	38,331	35,807
Operations	2,761	2,003
Total temporarily restricted net assets	$ 79,496	$ 69,058
Permanently restricted		
Research and education	$ 34,929	$ 17,865

Unrestricted net assets are free of donor-imposed restrictions. This classification includes all revenues, gains, and losses not temporarily or permanently restricted by donors. VUMC reports all expenditures in the unrestricted class of net assets since the use of restricted contributions in accordance with donors' stipulations results in the release of the restriction.

Temporarily restricted net assets contain donor-imposed stipulations that expire with the passage of time or that can be satisfied by the action of VUMC. These net assets may include unconditional pledges, split-interest agreements, interests in trusts held by others, and accumulated appreciation on donor-restricted endowments not yet appropriated by the Board of Directors for distribution.

Permanently restricted net assets are amounts held in perpetuity as requested by donors. These net assets may include unconditional pledges, donor-restricted endowments (at historical value), split-interest agreements, and interests in trusts held by others. Generally, the donors of these assets permit VUMC to use a portion of the income earned on related investments for specific purposes.

UPMIFA specifies that unless stated otherwise in a gift instrument, donor-restricted assets in an endowment fund are restricted assets until appropriated for expenditure. Barring the existence of specific instructions in gift agreements for donor-restricted endowments, VUMC reports the historical value of such endowments as permanently restricted net assets and the net accumulated appreciation as temporarily restricted net assets. In this context, the historical value represents the original value of initial contributions restricted as permanent endowments plus the original value of subsequent contributions and, if applicable, the value of accumulations made in accordance with the direction of specific donor gift agreements.

15. Fair Value Measurements

Fair value measurements represent the amount at which the instrument could be exchanged in an orderly transaction between market participants at the measurement date. VUMC utilizes a fair value hierarchy that prioritizes the inputs to valuation techniques used to measure fair value into three levels:

Level 1 Inputs to the valuation methodology are unadjusted quoted prices for identical assets or liabilities in active markets that VUMC has the ability to access.

Level 2 Inputs to the valuation methodology include quoted prices for similar assets or liabilities in active markets, quoted prices for identical or similar assets or liabilities in inactive markets, inputs other than quoted prices that are observable for the assets or liabilities, and inputs that are derived principally from or corroborated by observable market data by correlation or other means.

Level 3 Inputs to the valuation methodology are unobservable and significant to the fair value measurement. Unobservable inputs reflect VUMC's assumptions about the inputs market participants would use in pricing the asset or liability, including assumptions about risk. Unobservable inputs are developed based on the best information available in the circumstances and may include VUMC's own data.

VUMC's principal assets and liabilities subject to fair value measurement are cash and cash equivalents, investments, patient accounts receivable, estimated receivables and payables under third-party programs, grants and contracts receivable, pledges receivable, accounts payable and other accrued expenses, self-insurance reserves, long-term debt, and interest rate exchange agreements. Except for long-term debt, the carrying amount of these assets and liabilities approximates fair value.

As of June 30, 2018, the carrying value and estimated fair value of total long-term debt totaled $1.518 billion and $1.534 billion, respectively. As of June 30, 2017, the carrying value and estimated fair value of total long-term debt totaled $1.294 billion and $1.319 billion, respectively. VUMC bases estimated fair value of long-term debt on market conditions prevailing at fiscal year-end reporting dates. Besides potentially volatile market conditions, fair value estimates typically reflect limited secondary market trading. The fair values of the fixed-rate Series Debt, as defined in Note 11. Long-Term Debt, were based on a Level 2 computation using quoted prices for similar liabilities in inactive markets as of June 30, 2018 and 2017, as applicable. The carrying amounts related to VUMC's variable-rate Series Debt and other long-term debt obligations approximate their fair values as of June 30, 2018 and 2017. As of June 30, 2018 and 2017, the fair values of the promissory note payable to VU and the product financing arrangement were based on a Level 2 discounted cash flow approach applying a risk-adjusted spread for issuers of similar credit quality to U.S. Treasury yields for securities with comparable maturities.

For financial instruments measured at fair value on a recurring basis, the following tables summarize valuation hierarchy levels as of June 30, 2018 and 2017, determined by the nature of the financial instrument and the least observable input significant to the fair value measurement:

	Fair Value Measurements as of June 30, 2018			
($ in thousands)	**Level 1**	**Level 2**	**Level 3**	**Total Carrying Amount**
Assets				
Corporate bonds	$ 9,507	$ 113,132	$ -	$ 122,639
Equity mutual funds	36,269	99,616	-	135,885
Cash and cash equivalents	75,972	-	-	75,972
Beneficial interests in split-interest trusts	7,577	-	-	7,577
Hedged equity mutual funds	-	41,275	-	41,275
Fixed-income mutual funds	21,079	76,867	-	97,946
Certificates of deposit	-	48,243	-	48,243
Asset-backed securities	-	33,547	-	33,547
Real estate mutual funds	-	14,098	-	14,098
Commercial paper	-	10,284	-	10,284
Government bonds	-	1,899	-	1,899
Hedged debt mutual funds	-	63,295	-	63,295
Commodities and managed futures mutual funds	-	5,495	-	5,495
Total assets reported at fair value	$ 150,404	$ 507,751	$ -	$ 658,155
Liabilities				
Interest rate exchange agreements	$ -	$ 54,206	$ -	$ 54,206
Total liabilities reported at fair value	$ -	$ 54,206	$ -	$ 54,206

	Fair Value Measurements as of June 30, 2017			
($ in thousands)	**Level 1**	**Level 2**	**Level 3**	**Total Carrying Amount**
Assets				
Corporate bonds	$ 60,214	$ 58,831	$ -	$ 119,045
Equity mutual funds	38,637	74,067	-	112,704
Cash and cash equivalents	32,569	-	-	32,569
Beneficial interests in split-interest trusts	7,347	-	-	7,347
Hedged equity mutual funds	4,267	10,492	-	14,759
Fixed-income mutual funds	2,080	36,131	-	38,211
Certificates of deposit	-	38,657	-	38,657
Asset-backed securities	-	21,779	-	21,779
Real estate mutual funds	-	16,206	-	16,206
Commercial paper	-	11,609	-	11,609
Government bonds	-	9,097	-	9,097
Hedged debt mutual funds	-	5,178	-	5,178
Commodities and managed futures mutual funds	-	3,820	-	3,820
Total assets reported at fair value	$ 145,114	$ 285,867	$ -	$ 430,981
Liabilities				
Interest rate exchange agreements	$ -	$ 65,203	$ -	$ 65,203
Total liabilities reported at fair value	$ -	$ 65,203	$ -	$ 65,203

VUMC employs derivatives, primarily interest rate exchange agreements, to help manage interest rate risks associated with variable-rate debt. In addition to the credit risk of the counterparty owing a balance, VUMC calculates the fair value of interest rate exchange agreements based on the present value of future net cash settlements that reflect market yields as of the measurement date.

Parties to interest rate exchange agreements are subject to risk for changes in interest rates, as well as the risk of credit loss in the event of nonperformance by the counterparty. VUMC deals only with high-quality counterparties that meet rating criteria for financial stability and credit-worthiness.

16. Retirement Plans

VUMC's full-time employees participate in a 403(b) defined contribution retirement plan administered by a third party. For eligible employees with one year of continuous service, these plans require employer matching of employee contributions up to 5% of eligible compensation. The employee immediately vests in these contributions.

VUMC funds the obligations under these plans through monthly transfers to the respective retirement plan administrators with the corresponding expenses recognized in the year incurred. During Fiscal 2018 and 2017, VUMC recognized $60.7 million and $56.6 million, respectively, of expense in connection with these plans.

17. Functional Expenses

Total operating expenses by function for Fiscal 2018 and 2017 were as follows:

($ in thousands)	2018	2017
Healthcare services	$ 3,272,198	$ 2,974,923
Academic research and education	610,457	597,625
Administrative and other	147,576	152,558
Total operating expenses	$ 4,030,231	$ 3,725,106

18. Commitments and Contingencies

Management has policies, procedures, and an organizational structure to enforce and monitor compliance with government statutes and regulations. VUMC's compliance with such laws and regulations is subject to future government review and interpretations, as well as regulatory actions unknown or unasserted at this time.

- Litigation. VUMC is a defendant in certain lawsuits alleging medical malpractice and civil action.

  On August 16, 2016, VUMC received written notice from VU of a third-party claim which may, if determined adversely to VU, require indemnification by VUMC pursuant to the provisions of the MTSA, dated as of April 29, 2016. The third-party claim is a lawsuit (Cassell v. Vanderbilt University, et al., No. 3:16-cv-02086 (U.S.D.C. M.D. TN)) brought by current and former employees of VU which alleges claims relating to administration of the Vanderbilt University Retirement Plan and New Faculty Plan. Due to the early stage of the litigation, it is not possible to assess the likely outcome of the litigation or to estimate the amount of the indemnification obligation which VUMC might have, were the matter decided adversely to VU.

  In January 2018, VUMC received a subpoena from the United States Department of Health and Human Services, Office of Inspector General ("OIG") dated January 18, 2018, requesting medical and billing records for 62 patients who received certain cardiac diagnostic testing services at VUMC. VUMC completed its production of records responsive to the subpoena in April 2018. To date, the OIG has not asserted any claims or identified any overpayments with respect to these 62 patients. At this time, there is not enough information to conclude whether a claim in connection with the OIG's subpoena is estimable or probable.

  Through the operation of its compliance program, VUMC from time to time initiates the review of billing for clinical services provided by VUMC and its affiliated providers. VUMC has established a liability reserve relating to certain matters under review as of June 30, 2018, which is not material to VUMC's overall financial position.

- Regulations. VUMC's compliance with regulations and laws is subject to future government reviews and interpretations, as well as regulatory actions unknown at this time. VUMC believes that the liability, if any, from such reviews will not have a significant effect on VUMC's consolidated financial position.

- Medical Malpractice Liability Insurance. The consolidated balance sheet includes reserves for medical malpractice, professional, and general liability coverage totaling $74.1 million as of June 30, 2018, and $71.5 million as of June 30, 2017. These liabilities are measured at the net present value of those cash flows using a discount rate of 2.5% at both dates and are classified as current or noncurrent based on the expected timing of cash flows. Other current assets include expected recoveries from commercial insurance carriers under excess coverage arrangements totaling $5.5 million as of June 30, 2018, and $4.0 million as of June 30, 2017.

- Employee Health and Workers' Compensation Insurance. Accrued compensation and benefits included actuarially determined liabilities for employee health and workers' compensation claims totaling $17.0 million and $7.5 million, respectively, as of June 30, 2018, and $16.0 million and $7.3 million, respectively, as of June 30, 2017. During Fiscal 2018 and 2017, VUMC recorded expenses for self-insured employee health benefit plans, net of employee premiums, totaling $160.4 million and $154.8 million, respectively. During Fiscal 2018 and 2017, VUMC recorded expenses for self-insured workers' compensation plans of $3.7 million and $3.0 million, respectively.

- Federal and State Contracts and Other Requirements. Expenditures related to federal and state grants and contracts are subject to adjustment based upon review by the granting agencies. Amounts of expenditures that granting agencies might disallow cannot be determined at this time. These amounts affect government grants and contracts revenue, as well as facilities and administrative costs recovery. VUMC does not expect these costs to influence the consolidated financial position by material amounts.

- Health Care Services. In Fiscal 2018 and 2017, 84% and 85%, respectively, of VUMC's operating revenue was generated by providing health care services, where revenue is affected by reimbursement arrangements with federal and state healthcare programs, commercial insurance, and other managed care payors. If reimbursement rates from third-party payors decrease or if contract terms become less favorable in future periods, VUMC's net operating revenues may decline. See Note 4. Patient Service Revenue, Patient Accounts Receivable, and Estimated Third-Party Settlements, for further information regarding healthcare revenues and related receivables.

- HIPAA Compliance. Under the Health Insurance Portability and Accountability Act of 1996 ("HIPAA"), the federal government has authority to complete fraud and abuse investigations. HIPAA has established substantial fines and penalties for offenders. VUMC maintains policies, procedures, and organizational structures to enforce and monitor compliance with HIPAA, as well as other applicable local, state, and federal statutes and regulations.

- Construction. VUMC had contractual commitments under major construction and equipment contracts totaling $119.5 million and $109.2 million as of June 30, 2018 and 2017, respectively.

- Letter of Credit. As a requirement of the assignment of the 100 Oaks Lease described in Note 13. Operating Leases, VUMC provided an irrevocable standby letter of credit of $25.0 million to the landlord of the property dated June 10, 2016.

19. Subsequent Events

Management evaluated events after June 30, 2018 through October 26, 2018, the date on which the consolidated financial statements were issued. During this period, there were no subsequent events requiring recognition in the consolidated financial statements that have not been recorded.

On July 3, 2018, VU completed the sale of the VU subordinated note by a royalty purchase agreement to an unrelated third party. No terms of the note were changed. The June Fiscal 2018 payment was due after the date that the promissory note was purchased and the final payment was made to the unrelated third party.

In addition, on July 3, 2018, VU completed the sale to an unrelated third party of the portion of the Fixed TMLA Royalty Payment payable by VUMC to VU that is payable through July 2018. The sales transaction did not change the amount, length, or timing of VUMC's payment obligation under the TMLA with respect to the Fixed TMLA Royalty Payment. The Fixed TMLA Royalty Payment for June 2018 was due after the consummation of the sale and was made to the unrelated third party.

Vanderbilt University Medical Center
Schedule of Expenditures of Federal Awards and State Financial Assistance
For the Year Ended June 30, 2018

Federal Grant/Pass-through Grantor/Project Name/Program or Cluster Title	CFDA Number	Federal/Pass-Through Award Number	Federal Expenditures	Passed to Sub-Recipients
Research and Development Cluster				
Agency For International Development				
PASS-THROUGH AINPC-AID-OAA-A-14-00029:AURUM-3HP A RANDOMIZED PRAGMATIC,OPEN-L	98.001	AID-OAA-A-14-00029	7,254	
Total USAID Foreign Assistance for Programs Overseas			**7,254**	
Total Agency For International Development			**7,254**	
Department Of Agriculture				
PASS-THROUGH CRDF-59-0210-6-004:PROSPECTIVE PROFILING OF EICOSANOID AND INFLAM	10.001	59-0210-6-004	6,180	
Total Agricultural Research_Basic and Applied Research			**6,180**	
2017-68001-26352 CHILDREN EATING WELL (CHEW) SMARTPHONE APPL	10.310	2017-68001-26352	526,513	142,944
Total Agriculture and Food Research Initiative (AFRI)			**526,513**	**142,944**
Total Department Of Agriculture			**532,693**	**142,944**
Department Of Defense				
PASS-THROUGH PITTSBURGH-W912HQ-16-C-0033:EFFECTS OF CLIMATE ON HOST-PATHOGEN INTERAC	12.114	W912HQ-16-C-0033	168,942	
Total Collaborative Research and Development			**168,942**	
N32398-17-RCA-0012:NAVY IDENTIFICATION OF MALARIA CLASS I	12.350	N32398-17-RCA-0012	17,746	
Total Department of Defense HIV/AIDS Prevention Program			**17,746**	
HDTRA1-13-1-0034:HUMAN MONOCLONAL ANTIBODIES AGAINST EBOLA	12.351	HDTRA1-13-1-0034	949,462	116,517
Total Scientific Research - Combating Weapons of Mass Destruction			**949,462**	**116,517**
W81XWH-10-2-0133:TREATMENT OF EARLY POST-OP WOUND-SUB-JHSPH	12.420	W81XWH-10-2-0133	355,174	216,950
W81XWH-12-1-0159:SCREENING & MONITORING RESPONSE TO TREATMEN	12.420	W81XWH-12-1-0159	244,663	
W81XWH-12-1-0335:RESTORATION OF STANDING AND WALKING THROUGH	12.420	W81XWH-12-1-0335	113,976	90,532
W81XWH-13-1-0287:BC123219:INTEG OF GENOMIC,BIOLOGIC	12.420	W81XWH-13-1-0287	32,307	10,193
W81XWH-13-1-0399:USING ANTIBODIES AS NANPARTICLE TARGETING	12.420	W81XWH-13-1-0399	34,253	
W81XWH-14-1-0104:PHARMACOGENETICS OVARIAN CANCER KNOWLEDGE	12.420	W81XWH-14-1-0104	7,552	
W81XWH-14-1-0140:AMPLIFICATION OF JAK2 IN BREAST CANCER	12.420	W81XWH-14-1-0140	1,577	
W81XWH-15-1-0096:DIETARY APPROACHES TO PROTECT AGAINST EYE	12.420	W81XWH-15-1-0096	546	
W81XWH-15-1-0110:LCRP-IDA:NON INVASIVE CHARACTERIZ OF INDET	12.420	W81XWH-15-1-0110	177,004	162,468
W81XWH-15-1-0259:MANESIUMS PREDICTS PROSTATE CANCER, POOR	12.420	W81XWH-15-1-0259	136,989	124,498
W81XWH-15-1-0271:LOW-COST, HIGH-THROUGHPUT 3D PULMONARY IMAG	12.420	W81XWH-15-1-0271	93,091	
W81XWH-15-1-0328:TARGETING PERIPHERAL-DERIVED REGULATORY T	12.420	W81XWH-15-1-0328	137,108	
W81XWH-15-1-0559:NEUROPROTECTIVE STRATEGIES FOR THE TREATMEN	12.420	W81XWH-15-1-0559	490,364	
W81XWH-15-1-0622:TARGETED DRUG NANOCARRIERS FOR INHIBITING	12.420	W81XWH-15-1-0622	235,716	23,671
W81XWH-16-1-0057:REGULATION OF PROGRAMMED NECROSIS AND BONE	12.420	W81XWH-16-1-0057	208,442	
W81XWH-16-1-0554:PATIENT-CENTERED TREATMENT DECISION-MAKING	12.420	W81XWH-16-1-0554	31,909	
W81XWH-16-1-0605:MRI DIFFUSION TENSOR TRACTOGRAPHY TO TRACK	12.420	W81XWH-16-1-0605	426,317	
W81XWH-16-1-0622:CELLULAR PLASTICITY IN THE DIABETIC MYOCARD	12.420	W81XWH-16-1-0622	393,236	
W81XWH-16-2-0061:MORE RESILIENCY IN THE REHABILITATION OF AC	12.420	W81XWH-16-2-0061	34,082	
W81XWH-17-1-0257:GASTRIC CARCINOGENESIS IN A NOVEL GENETICAL	12.420	W81XWH-17-1-0257	159,459	
W81XWH-17-1-0304:VALIDATION OF STRUCTURAL, MOL	12.420	W81XWH-17-1-0304	264,385	
W81XWH-17-1-0308:PROGNOSTIC AND PREDICTIVE MARKERS OF IMMUNO	12.420	W81XWH-17-1-0308	60,918	

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Vanderbilt University Medical Center
Schedule of Expenditures of Federal Awards and State Financial Assistance
For the Year Ended June 30, 2018

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Research and Development Cluster				
Department Of Defense				
W81XWH-17-1-0309:PROGNOSTIC AND PREDICTIVE MARKERS OF IMMU	12.420	W81XWH-17-1-0309	10,422	
W81XWH-17-1-0328:IDENTIFICATION OF METAPLASTIC AND PRE-NEOPL	12.420	W81XWH-17-1-0328	179,777	55,393
W81XWH-17-1-0442:HERPESVIRUSES AND IMMUNE DYSREGULATION IN	12.420	W81XWH-17-1-0442	370,835	
W81XWH-17-1-0503:CONSTRICTIVE BRONCHIOLITIS IN PREVIOUSLY DI	12.420	W81XWH-17-1-0503	347,605	
W81XWH-17-2-0003:PHOTOSENSITIZATION OF BACTERIAL PATHOG	12.420	W81XWH-17-2-0003	740,620	93,125
W81XWH-17-2-0055:QUANTITATIVE EVALUATION OF VISUAL AND AUDIO	12.420	W81XWH-17-2-0055	148,455	13,133
W81XWH-17-C-0252:AUTOMATIC SENSING FOR CLINICAL DOC (ASCD)	12.420	W81XWH-17-C-0252	421,799	103,857
PASS-THROUGH BAYLOR COLLEGE-W81XWH-15-1-0714:TARGETING RAF1 WITH C-TYPE NATRIURETIC PEPT	12.420	W81XWH-15-1-0714	43,889	
PASS-THROUGH COLORADO-W81XWH-17-1-0597:IDIOPATHIC PULMONARY FIBROSIS A DISEASE	12.420	W81XWH-17-1-0597	6,942	
PASS-THROUGH CRA-W81XWH-14-C-0018:MONITORING, EXTRACTING, AND DECODING INDICA	12.420	W81XWH-14-C-0018	23,407	
PASS-THROUGH CSMC-W81XWH-16-1-0750:RACIAL DIFFERENCES IN SYSTEMIC AND PROSTATI	12.420	W81XWH-16-1-0750	1,061	
PASS-THROUGH DUKE-W81XWH-15-2-0046:VIPER: CHRONIC PAIN AFTER AMPUTATION	12.420	W81XWH-15-2-0046	111,792	
PASS-THROUGH GENEVA-W81XWH-15-2-0053:VALIDATION OF METABOLOMIC DIAGNOSTIC AND PR	12.420	W81XWH-15-2-0053	8,228	
PASS-THROUGH JOHNS HOPKINS-W81XWH-10-2-0090:METRC PATIENT REIMBURSEMENT	12.420	W81XWH-10-2-0090	327,247	
PASS-THROUGH JOHNS HOPKINS-W81XWH-10-2-0090:THE MAJOR EXTREMITY TRAUMA RESEARCH CONSOR	12.420	W81XWH-10-2-0090	(14,891)	
PASS-THROUGH JOHNS HOPKINS-W81XWH-15-2-0074:NERVE REPAIR AND RECONSTRUCTION - LEE	12.420	W81XWH-15-2-0074	356	
PASS-THROUGH JOHNS HOPKINS-W81XWH-16-1-0742:MEMBRANE FUSION NERVE REPAIR TO IMPROVE LIM	12.420	W81XWH-16-1-0742	8,687	
PASS-THROUGH JOHNS HOPKINS-W81XWH-16-2-0060:THE MAJOR EXTREMITY TRAUMA AND REHABILITATI	12.420	W81XWH-16-2-0060	251,088	
PASS-THROUGH MISSOURI-W81XWH-14-1-0604:IMPROVING HEALTH CARE TRANSITION PLANNING	12.420	W81XWH-14-1-0604	1,028	
PASS-THROUGH NAVREF-W81XWH-11-2-0161:DECAMP-DETECTION EARLY LUNG CANCER AMONG MI	12.420	W81XWH-11-2-0161	20,987	
PASS-THROUGH PITTSBURGH-W81XWH-12-2-0023:PREHOSPITAL AIR MEDICAL PLASMA PER PT BILL	12.420	W81XWH-12-2-0023	48,137	
PASS-THROUGH PITTSBURGH-W81XWH-12-2-0023:PREHOSPITAL AIR MEDICAL PLASMA TRIAL	12.420	W81XWH-12-2-0023	85,982	
PASS-THROUGH PITTSBURGH-W81XWH-16-D-0024:LINKING INVESTIGATIONS IN TRAUMA AND EMERGE	12.420	W81XWH-16-D-0024	59,130	
PASS-THROUGH PITTSBURGH-W81XWH-17-1-0610:OPTOMIZING SMALL MOLECULE THERAPEUTICS FOR	12.420	W81XWH-17-1-0610	371,141	
PASS-THROUGH VANDERBILT UNIVERSITY-W81XWH-13-1-0194:VU:OPTICALLY BASED RAPID SCREENING METHOD	12.420	W81XWH-13-1-0194	(5,733)	
PASS-THROUGH VANDERBILT UNIVERSITY-W81XWH-14-1-0139:AMPLIFICATION OF JAK2 IN BREAST CANCER	12.420	W81XWH-14-1-0139	1,035	
PASS-THROUGH VANDERBILT UNIVERSITY-W81XWH-14-1-0278: SPATIALLY OFFSET RAMAN SPECTROSCOPY FOR	12.420	W81XWH-14-1-0278	1,574	
PASS-THROUGH VANDERBILT UNIVERSITY-W81XWH-14-C-0058:VU:IN VIVO ASSESSMENT OF TOXICANT EXPOSURE	12.420	W81XWH-14-C-0058	61	
PASS-THROUGH VANDERBILT UNIVERSITY-W81XWH-15-2-0068:AMBULATORY & NON-AMBULATORY BENEFITS OF LOW	12.420	W81XWH-15-2-0068	(9,913)	
PASS-THROUGH VANDERBILT UNIVERSITY-W81XWH-15-2-0068:VU:AMBULATORY & NON-AMBULATORY BENEFITS OF	12.420	W81XWH-15-2-0068	20,970	
PASS-THROUGH VANDERBILT UNIVERSITY-W81XWH-16-1-0063:INSIDE-OUT IMMUNOTHERAPY: PREVENTING METAS	12.420	W81XWH-16-1-0063	8,317	
PASS-THROUGH VANDERBILT UNIVERSITY-W81XWH-16-1-0559:TARGETING THE EPITHELIAL TYPE II INTERLEUK	12.420	W81XWH-16-1-0559	22,669	
PASS-THROUGH VANDERBILT UNIVERSITY-W81XWH-16-2-0052:DEVELOPMENT OF AN INJECTABLE,SETTABLE,RESOR	12.420	W81XWH-16-2-0052	14,323	
Total Military Medical Research and Development			**7,266,095**	**893,820**
PASS-THROUGH VANDERBILT UNIVERSITY-W911NF-14-2-0022:CHEMICAL THREAT ASSESSMENT BY RAPID MOLECUL	12.431	W911NF-14-2-0022	235,000	
PASS-THROUGH VANDERBILT UNIVERSITY-W911NF-14-3-0022:CHEMICAL THREAT ASSESSMENT BY RAPID MOLECUL	12.431	W911NF-14-3-0022	247,524	
Total Basic Scientific Research			**482,524**	
PASS-THROUGH CINCINNATI-FA8650-16-2-6G02:INTRANASAL KETAMINE AS AN ADJUNCT TO FENTAN	12.800	FA8650-16-2-6G02	20,969	

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Vanderbilt University Medical Center
Schedule of Expenditures of Federal Awards and State Financial Assistance
For the Year Ended June 30, 2018

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Research and Development Cluster				
Department Of Defense				
Total Air Force Defense Research Sciences Program			**20,969**	
HR0011-18-2-0001:RRADD:RAPID RATIONAL ANTIBODY DESIGN-CROWE	12.910	HR0011-18-2-0001	4,367,560	1,435,461
PASS-THROUGH EMORY-W31P4Q-14-1-0010:DEVELOPMENT OF ANTIBODY THERAPEUTICS AGAINS	12.910	W31P4Q-14-1-0010	206,976	
PASS-THROUGH INOVIO-W31P4Q-15-1-0003:DARPA II-IMMEDIATE PROTECTION AGAINST EBOLA	12.910	W31P4Q-15-1-0003	386	
PASS-THROUGH MODERNA-W911NF-13-1-0417:CHIKUNGUNYA COLLABORATION RESEARCH PROGRAM	12.910	W911NF-13-1-0417	13,698	
PASS-THROUGH PASTEUR-HR0011-17-2-0023:DEFECTIVE INTERFERENCE OF VIRAL INFECTIOUS	12.910	HR0011-17-2-0023	442,805	
PASS-THROUGH VANDERBILT UNIVERSITY-2017-1708150003:VU:IARPA BAA: NEURAL MICROPHYSIOLOGICAL SYS	12.910	2017-1708150003	87,846	
Total Research and Technology Development			**5,119,271**	**1,435,461**
Total Department Of Defense			**14,025,009**	**2,445,798**
Department Of Education				
R324A160300 MEASUREMENT OF LISTENING FATIGUE IN CHI	84.324	R 324 A160300	328,398	21,104
PASS-THROUGH VANDERBILT UNIVERSITY-R324D130003-16:IMPROVING READING AND MATHEMATICS OUTCOMES	84.324	R324D130003-16	3,269	
Total Research in Special Education			**331,666**	**21,104**
PASS-THROUGH VANDERBILT UNIVERSITY-P407A150058:NEXT STEPS FOR INCLUSIVE HIGHER EDUCATION	84.407	P407A150058	19,959	
Total Transition Programs for Students with Intellectual Disabilities into Higher Education			**19,959**	
Total Department Of Education			**351,626**	**21,104**
Department Of Energy				
PASS-THROUGH NCRPM-DE-SC0008944:EPIDEMOLOGIC STUDY OF ONE MILLION US RADIATION	81.049	DE-SC0008944	11,970	
Total Office of Science Financial Assistance Program			**11,970**	
PASS-THROUGH VANDERBILT UNIVERSITY-DE-NE0008267:META-LEVEL DESIGN GUIDANCE AND OPERATOR PERFORM	81.121	DE-NE0008267	133,483	19,140
PASS-THROUGH VIRGINIA TECH-DE-NE0008664:SMART-COM SCALABLE MULTI-AGENT ADAPTIVE RESOLUT	81.121	DE-NE0008664	30,634	
Total Nuclear Energy Research, Development and Demonstration			**164,117**	**19,140**
Total Department Of Energy			**176,087**	**19,140**
Department Of Health And Human Services				
PASS-THROUGH NORTH CAROLINA-NDD001155-02:COMMUNITY COUNTS PUBLIC HEALTH SURV	93.080	5 NU2 DD01155-02	20,527	
PASS-THROUGH NORTH CAROLINA-NDD01155-03-00:COMMUNITY COUNTS PUBLIC HEALTH SU	93.080	5 NU27 DD001155-03-00	1,684	
Total Blood Disorder Program: Prevention, Surveillance, and Research			**22,211**	
UIP00979-03 DETERMINING INFLUENZA VACCINE EFFECTIVEN	93.083	6 U01 IP00979-03S1	20,469	12,955
UIP00979-03S1 DETERMINING INFLUENZA VACCINE EFFECTIVEN	93.083	3 U01 IP00979-03S1	31,449	(6,746)
UIP00979-04 DETERMINING INFLUENZA VACCINE EFFECTIVENESS	93.083	5 U01 IP00979-04	465,298	29,453
Total Prevention of Disease, Disability, and Death through Immunization and Control of Respiratory and Related Diseases			**517,217**	**35,661**
PASS-THROUGH TEXAS-CK00512-01:UTMB:WESTERN GULF CENTER OF EXCELLENCE FOR VECTOR	93.084	1 U01 CK00512-01	1,352	
Total Prevention of Disease, Disability, and Death by Infectious Diseases			**1,352**	
IIR160029-01 GROWING RESEARCH INTEGRITY TOGETHER CONFERENCE	93.085	1 OR IIR160024-01	23,249	
Total Research on Research Integrity			**23,249**	
RFD04117-05 PHASE 2 STUDY OF MONTELUKAST FOR THE TR	93.103	7 R01 FD04117-05	306,435	180,492
RFD04778-02 PHASE 2 NOREPINEPHRINE TRANSPORTER BLOCK	93.103	7 R01 FD04778-02	75,792	45,978
RFD04778-03 PHASE 2 NOREPINEPHRINE TRANSPORTER BLOCKADE	93.103	5 R01 FD04778-03	444,752	147,587

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Vanderbilt University Medical Center
Schedule of Expenditures of Federal Awards and State Financial Assistance
For the Year Ended June 30, 2018

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Research and Development Cluster				
Department Of Health And Human Services				
PASS-THROUGH HARVARD PILGRIM-HHSF22320091006I:HHSF22301007T:TO7: MINI-SENTINE	93.103	HHSF22301007T	690	
PASS-THROUGH HARVARD PILGRIM-HHSF22320091006I:HHSF22301012T:DEATH DATA TO12	93.103	HHSF22301012T	34,499	
PASS-THROUGH HARVARD PILGRIM-HHSF22320091006I:HHSF22301012T-0024:WORKGROUP AC	93.103	HHSF22301012T-0024	929	
PASS-THROUGH HARVARD PILGRIM-HHSF223201400042I:HHSF22301002T:RISK OF NTD AMONG LIVE BIRTH	93.103	HHSF223201400042I	68,356	
PASS-THROUGH HARVARD PILGRIM-HHSF223201400042I:MAINTENANCE AND OPERATION FOR MEDICATION	93.103	HHSF223201400042I	33,237	
PASS-THROUGH HARVARD PILGRIM-HHSF22320140030I:HHSF22301001T:YEAR 3 INFRASTRUC	93.103	HHSF22301001T	49,115	1,902
PASS-THROUGH HARVARD PILGRIM-HHSF22320140030I:HHSF22301001T:YEAR 4 INFRASTRUC	93.103	HHSF22301001T	148,648	
PASS-THROUGH HARVARD PILGRIM-HHSF22320140030I:HHSF22301003T:DATA INFRASTRUCTU	93.103	HHSF22301003T	20,064	
PASS-THROUGH HARVARD PILGRIM-HHSF22320140030I:HHSF22301007T:KAWASAKI DISEASE	93.103	HHSF22301007T	33,394	
PASS-THROUGH HARVARD PILGRIM-HHSF223201710132C:A REUSABLE, GENERALIZABLE METHOD TO LINK	93.103	HHSF223201710132C	9,177	
PASS-THROUGH ICON CLINICAL RESEARCH-HHSF22301600100C:EVALUATION OF THE MEASUREMENT PROPERTIES	93.103	HHSF2230160100C	30,443	
Total Food and Drug Administration_Research			**1,255,531**	**375,958**
RMC30769-01:02 MINDFULNESS TRAINING ENHANCE EARLY EVIDENCE	93.110	4 R40 MC30769-01-02	48,197	
PASS-THROUGH HOG-HMC24046-04-00:PROGRAM INCOME- COMPREHENSIVE HEM	93.110	5 H30 MC24046-04-00	1,809,588	
PASS-THROUGH HOG-HMC24046-05-00:COMPREHENSIVE HEMOPHILIA DIAGNOST	93.110	5 H30 MC24046-05-00	495	
PASS-THROUGH HOG-HMC24046-06-00:COMPREHENSIVE HEMOPHILIA DIAGNOST	93.110	5 H30 MC24046-06-00	15,709	
PASS-THROUGH HOG-HMC24046-07-00:COMPREHENSIVE HEMOPHILIA DIAGNOSTIC AND TREAT	93.110	5 H30 MC24046-07-00	1,403	
PASS-THROUGH MASSACHUSETTS-UMC11054-08-00:AUTISM INTERVENTION NETWORKS -ECH	93.110	5 UA3 MC11054-08-00	15,908	
PASS-THROUGH MASSACHUSETTS-UMC11054-08-00:AUTISM INTERVENTION NETWORKS ECHO	93.110	5 UA3 MC11054-08-00	41,189	
PASS-THROUGH ROCHESTER-R40MC277505:INVESTIGATION OF A TEACHER-MEDIATED	93.110	1 R40 MC277505	4,527	
Total Maternal and Child Health Federal Consolidated Programs			**1,937,015**	
RES14942-11 DIOXIN EXPOSURE AND THE INVASIVE PATH	93.113	5 R01 ES14942-11	191,807	
RES16931-09:11 GENE-NEUROTOXICANT INTERACTIONS- HUN	93.113	5 R01 ES16931-11	431,175	29,158
RES22936-04:06 ASK SIGNALOSOMES AND ENVIR	93.113	6 R01 ES22936-06	376,760	1,400
PASS-THROUGH AECOM-ES10563-17:MECHANISMS OF MANGANESE NEUROTOXICITY	93.113	2 R01 ES010563-17	60,126	
PASS-THROUGH AECOM-RES007331-22A1:MECHANISIMS OF METHYLMERCURY INDU	93.113	2 R01 ES07331-22A1	(13,637)	
PASS-THROUGH AECOM-RES007331-23:MECHANISMS OF METHYLMERCURY INDUCED	93.113	5 R01 ES07331-23	284,809	1,487
PASS-THROUGH AECOM-RES007331-24:MECHANISMS OF METHYLMERCURY INDUCED NEURONAL TO	93.113	5 R01 ES007331-24	14,707	50
PASS-THROUGH AECOM-RES010563-15:MECHANISMS OF MANGANESE NEUROTOXICI	93.113	5 R01 ES10563-15	(23,903)	
PASS-THROUGH AECOM-RES010563-16:MECHANISMS OF MANGANESE NEUROTOXICI	93.113	5 R01 ES10563-16	180,142	1,924
PASS-THROUGH VANDERBILT UNIVERSITY-TES007028-43:TRAINING PROGRAM IN ENVIRONMENTAL T	93.113	5 T32 ES007028-43	16,681	
Total Environmental Health			**1,518,667**	**34,019**
PASS-THROUGH DUKE-200-2011-41276:TBESC:COMPARISON OF THE TUBERLIN SKIN TEST	93.116	200-2011-41276	129,081	36,342
Total Project Grants and Cooperative Agreements for Tuberculosis Control Programs			**129,081**	**36,342**
PASS-THROUGH VANDERBILT UNIVERSITY-RDE024982-03:ESTABLISHING LYMPHEDEMA AND FIBROSI	93.121	5 R01 DE24982-03	113,435	
PASS-THROUGH VANDERBILT UNIVERSITY-UDE024982-02:LYMPHEDEMA & FIBROSIS MEASURES IN O	93.121	5 R01 DE024982-02	(5,536)	
Total Oral Diseases and Disorders Research			**107,899**	
18H33MC3154 EMERGENCY MEDICAL SERVICES FOR CHILDREN STATE PA	93.127	2 H33 MC31540-02-00	22,126	

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Vanderbilt University Medical Center
Schedule of Expenditures of Federal Awards and State Financial Assistance
For the Year Ended June 30, 2018

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Research and Development Cluster				
Department Of Health And Human Services				
H33MC31540-01-00 EMSC PARTNERSHIP GRANTS	93.127	7 H33 MC31540-01-00	121,292	
Total Emergency Medical Services for Children			**143,418**	
PASS-THROUGH MEHARRY-CPIMP171157-01:LOW VERSUS HIGH AMONG PERSONS WITH OPIOID USE	93.137	1 CPIMP171157-01	27,074	
Total Community Programs to Improve Minority Health Grant Program			**27,074**	
UHA30535-01 SOUTHEAST REGIONAL AIDS EDUCATION AND TR	93.145	7 U1O HA30535-01	1,145,320	1,070,946
UHA30535-02-00 SOUTHEAST REGIONAL AIDS EDUCATION AND TRAIN	93.145	5 U1O HA30535-02-00	4,135,647	2,403,342
PASS-THROUGH RUTGERS NEW JERSEY-UHA28686-02-01:AETC NATIONAL COORDINATING RESOUR	93.145	6 U10 HA28686-02-01	3,054	2,827
PASS-THROUGH RUTGERS NEW JERSEY-UHA28686-03-00:AETC NATIONAL COORDINATING RESOUR	93.145	5 U10 HA28686-03-00	21,377	
Total HIV-Related Training and Technical Assistance			**5,305,398**	**3,477,116**
HHSN268201600002P:PERIPHERAL BLOOD MONONUCLEAR CELLS FOR UDN	93.172	HHSN268201600002P	1,232	
RHG06621-05 ENHANCING THE BIOBANKING INFORMED CONSENT PROC	93.172	7 R01 HG06621-05	65,468	
RHG06844-06 A RISK MANAGEMENT FRAMEWORK FOR IDENTIFIABILITY	93.172	2 R01 HG06844-06	178,600	63,260
RHG07733-04 BEYOND DATA SECURITY: PROMOTING CONFIDENTIALITY	93.172	7 R01 HG07733-04	140,161	6,462
RHG09034-01 GENETIC PRIVACY AND IDENTITY IN COMMUNITY SETT	93.172	1 RM1 HG09034-01	184,053	217,788
RHG09034-01:02 GENETIC PRIVACY AND IDENTITY IN COMMUNITY SET	93.172	5 RM1 HG09034-02	429,703	
RHG09034-03 GENETIC PRIVACY AND IDENTITY IN COMMUNITY SETTIN	93.172	5 RM1 HG09034-03	42,879	
RHG09694-01 RATIONAL INTEGRATION OF CLINICAL SEQUENCING	93.172	1 R01 HG09694-01	362,466	191,270
THG08341-01A1 VGM: VANDERBILT GENOMIC MEDICINE TRAINING PROG	93.172	1 T32 HG08341-01A1	(1,429)	
THG08341-02 VGM: VANDERBILT GENOMIC MEDICINE TRAINING PROGRA	93.172	5 T32 HG08341-02	192,243	
UHG07253-03 INTEGRATED, INDIVIDUALIZED, INTELLIGENT PRESCRIB	93.172	6 U01 HG07253-03	166,793	159,948
UHG07253-04 INTEGRATED, INDIVIDUALIZED, INTELLIGENT PRESCRIB	93.172	5 U01 HG07253-04	1,093,464	433,237
UHG07253-04S1 INTEGRATED, INDIVIDUALIZED, INTELLIGENT PRESCR	93.172	3 U01 HG07253-04S1	41,907	
UHG08672-02 VGER, THE VANDERBILT GENOME-ELECTRONIC RECORDS P	93.172	6 U01 HG08672-02	(29,010)	
UHG08672-03 VGER,THE VANDERBILT GENOME-ELECTRONIC RECORDS PR	93.172	5 U01 HG08672-03	914,193	
UHG08672-03S1 VGER, THE VANDERBILT GENOME-ELECTRONIC RECORD	93.172	3 U01 HG08672-03S1	65,418	
UHG08672-04 VGER - PERSONNEL ONLY	93.172	5 U01 HG08672-04	67,074	
UHG08701-02 ELECTRONIC MEDICAL RECORDS AND GENOMICS (EMERGE)	93.172	6 U01 HG08701-02	323,627	295,408
UHG08701-03 ELEC. MED. RECORDS AND GENOMICS(EMERGE)PHASEI	93.172	5 U01 HG08701-03	1,664,135	869,155
UHG08701-04 EMERGE III NETWORK PHASEIII-COORD. CENTER.	93.172	5 U01 HG08701-04	52,301	6,017
PASS-THROUGH MINNESOTA-RHG08605-01A1:LAWSEQ: BUILDING A SOUND LEGAL FOU	93.172	1 R01 HG08605-01A1	159,276	
PASS-THROUGH VANDERBILT UNIVERSITY-UHG009086-02:ANALYSIS VALIDATION AND RESOURCE CR	93.172	1 U01 HG09086-02	566,637	
PASS-THROUGH VANDERBILT UNIVERSITY-UHG009086-03:ANALYSIS, VALIDATION AND RESOURCE CREATION FOR	93.172	5 U01 HG009086-03	91,346	
PASS-THROUGH WASHINGTON-RHG007879-01A1:COMMUNITY-BASED EVALUATION OF APO	93.172	1 R01 HG07879-01A1	132,905	
Total Human Genome Research			**6,905,443**	**2,242,545**
FDC15726-01 VOCAL FOLD VIBRATORY FUNCTION DURING DEVELOPMENT	93.173	1 F32 DC15726-01	9,579	
FDC15726-01:02 VOCAL FOLD VIBRATORY FUNCTION DURING DEVELOP	93.173	5 F32 DC15726-02	52,811	
FDC16580-01 HAND GESTURE AS A WINDOW INTO THE COGNITIVE AND	93.173	1 F32 DC16580-01	51,445	
KDC13559-04:05 DEVELOPING AN OUTCOME MEASURING UNILATERAL VO	93.173	5 K23 DC13559-05	(5,163)	

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Vanderbilt University Medical Center
Schedule of Expenditures of Federal Awards and State Financial Assistance
For the Year Ended June 30, 2018

Federal Grant/Pass-through Grantor/Project Name/Program or Cluster Title	CFDA Number	Federal/Pass-Through Award Number	Federal Expenditures	Passed to Sub-Recipients
Research and Development Cluster				
Department Of Health And Human Services				
KDC17383-01 MAPPING THE GENETIC AND NEURAL ARCHITECTURE OF	93.173	1 K18 DC17383-01	30,571	
RDC08408-09:10 CLINICAL VALIDATION & TESTING OF PER	93.173	5 R01 DC08408-10	226,080	217,400
RDC08408-11 CLINICAL VALIDATION AND TESTING OF PERCUTANEOUS	93.173	2 R01 DC08408-11	16,883	
RDC09404-07:09 COCHLEAR IMPLANTS: COMBINED ELECTRIC	93.173	5 R01 DC09404-09	422,125	9,837
RDC11548-07 TEMPORAL WEIGHTING OF AUDITORY SPATIA	93.173	6 R01 DC11548-07	93,867	
RDC11755-06 LANGUAGE PROCESSING AND THE HIPPOCAMPAL DECLARAT	93.173	7 R01 DC11755-06	127,995	46,036
RDC11777-04:05 MODELING AUDITORY RESPONSES AND BEHA	93.173	5 R01 DC11777-05	705,817	385,047
RDC12865-03 QUANTIFYING THE FATIGUE FACTOR: HEA	93.173	6 R21 DC12865-03	12,988	
RDC13117-05:06 CLINICAL APPLICATION OF SPECTRAL ENVE	93.173	5 R01 DC13117-06	260,744	51,181
RDC13270-03:04 NEURAL CORRELATES OF RECOVERY FROM APHASIA	93.173	5 R01 DC13270-04	362,805	7,471
RDC14802-03:04 RHYTHM IN ATYPICAL LANGUAGE DEVELOPMENT: ME	93.173	5 R03 DC14802-04	139,956	14,626
RDC14809-02:04 THE MECHANISM OF INFLAMMATION-MEDIATED	93.173	5 R03 DC14809-04	163,274	
RDC15075-01:02 TONGUE- AND JAW-SPECIFIC CONTRIBUTIONS TO VOW	93.173	5 R03 DC15075-02	106,362	(3,893)
RDC15388-02:03 IDENTIFICATION OF CELLULAR PHENOTYPES IN THE	93.173	5 R01 DC15388-03	395,288	1,641
RDC15405-02 PRE-CLINICAL TESTING OF THE SAFETY AND EFFICACY	93.173	5 R01 DC15405-02	800,589	49,841
RDC15988-01A1 PHYSIOLOGICAL SIGNATURES AND BEHAVIORAL CORR	93.173	1 R01 DC15988-01A1	128,167	
RDC16080-01:02 AN ADAPATIVE SEMANTIC PARADIGM FOR VALID AND	93.173	5 R21 DC16080-02	141,594	20,606
RDC16144-01:02 SENSORY PROJECT IN INFANT/TODDLER SIBLINGS	93.173	5 R21 DC16144-02	119,423	
RDC16236-01A1 DEVELOPMENT OF A PATIENT-SPECIFIC SURGICAL PL	93.173	1 R01 DC16236-01A1	61,293	
RDC16643-01 PSYCHOPHYSICAL REWEIGHTING OF AUDITORY SPATIAL	93.173	1 R01 DC16643-01	16,618	
RDC16710-01 SOCIAL RHYTHMIC ENTRAINMENT AND LANGUAGE DEVELO	93.173	1 R21 DC16710-01	50,443	
TDC08763-11 DEVELOPING RESEARCH CAREERS IN THE HEARI	93.173	6 T35 DC08763-11	4,803	
TDC08763-12A1 DEVELOPING RESEARCH CAREERS IN THE HEARIN	93.173	2 T35 DC08763-12A1	17,690	
PASS-THROUGH CHILDRENS PHILADELPHIA-RDC122707-05:AUDIOLOGICAL AND GENETIC RESOURCE F	93.173	4 R24 DC122707-05	140,228	6,017
PASS-THROUGH HARVARD-PDC015857-01A1:COCHLEAR SYNAPTOPATHY: PREVALENCE	93.173	1 P50 DC015857-01A1	77,691	
PASS-THROUGH INTELLIGENT HEARING-RDC011432-02A1:BONE CONDUCTION TESTING-NEWBORN H	93.173	2 R44 DC11432-02A1	16,731	
PASS-THROUGH INTELLIGENT HEARING-RDC015920-02:AUTOMATED OBJECTIVE AUDIOMETRY USIN	93.173	5 R44 DC015920-02	154,857	
PASS-THROUGH MASSACHUSETTS EYE EAR-RDC017078-01:CORTICOFUGAL CIRCUITS FOR ACTIVE LISTENING	93.173	1 R01 DC017078-01	5,063	
PASS-THROUGH MIMOSA-RDC16780-01:MIDDLE-EAR REFLEX TESTING USING WAI	93.173	1 R43 DC16780-01	12,740	
PASS-THROUGH NATHAN KLINE INSTITUTE-RDC015780-01:NEUROPHYSIOLOGY, BEHAVIORAL ROLE AN	93.173	1 R01 DC15780-01	10,992	
PASS-THROUGH NATHAN KLINE INSTITUTE-RDC015780-02:NEUROPHYSIOLOGY,BEHAVIORAL ROLE AND	93.173	5 R01 DC015780-02	43,084	
PASS-THROUGH NEW YORK-RDC003937-18:ADAPTATION TO FREQUENCY-PLACE FUNCT	93.173	2 R01 DC03937-18	27,494	
PASS-THROUGH NEW YORK-RDC003937-19:ADAPTATION TO FREQUENCY-PLACE FUNCTIONS IN COCH	93.173	5 R01 DC003937-19	2,189	
PASS-THROUGH UTAH-UDC014706-01A1:RANDOMIZED CONTROLLED TRIAL OF VALGANCICLOVIR	93.173	1 U01 DC014706-01A1	1,721	
PASS-THROUGH VANDERBILT UNIVERSITY-RDC 12593-04:SAFE, RAPID ACCESS TO INTERNAL AUDI	93.173	4 R01 DC12593-04	1,030	
PASS-THROUGH VANDERBILT UNIVERSITY-RDC000523-20A1:IMPACT OF EMOTION AND ATTENTION O	93.173	2 R56 DC00523-20A1	1,614	
PASS-THROUGH VANDERBILT UNIVERSITY-RDC013767-03:EFFICACY OF PARENT-IMPLEMENTED TREA	93.173	5 R01 DC013767-03	64,844	
PASS-THROUGH VANDERBILT UNIVERSITY-RDC013767-03:VU:EFFICACY OF PARENT-IMPLEMENTED T	93.173	5 R01 DC013767-03	183	

Accompanying notes follow this Schedule

Vanderbilt University Medical Center
Schedule of Expenditures of Federal Awards and State Financial Assistance
For the Year Ended June 30, 2018

Federal Grant/Pass-through Grantor/Project Name/Program or Cluster Title	CFDA Number	Federal/Pass-Through Award Number	Federal Expenditures	Passed to Sub-Recipients
Research and Development Cluster				
Department Of Health And Human Services				
PASS-THROUGH VANDERBILT UNIVERSITY-RDC013767-04: VU IMPACT REICHLEY BILLING AGREEMENT	93.173	5 R01 DC013767-04	2,229	
PASS-THROUGH VANDERBILT UNIVERSITY-RDC013767-04:EFFICACY OF PARENT-IMPLEMENTED TREA	93.173	5 R01 DC013767-04	17,168	
PASS-THROUGH VANDERBILT UNIVERSITY-RDC013767-04:VU IMPACT WHEELER BILLING AGREEMENT	93.173	5 R01 DC013767-04	629	
PASS-THROUGH VANDERBILT UNIVERSITY-RDC013767-04:VU:BILLING AGREEMENT-KECELI-KAYSILI	93.173	5 R01 DC013767-04	5,676	
PASS-THROUGH VANDERBILT UNIVERSITY-RDC014037-05:IMAGE-GUIDED COCHLEAR PROGRAM-OTOLA	93.173	1 R01 DC14037-YR01-05	130,704	
PASS-THROUGH VANDERBILT UNIVERSITY-RDC014462-02:COMPUTER-ASSISTED, IMAGE-GUIDED PRO	93.173	1 R01 DC14462-02	152,907	
PASS-THROUGH VANDERBILT UNIVERSITY-RDC016153-01A1:NON-INVASIVE TRANSNASAL DIAGNOSIS	93.173	1 R21 DC016153-01A1	16,634	
PASS-THROUGH VISISONICS-RDC016578-01:VIRTUAL-REALITY GAMES TO ASSESS AND	93.173	1 R41 DC016578-01	103,411	
PASS-THROUGH WAYNE STATE-RDC015329-02:GENETIC STUDY OF DEVELOPMENTAL STUT	93.173	5 R03 DC15329-02	15,234	
Total Research Related to Deafness and Communication Disorders			**5,519,100**	**805,809**
UIP001063-01 ENHANCED SURVEILLANCE FOR NEW VACCINE PREVENTAB	93.185	1 U01 IP001603-01	101,470	
UIP001063-01S1 ENHANCED SURVEILLANCE NEW VACCINE PREVENTABL	93.185	3 U01 IP001063-01S1	62,646	
UIP001063-02 ENHANCED SURVEILLANCE FOR NEW VACCINE PREVENTAB	93.185	5 U01 IP001063-02	854,956	
UIP001083-01 HOUSEHOLD TRANSMISSION OF INFLUENZA VIRUSES IN	93.185	1 U01 IP001083-01	338,384	
PASS-THROUGH VANDERBILT UNIVERSITY-UIP00464-04S1 NEW VACCINE SURVEILLANCE NETWORK - PPHF	93.185	3 U01 IP00464-04S1	(6,210)	
PASS-THROUGH VANDERBILT UNIVERSITY-UIP00464-05 NEW VACCINE SURVEILLANCE NETWORK - NSVN	93.185	5 U01 IP00464-05	12	
Total Immunization Research, Demonstration, Public Information and Education_Training and Clinical Skills Improvement Projects			**1,351,257**	
KAT06965-06 MIND-BODY THERAPIES FOR PATIENTS WITH EN	93.213	5 K23 AT06965-06	19,568	
RAT04821-08:10 IMMUNOMODULATORY EFFECTS OF ARGININE S	93.213	5 R01 AT04821-10	361,178	2,604
RAT09340-01:02 BREATHING INTERVENTIONS FOR RELAXATION: DOS	93.213	5 R61 AT09340-02	392,648	7,610
PASS-THROUGH BROWN-UAT009145-02S1:MINDFULNESS INFLUENCES ON SELF-RE	93.213	3 UH2 AT09145-02S1	1,599	
PASS-THROUGH BROWN-UAT009145-03:MINDFULNESS INFLUENCES ON SELF-REGU	93.213	5 UH2 AT009145-03	7,365	
PASS-THROUGH DUKE-UAT007748-05S1:HEALTH CARE SYSTEMS RESEARCH COLL	93.213	3 U54 AT07748-05S1	89,717	
PASS-THROUGH VANDERBILT UNIVERSITY-RAT007830-04:THERAPEUTICALLY MODIFIED GUT BACTER	93.213	4 R01 AT07830-04	18,363	
Total Research and Training in Complementary and Integrative Health			**890,439**	**10,214**
HHSA290201500003I:TASK 2 UTERINE FIBROIDS LARGE SR	93.226	HHSA290201500003I	633	
KHS22990-03 VPOCKET BACHMANN	93.226	6 K12 HS22990-03	130,621	72,534
KHS22990-04 THE VANDERBILT PCOR CAREER KNOWLEDGE, EDUCATION	93.226	5 K12 HS22990-04	378,225	93,371
RHS21496-04 PERSONAL HEALTH INFORMATION NEEDS AND PRACTICES	93.226	6 R01 HS21496-04	206,961	
RHS22093-02 REAL-WORLD PATIENT RESPONSIVENESS & SA	93.226	6 R01 HS22093-02	363,607	232,185
RHS22640-02 YR 02 COMPARATIVE EFFECTIVENESS OF MODER	93.226	6 R01 HS22640-02	464,351	179,031
RHS26069-01 THE ROLE OF COLLECTIVE MINDFULNESS IN DELIVERING	93.226	1 R03 HS26069-01	3,694	
PASS-THROUGH BWH-RHS223757-01A1:IMPLEMENTATION OF A MEDICATION RE	93.226	1 R18 H223757-01A1	30,026	4,180
PASS-THROUGH EMORY-RHS025102-01:ANNUAL HEALTH ECONOMICS CONFERENCE	93.226	1 R13 HS25102-01	2,062	
PASS-THROUGH INDIANA-RHS023306-03:DESIGNING USER-CENTERED DECISION SU	93.226	5 R01 HS023306-03	32,347	
PASS-THROUGH SEATTLE CHILDREN'S HOSP-UHS025291-01:PEDIATRIC HOSPITAL CARE IMPROVEMENT	93.226	1 U18 HS25291-01	13,100	
PASS-THROUGH SEATTLE CHILDREN'S HOSP-UHS025291-02:PEDIATRIC HOSPITAL CARE IMPROVEMENT	93.226	5 U18 HS025291-02	26,729	
Total Research on Healthcare Costs, Quality and Outcomes			**1,652,356**	**581,300**

Accompanying notes follow this Schedule

Vanderbilt University Medical Center
Schedule of Expenditures of Federal Awards and State Financial Assistance
For the Year Ended June 30, 2018

Federal Grant/Pass-through Grantor/Project Name/Program or Cluster Title	CFDA Number	Federal/Pass-Through Award Number	Federal Expenditures	Passed to Sub-Recipients
Research and Development Cluster				
Department Of Health And Human Services				
HHSP223201700050C:OPIOID USE IN NURSING HOMES	93.239	HHSP223201700050C	49,423	10,234
HHSP233201700036C:TRENDS IN NURSING HOME-HOSPICE CONTRACTING	93.239	HHSP233201700036C	119,556	23,432
HHSP233201700051C:STUDY OF DUALS IN ALIGNED MANAGED CARE	93.239	HHSP233201700051C	90,777	
Total Policy Research and Evaluation Grants			**259,756**	**33,666**
FMH112263-01A1 NEURAL HABITUATION EXPLAINS MEMORY DYSFUNCTIO	93.242	1 F32 MH112263-01A1	50,350	
KMH103500-03:05 AUTISM SPECTRUM DISORDERS AND DEPR	93.242	5 K01 MH103500-05	148,298	
KMH107255-02:04 TRADITIONAL HEALERS AS ADHERENCE PAR	93.242	5 K01 MH107255-04	156,843	
KMH107256-02:04 POPULATION MOBILITY AND RETENTION IN	93.242	5 K01 MH107256-04	159,734	14,261
KMH110598-02 MENTORING AND RESEARCH ON NEUROBIOLOGICAL MARKE	93.242	5 K24 MH110598-02	99,459	
RMH100096-05:06 SUBSTRATE-SELECTIVE INHIBITION OF COX-02 TO	93.242	5 R01 MH100096-06	389,074	5,397
RMH102246-03:05 NEUTRAL CONNECTIVITY AFFECTING THE	93.242	5 R01 MH102246-05	598,258	18,684
RMH102266-03:05 THALAMOCORTICAL NETWORKS IN PSYCHOSIS	93.242	5 R01 MH102266-05	310,907	68,752
RMH102272-03:04 NEURAL NETWORKS OR ATTENTION TO INTERNAL AND	93.242	5 R01 MH102272-04	491,312	
RMH104428-03 ADAPTING A PARENT ADVOCACY PROGRAM T	93.242	6 R34 MH104428-03	83,004	9,284
RMH106511-03 DISCOVERY OF NOVEL SMALL MOLECULE ANTI	93.242	7 R01 MH106511-03	203,650	88,600
RMH106998-03 BNST NEUROCIRCUITRY IN PTSD	93.242	6 R21 MH106998-03	84,998	31,924
RMH107435-01A1:02 ARCHIDONOYLGLYCEROL SIGNALING IN ANXIETY	93.242	5 R01 MH107435-02	442,527	280
RMH109105-02:04 NEURON SELECTIVE MODULATION OF BR	93.242	5 R24 MH109105-04	431,353	106,256
RMH109225-02:03 PERIPERSONAL SPACE REPRESENTATI	93.242	5 R21 MH109225-03	197,351	76,750
RMH111567-01:02 AN INTELLIGENT THREE DIMENSIONAL LEARNING EN	93.242	5 R21 MH111567-02	74,771	
RMH111599-01A1:02 EXAMINING STRESS AND AROUSAL ACROSS PUBERT	93.242	1 R01 MH111599-02	336,955	8,022
RMH111776-01:02 TRANSCRIPTIONAL CONSEQUENCES OF STRUCTURAL V	93.242	5 R01 MH111776-02	368,060	104,742
RMH111877-01:02 ESTABLISHING A DOSE RESPONSE FOR ULTRASOUND	93.242	5 R01 MH111877-02	206,548	81,697
RMH112783-01:02 WOMEN WITH AUTISM SPECTRUM DISORDERS DURING	93.242	5 R03 MH112783-02	75,566	22,287
RMH113262-02:03 CHARACTERIZING ANTIDEPRESSANT-LIKE EFFECTS	93.242	5 R21 MH113262-03	135,586	
RMH113362-01:02 DISCOVERING BIOLOGY FOR NEUROPSYCHIATRIC DIS	93.242	5 R01 MH113362-02	562,616	59,586
RMH113438-01A1 MULTI-LEVEL SOCIAL AND BEHAVIORAL DETERMINANT	93.242	1 R01 MH113438-01A1	48,400	
RMH113478-01 PARTNERS-BASED HIV TREATMENT FOR SERO-CONCORDAN	93.242	1 R01 MH113478-01	427,145	27,814
RMH113576-01A1 REPETITIVE THINKING AND EMOTIONAL HEALTH	93.242	1 R01 MH113576-01A1	15,999	
RMH114906-01 INVESTIGATING SOCIAL COMPETENCE IN YOUTH WITH	93.242	1 R01 MH114906-01	238,263	80,880
RMH115000-01A1 DEVELOPMENT OF THALAMOCORTICAL CIRCUITS AND	93.242	1 R01 MH115000-01A1	6,679	
RMH70560-10:11 IMAGING HIPPOCAMPAL FUNCTION IN PSYCHOSIS	93.242	5 R01 MH70560-11	207,867	
RMH77298-11 DOPAMINERGIC REGULATION OF PYRAMIDAL	93.242	6 R01 MH77298-11	156,487	13,688
RMH95621-06 IRON AND MITOCHONDRIAL GENOMICS IN NEURO	93.242	6 R01 MH95621-06	164,483	175,603
RMH97793-04 PEERS PLAY & PERFORMANCE TO IMPROVE S	93.242	6 R34 MH97793-04	6,931	
PASS-THROUGH CALIFORNIA DAVIS-RMH010030-05:INTERVENTION EFFECTS OF INTENSITY A	93.242	4 R01 MH100030-05	445,270	135,152
PASS-THROUGH CALIFORNIA DAVIS-RMH100030-04:TODDLER INTERVENTIONS FOR ASD: TEST	93.242	4 R01 MH100030-04	76,628	75,259
PASS-THROUGH CALIFORNIA DAVIS-RMH100030-05:INTERVENTION EFFECTS OF INTENSITY AND DELIVERY	93.242	5 R01 MH100030-05	1,667	

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Vanderbilt University Medical Center
Schedule of Expenditures of Federal Awards and State Financial Assistance
For the Year Ended June 30, 2018

Federal Grant/Pass-through Grantor/Project Name/Program or Cluster Title	CFDA Number	Federal/Pass-Through Award Number	Federal Expenditures	Passed to Sub-Recipients
Research and Development Cluster				
Department Of Health And Human Services				
PASS-THROUGH CALIFORNIA UCSF-ML107467-02:USING EQTL NETWORKS TO GAIN BIOLOGICAL INSIGHT	93.242	1 R01 MH107467-02	36,903	
PASS-THROUGH CALIFORNIA UCSF-RMH107467-01A1:USING EQTL NETWORKS TO GAIN BIOLO	93.242	1 R01 MH107467-01A1	30,624	
PASS-THROUGH CHICAGO-PMH094267-05:CONTE CENTER FOR COMPUTATIONAL SYST	93.242	1 P50 MH94267-05	4,396	
PASS-THROUGH CHICAGO-RMH107666-01:PREDICTED GENE EXPRESSION: HIGH POW	93.242	1 R01 MH107666-01	17,950	
PASS-THROUGH MASSACHUSETTS-UMH106013-03:MAPPING NEURONAL CHLORIDE MICRODOMA	93.242	5 U01 MH106013-03	4,556	
PASS-THROUGH NORTH CAROLINA-UMH110925-02:LONGITUDINAL ASSESSMENT OF POST-TRA	93.242	5 U01 MH110925-02	22,566	
PASS-THROUGH PENNSYLVANIA-RMH098260-03:STRESS AND INFLAMMATION IN THE PATH	93.242	4 R01 MH098260-03	(66)	
PASS-THROUGH PENNSYLVANIA-RMH098260-04:STRESS AND INFLAMMATION IN THE PATH	93.242	4 R01 MH098260-04	46,119	
PASS-THROUGH VANDERBILT UNIVERSITY-PMH096972-04:ENDURING EFFECTS OF EARLY-LIFE SERO	93.242	5 P50 MH96972-04	13,249	
PASS-THROUGH VANDERBILT UNIVERSITY-RMH103518-05:VU:TRANSFORMATIVE CO-ROBOTIC TECH F	93.242	5 R33 MH103518-05	53,600	
PASS-THROUGH VANDERBILT UNIVERSITY-RMH108657-01A1:IMPROVING DEPRESSION OUTCOME BY E	93.242	1 R01 MH108657-01A1	13,684	
PASS-THROUGH VANDERBILT UNIVERSITY-RMH111548-01:ENHANCING AND MEASURING SOCIAL FUNC	93.242	1 R21 MH111548-01	55,990	
PASS-THROUGH VANDERBILT UNIVERSITY-TMH018921-27:DEVELOPMENT OF PSYCHOPATHOLOGY: FRO	93.242	5 T32 MH18921-27	56,118	
Total Mental Health Research Grants			**7,758,729**	**1,204,917**
PASS-THROUGH MEHARRY-HSP021359-02:REDUCING HIV & SA AMONG MSMS ON HBC	93.243	1 H79 SP21359-02	4,396	
PASS-THROUGH MEHARRY-HSP021359-03:REDUCING HIV & SA AMONG MSMS ON HBC	93.243	1 H79 SP21359-03	13,537	
Total Substance Abuse and Mental Health Services_Projects of Regional and National Significance			**17,933**	
200-2015-63553:MONITORING AND COORDINATING PERSONAL PROTECT	93.262	200-2015-63553	845,399	
Total Occupational Safety and Health Program			**845,399**	
PASS-THROUGH INDIANA-RHS025411-01:USE OF SHORT STAY UNITS INSTEAD OF	93.266	1 R01 HS025411-01	35,300	
Total Health Systems Strengthening and HIV/AIDS Prevention, Care and Treatment under the President's Emergency Plan for AIDS Relief			**35,300**	
200-2012-50430:CISA CLINICAL LEAD-BASE CLIN 0001	93.268	200-2012-50430	286,332	
200-2012-50430:CISA CLINICAL VACCINE SAFETY EVAL CLIN 0005	93.268	200-2012-50430	146,432	
200-2012-50430:CISA TDAP INFANT FOLLOW UP CLIN 0002	93.268	200-2012-50430	7,277	
200-2012-50430:CISA TDAP INFANT FOLLOW UP CLIN 0003	93.268	200-2012-50430	(36)	
200-2012-50430:PPHF LAIV & ASTHMA STUDY CLIN 0001	93.268	200-2012-50430	18,057	
200-2012-50430:PPHF LAIV & ASTHMA STUDY CLIN 0002	93.268	200-2012-50430	5,547	
200-2017-M-94349:EFFECTS OF ADULT SUSCEPTIBILITY ON THE	93.268	200-2017-M-94349	7,051	
PASS-THROUGH DUKE-200-2011-41276:TUBERCULOSIS EPIDEMILOGIC STUDIES CONSORTIUM	93.268	200-2011-41276	79,131	56,083
Total Immunization Cooperative Agreements			**549,791**	**56,083**
RAA25385-01 INVESTIGATING THE ROLE OF THE HUMAN BNST CIRCUIT	93.273	1 R21 AA25385-01	157,062	13,888
RAA26186-01 ENDOCANNABINOID MECHANISMS IN THE PATHOPHYSIOLOG	93.273	1 R01 AA26186-01	372,032	11,258
UAA26222-01 1/2 ALCOHOL ASSOCIATED COMORBIDITIES AND MICROBI	93.273	1 U01 AA26222-01	220,915	86,791
PASS-THROUGH BOSTON MEDICAL-RAA025859-01:ST PETER HIV ALCOHOL PROTEIN BIOMAR	93.273	1 R01 AA025859-01	17,622	
PASS-THROUGH BOSTON MEDICAL-UAA020780-07:URBAN ARCH 4/5 RUSSIA COHORT ST PET	93.273	5 U01 AA020780-07	68,870	
PASS-THROUGH BOSTON MEDICAL-UAA21989-05:ZINC FOR HIV DISEASE AMONG ALCOHOL U	93.273	5 U01 AA21989-05	31,633	
PASS-THROUGH BOSTON MEDICAL-UUAA20780-06:URBAN ARCH (4/5) RUSSIA COHORT-TARG	93.273	2 U01 AA20780-06	13,505	
Total Alcohol Research Programs			**881,639**	**111,937**

Accompanying notes follow this Schedule

Vanderbilt University Medical Center
Schedule of Expenditures of Federal Awards and State Financial Assistance
For the Year Ended June 30, 2018

Federal Grant/Pass-through Grantor/Project Name/Program or Cluster Title	CFDA Number	Federal/Pass-Through Award Number	Federal Expenditures	Passed to Sub-Recipients
Research and Development Cluster				
Department Of Health And Human Services				
KDA38720-03:05 NEONATAL ABSTINENCE SYNDROME:RISK	93.279	5 K23 DA38720-05	173,366	
RDA31726-06 PREDICTORS OF OPIOID ANALGESIC RESPONSE	93.279	6 R01 DA31726-06	42,748	55,904
RDA37891-03:05 REDUCED OPIOD ANALGESIC REQUIRMENTS	93.279	5 R01 DA37891-05	591,374	212,261
RDA39743-03 CHARACTERIZING NON-MEDICAL PRESCRIPTI	93.279	6 R03 DA39743-03	7,116	
RDA40630-01:03 PARVALBUMIN INTERNEURONS REGULATE NUCLEUS A	93.279	5 R01 DA40630-03	453,772	1,200
RDA45729-01 IMPROVING ACCESS TO TREATMENT FOR WOMEN WITH OP	93.279	1 R01 DA45729-01	35,699	
PASS-THROUGH DUKE-UDA040317-03:MID SOUTHERN PRIMARY CARE NETWORKS	93.279	5 UG1 DA40317-03	15,001	
PASS-THROUGH PITTSBURGH-RDA034629-02: CESSATION IN NON-DAILY SMOKERS: A	93.279	5 R01 DA34629-02	25,014	
PASS-THROUGH RESEARCH MENTAL HYGIENE-RDA038739-01:CYCOOXYGENASE-2 INHIBITION FOR CANN	93.279	1 R21 DA38739-01	5,192	
PASS-THROUGH RUSH MEDICAL CENTER-RDA39522-01A1:DEVELOPMENT OF CO-MORBID PTSD AND	93.279	1 R01 DA39522-01A1	36,158	
Total Drug Abuse and Addiction Research Programs			**1,385,440**	**269,365**
PASS-THROUGH ATHN-UDD000761-03:A CROSS-SECTIONAL ANALYSIS OF CARDI	93.283	5 U10 DD00761-03	(64)	
PASS-THROUGH TN HEALTH-52614:EIP-ABC CORE CONTINUATION	93.283	52614:ST TN	1,206,082	3,022
PASS-THROUGH TN HEALTH-59293:EIP-ABC CORE CONTINUATION	93.283	59293:ST TN	1,217,911	
Total Centers for Disease Control and Prevention_Investigations and Technical Assistance			**2,423,929**	**3,022**
FEB21840-02 ULTRA-FAST MOLECULAR MRI OF HUMAN AD	93.286	6 F32 EB21840-02	461	
FEB21840-03 ULTRA-FAST MOLECULAR MRI OF HUMAN ADIPOSE TISSUE	93.286	5 F32 EB21840-03	45,937	
KEB13659-05 QUANTITATIVE MRI OF THE HUMAN PER	93.286	6 K25 EB13659-05	34,051	
REB09106-06 IN VIVO AMYLOID-BETA IMAGING MOUSE BR	93.286	6 R00 EB09106-06	85,007	
REB17767-04:05 CERT IMAGING OF MUSC	93.286	5 R01 EB17767-05	275,707	26,718
REB18033-03 HIGH LIGHT OUTPUT SCINTILLATOR CAME	93.286	6 R21 EB18033-03	92,243	13,864
REB18992-03:04 A MAGNETIC CAPSULE ENDOSCOPE FOR COLONOSCOPY	93.286	5 R01 EB18992-04	334,981	238,465
REB19509-02 THERMOSENSITIVE INJECTABLE POLYMER-BA	93.286	6 R21 EB19509-02	55,626	51,865
REB20666-02:04 IDENTIFICATION EXTRACTION AND DI	93.286	5 R01 EB20666-04	391,580	
REB21012-01A1:02 FAST VOLUMETRIC TREATMENT USING MULTI-FOCU	93.286	5 R21 EB21012-02	139,924	22,748
REB24525-01A1 PROTON RELAXATION AND EXCHANGE CONTRAST	93.286	1 R01 EB24525-01A1	102,548	
TEB01628-14 POSTDOCTORAL TRAINING IN BIOMEDICAL MRI AND	93.286	6 T32 EB01628-14	5,474	
TEB01628-15 POSTDOCTORAL TRAINING IN BIOMEDICAL MRI AND MRS	93.286	5 T32 EB01628-15	245,773	
PASS-THROUGH CALIFORNIA UCSF-UEB021214-02:SCALE-UP OF IMPLANTABLE ARTIFICIAL	93.286	1 U01 EB21214-02	475	
PASS-THROUGH CALIFORNIA UCSF-UEB021214-03:SCALE-UP OF IMPLANTABLE ARTIFICIAL	93.286	1 U01 EB21214-03	645,239	
PASS-THROUGH SIUC-REB020323-02:PURE PARAHYDROGEN-ENHANCED METABOLI	93.286	1 R21 EB20323-01	47,392	
PASS-THROUGH SIUC-REB18014-02:PURE PARAHYDROGEN-ENHANCED METABOLIC	93.286	1 R21 EB18014	9,066	
PASS-THROUGH VANDERBILT UNIVERSITY-REB014308-04:BONE FRACTURE RISK ASSESSMENT THROU	93.286	5 R01 EB014308-04	68,163	
PASS-THROUGH VANDERBILT UNIVERSITY-REB014308-04:BONE FRACTURE RISK ASSESSMENT-ORTHO	93.286	1 R01 EB14308-01A1/04	(3,364)	
PASS-THROUGH VANDERBILT UNIVERSITY-REB016695-03:THREE-DIMENSIONAL PATIENT-TAILORED	93.286	5 R01 EB16695-03	134,327	
PASS-THROUGH VANDERBILT UNIVERSITY-REB016695-05:ARRAY-COMPRESSED PARALLEL TRANSMISSION FOR HIGH	93.286	2 R01 EB016695-05	46,352	
PASS-THROUGH VANDERBILT UNIVERSITY-REB017230-03:CONTROLLING QUALITY AND CAPTURING U	93.286	1 R01 EB17230 YR 1-4	80,565	
PASS-THROUGH VANDERBILT UNIVERSITY-REB017467-04:ROBOTIC NATURAL ORIFICE SKULL BASE	93.286	1 R01 EB17467 01/04	755	

Accompanying notes follow this Schedule

Vanderbilt University Medical Center
Schedule of Expenditures of Federal Awards and State Financial Assistance
For the Year Ended June 30, 2018

Federal Grant/Pass-through Grantor/Project Name/Program or Cluster Title	CFDA Number	Federal/Pass-Through Award Number	Federal Expenditures	Passed to Sub-Recipients
Research and Development Cluster				
Department Of Health And Human Services				
PASS-THROUGH VANDERBILT UNIVERSITY-REB018521-02:RF ENCODING FOR GRADIENT-FREE MRI-R	93.286	1 R21 EB18521-01/02	4,796	
PASS-THROUGH VANDERBILT UNIVERSITY-REB019409-03:SUBSTRATE SIRNA DELIVERY FROM SCAFF	93.286	1 R01 EB19409-01/04	47,342	
PASS-THROUGH VANDERBILT UNIVERSITY-REB019980-01A1:MRI TOOLBOX FOR RODENT BRAIN MICR	93.286	1 R01 EB19980-01A1	76,835	
PASS-THROUGH VANDERBILT UNIVERSITY-REB022380-01:A COMPUTATIONAL MODEL-ENHANCED APPR	93.286	1 R21 EB22380-01	17,247	
PASS-THROUGH VANDERBILT UNIVERSITY-REB023717-01:IMAGE GUIDED ROBOTIC NEPHRON-SPARIN	93.286	1 R01 EB023717-01	41,534	
PASS-THROUGH VANDERBILT UNIVERSITY-REB024864-01:BRONCHOSCOPIC STEERABLE NEEDLES FOR TRANSPARENC	93.286	1 R01 EB024864-01	8,509	
PASS-THROUGH VANDERBILT UNIVERSITY-REB24199-01A1:FAST METHODS FOR MAPPING FOCUSED U	93.286	1 R21 EB024199-01A1	29,964	
PASS-THROUGH VANDERBILT UNIVERSITY-RHL012347-01:MK2 INHIBITORY NANOPLEXES TO ENHANC	93.286	1 R01 HL12347-01	65,834	
Total Discovery and Applied Research for Technological Innovations to Improve Human Health			**3,130,342**	**353,660**
UMD10722-01 CTR OF EXCELLENCE IN PRECISION MEDICINE-OVERALL	93.307	1 U54 MD10722-01	144	
UMD10722-02 CTR. OF EXCELLENCE PREC. MED-ADMIN CORE	93.307	5 U54 MD10722-02	1,936,511	1,199,056
UMD10722-03 CTR OF EXCELLENCE IN PRECISION MED.-ADMIN CORE	93.307	5 U54 MD10722-03	195,940	
PASS-THROUGH MEHARRY-MD007593-28:MEHARRY TRANSLATIONAL RESEARCH CENTER (METRC)	93.307	5 U54 MD0007593-28	13,933	
PASS-THROUGH MEHARRY-UMD007586:COMMUNITY ENGAGEMENT CORE	93.307	2 U54 MD007586-31	13,307	
PASS-THROUGH MEHARRY-UMD007586-31:MECHANISM AND ONCOGENIC ROLE OF LYS	93.307	2 U54 MD007586-31	10,513	
PASS-THROUGH MEHARRY-UMD007586-31:MECHANISMS LINKING ADVERSITY AND PA	93.307	2 U54 MD007586-31	32,569	
PASS-THROUGH MEHARRY-UMD007593-07:MEHARRY CLINICAL AND TRANSLATIONAL RES (METRC)	93.307	2 U54 MD007593-07	2,775	
PASS-THROUGH MEHARRY-UMD07593-06:MEHARRY CLINICAL AND TRANSLATIONAL R	93.307	2 U54 MD007593-06	13,672	
PASS-THROUGH MSM-UMD08173:04:UNDERSTANDING THE IMPACT OF FEDERAL	93.307	5 U54 MD08173-04	2,512	
Total Minority Health and Health Disparities Research			**2,221,876**	**1,199,056**
DDK97678-02 POSITIVE PSYCHOLOGY TO PROMOTE ADHERE	93.310	6 DP3 DK97678-02	1,658	
OOD23132-02 PMI PARTI PREP/PROTO: MILESTONE 1	93.310	6 OT2 OD23132-02	1,230,671	72,656
OOD23850-01 ENSMAP: MOLECULAR AND FUNCTIONAL MAPPING OF TH	93.310	3 OT2 OD23850-01	820,005	260,426
RGM118944-01:02 MOLECULAR AND FUNCTIONAL CHARACTERIZATION O	93.310	1 R21 GM118944-01	160,407	
UCA203708-01 CROWD SOURCING LABELS FROM ELECTRONIC MEDICAL	93.310	1 UH2 CA203708-01	104,557	105,212
UCA203708-02 CROWD SOURCING LABELS FROM ELECTRONIC MEDICAL	93.310	5 UH2 CA203708-02	275,071	112,670
UHG07674-04 VANDERBILT CENTER FOR UNDIAGNOSED DISEA	93.310	6 U01 HG07674-04	42,843	42,843
UHG07674-05 VANDERBILT CENTER FOR UNDIAGNOSED DISEASES (VCUD	93.310	5 U01 HG07674-05	1,882,787	48,202
UOD23196-01 PMI DATA CORE-1U2COD023196-01	93.310	1 U2C OD23196-01	1,689,255	1,538,496
UOD23196-02 PMI DATA SUPPORT CENTER	93.310	5 U2C OD23196-02	11,776,872	4,513,439
PASS-THROUGH AECOM-UOD023320-01:DEVELOPMENTAL IMPACT OF NICU EXPOSU	93.310	1 UG3 OD023320-01	21,058	
PASS-THROUGH AECOM-UOD023320-02:DEVELOPMENTAL IMPACT OF NICU EXPOSU	93.310	5 UG3 OD023320-02	148,750	
PASS-THROUGH BOSTON COLLEGE-UGM119023-01:NATIONAL RESEARCH MENTORING NETWORK	93.310	5 U54 GM119023-01	237,294	
PASS-THROUGH CCHMC-UTR001425-03S1: SIRB GENOMIC RESEARCH-CINCINNATI	93.310	3 UL1 TR001425-03S1	38,099	
PASS-THROUGH CHICAGO-RMH101820-02S1:HARNESSING GTEX TO CREATE TRANSCR	93.310	5 R01 MH101820-02S1	37,219	
PASS-THROUGH DUKE-UOD023375-02:ECHO-ENVIRONMENTAL INFLUENCES ON CH	93.310	5 U2C OD023375-02	76,034	
PASS-THROUGH DUKE-UOD023375-1:ECHO COORDINATING CENTER	93.310	1 U2C OD023375-01	57,383	
PASS-THROUGH FISK-UGM119023-03:NRMN-LINK PROJECT DEVELOPING/IMPLEM	93.310	8 U54 GM119023-03	1,815	

Accompanying notes follow this Schedule

Vanderbilt University Medical Center
Schedule of Expenditures of Federal Awards and State Financial Assistance
For the Year Ended June 30, 2018

Federal Grant/Pass-through Grantor/Project Name/Program or Cluster Title	CFDA Number	Federal/Pass-Through Award Number	Federal Expenditures	Passed to Sub-Recipients
Research and Development Cluster				
Department Of Health And Human Services				
PASS-THROUGH GE-RCA174377-05:ACCELERATING THE INTEGRATION AND TR	93.310	1 R01 CA174377-05	113,954	
PASS-THROUGH NORTHWESTERN-UOD023319-01:NORTHWESTERN UNIV-ECHO PRO RESEARCH RESOURCE	93.310	1 U24 OD023319-01	3,323	
PASS-THROUGH SANTA CRUZ-OOD025460-01:THE COMMONS ALLIANCE: A PARTNERSHIP TO CATALYZE	93.310	1 OT3 OD025460-01	32,444	
PASS-THROUGH WASHINGTON-UOD023271:PRENATAL AND EARLY CHILDHOOD PATHWAYS	93.310	5 UG3 OD023271-02	68,354	
PASS-THROUGH WASHINGTON-UOD023271-01:PRENATAL AND EARLY CHILDHOOD PATHWA	93.310	1 UG3 OD23271-01	16,048	
PASS-THROUGH WISCONSIN-UOD023282-02:CREW CHILDREN'S RESPIRATORY RESEARC	93.310	5 UG3 OD023282-02	702,189	
PASS-THROUGH WISCONSIN-UOD23282-01:CHILDREN'S RESPIRATORY RESEARCH AND	93.310	1 UG3 OD23282-01	25,659	
Total Trans-NIH Research Support			**19,563,748**	**6,693,945**
UDD01073-04 COMP B-NATIONAL SB PATIENT REGISTRY AT VANDERBIL	93.315	5 U01 DD01073-04	11,391	
UDD01073-05 COMP B-NATIONAL SPINA BIFIDA PATIENT REGISTRY	93.315	5 U01 DD01073-05	43,938	
UDD01075-04 COMP C-NATIONAL SB UROLOGIC PROTOCOL AT VANDERBI	93.315	5 U01 DD01075-04	3,514	
UDD01075-05 COMP C-NATIONAL SPINA BIFIDA UROLOGIC PROTOCOL	93.315	5 U01 DD01075-05	14,802	
Total Rare Disorders: Research, Surveillance, Health Promotion, and Education			**73,645**	
PASS-THROUGH TN HEALTH-56372:NEUROLOGIC BIRTH DEFECTS EDUCATION SERVICES	93.323	56372:ST TN	54,345	
Total Epidemiology and Laboratory Capacity for Infectious Diseases (ELC)			**54,345**	
KTR02245-01 KL2 ADMIN	93.350	1 KL2 TR02245-01	419,572	102,933
KTR02245-02 VICTR - KL2 - ADMIN	93.350	5 KL2 TR02245-02	200,102	
KTR0446-11 KL2-NATHAN BRUMMEL	93.350	6 KL2 TR00446-11	29,196	44,456
RTR01694-01A1 ADVANCING THE SCIENCE OF COMMUNITY ENGAGED	93.350	1 R13 TR01694-01A1	21,468	
RTR01723-01:02 REPURPOSING MISOPROSTOL FOR CLOSTRIDIUM DIFFI	93.350	5 R21 TR01723-02	234,433	
TTR00447-11 VICTR TL1	93.350	6 TL1 TR00447-11	43,783	7,694
TTR02244-01 VICTR TL1	93.350	1 TL1 TR02244-01	174,356	42,129
TTR02244-02 VICTR CTSA TL1	93.350	5 TL1 TR02244-02	72,503	837
UTR00123-06 NEW VUMC C4 7-1-16	93.350	6 U54 TR00123-06	(30,683)	
UTR00123-07 CLINICAL AND TRANSLATIONAL COORDINATING CENTER	93.350	4 U54 TR00123-07	520,887	
UTR002243-01 VICTR UL1-ADMIN	93.350	1 UL1 TR002243-01	7,535,177	479,728
UTR002243-02 CTSA UL1 ADMIN	93.350	5 UL1 TR002243-02	1,900,857	115,119
UTR002243-02S1 VICTR REDCAP SUPPLEMENT	93.350	3 UL1 TR002243-02S1	84,331	
UTR002398-01 REPURPOSING MISOPROSTOL TO PREVENT RECURRENCE	93.350	1 U01 TR002398-01	46,453	
UTR01579-01 RIC IMPROVING CLIN TRIAL ED.,RECRUIT.	93.350	1 U24 TR01579-01	402,180	239,676
UTR01579-02 RIC IMPROV CLINICAL TRL EDU, RECRUIT, ENROLL	93.350	5 U24 TR01579-02	3,293,872	280,217
UTR0445-11 VICTR GOVERNANCE	93.350	6 UL1 TR0445-11	98,367	129,013
PASS-THROUGH CCHMC-UTR00125-04S1:SIRB GENOMIC RESEARCH CINCINNATI	93.350	3 UL1 TR001425-04S1	9,819	
PASS-THROUGH DUKE-UTR001608-01:CENTER FOR INNOVATIVE TRIALS IN CHI	93.350	1 U24 TR001608-01	242	
PASS-THROUGH DUKE-UTR001608-02:CENTER FOR INNOVATIVE TRIALS IN CHI	93.350	1 U24 TR001608-02	1,993,759	
PASS-THROUGH DUKE-UTR001803-02:LEVERAGING EXISTING REGISTRY RESOUR	93.350	5 U01 TR01803-02	121,093	
PASS-THROUGH MASSACHUSETTS-UTR001812-01:STRENGTHENING TRANSLATIONAL RESEARC	93.350	1 U01 TR001812-01	14,414	
PASS-THROUGH MASSACHUSETTS-UTR001812-02:STRENGHTENING TRANSLATIONAL RESEARC	93.350	1 U01 TR001812-02	229,709	

Accompanying notes follow this Schedule

Vanderbilt University Medical Center
Schedule of Expenditures of Federal Awards and State Financial Assistance
For the Year Ended June 30, 2018

Federal Grant/Pass-through Grantor/Project Name/Program or Cluster Title	CFDA Number	Federal/Pass-Through Award Number	Federal Expenditures	Passed to Sub-Recipients
Research and Development Cluster				
Department Of Health And Human Services				
PASS-THROUGH NEW YORK (SUNY)-UTR001412-02:BUFFALO CLINICAL AND TRANSLATIONAL	93.350	5 UL1 TR001412-02	43,584	
PASS-THROUGH NEW YORK (SUNY)-UTR001412-04S1:BUFFALO CLINICAL AND TRANSLATIONAL RESEARCH	93.350	3 UL1 TR001412-04S1	15,442	
PASS-THROUGH VANDERBILT UNIVERSITY-UTR000491-05:NEUROVASCULAR UNIT ON A CHIP-NEUROL	93.350	5 UH3 TR00491-05	1,065	
PASS-THROUGH VANDERBILT UNIVERSITY-UTR000491-05S1:NEUROVASCULAR UNIT ON A CHIP:REGI	93.350	3 UH3 TR00491-05S1	1	
PASS-THROUGH VANDERBILT UNIVERSITY-UTR000491-06:NEUROVASCULAR UNIT ON A CHIP: REGIO	93.350	5 UH3 TR00491-06	4,047	
PASS-THROUGH VANDERBILT UNIVERSITY-UTR002097-01:DRUG DEV FOR TUBEROUS SCLEROSIS COM	93.350	1 UG3 TR002097-01	371,096	
Total National Center for Advancing Translational Sciences			**17,851,124**	**1,441,802**
GOD21927-02 DEVELOPING AND IMPROVING CAGE WASH FACILITIES AT	93.351	6 G20 OD21927-02	500,000	
SOD023543-01 RADIOCHEMISTRY EQUIPMENT FOR MOLECULAR IMAGING	93.351	1 S10 OD23543-01	144,000	
SOD12297-02 A PET-CT SCANNER FOR TRANSLATIONAL RE	93.351	6 S10 OD12297-02	1,963,449	
PASS-THROUGH RECOMBINETICS-ROD023257-01A1:DEVELOPMENT OF A GENETIC SWINE MO	93.351	1 R43 OD023257-01A1	33,383	
PASS-THROUGH TULANE-UOD011109-14:TULANE NATIONAL PRIMATE RESEARCH CE	93.351	4 U24 OD11109-14	2,736	
Total Research Infrastructure Programs			**2,643,568**	
PASS-THROUGH VANDERBILT UNIVERSITY-UHP30922-01-00:INTERPROFESSIONAL COLLABORATIVE P	93.359	1 UD7 HP30922-01-00	207,686	
Total Nurse Education, Practice Quality and Retention Grants			**207,686**	
RNR15079-03:04 IMAGING LYMPHATIC FUNCTION IN PATIENTS	93.361	5 R01 NR15079-04	315,955	12,101
PASS-THROUGH VANDERBILT UNIVERSITY-RNR015353-03:IMPACT-PCRC-SUPPORTED LEGACY INTERV	93.361	5 R01 NR15353-03	33,092	
Total Nursing Research			**349,047**	**12,101**
PASS-THROUGH CAROLINAS-UMC31108-01-00:EMBRACE	93.365	1 U1E MC31108-01-00	38,047	
Total Sickle Cell Treatment Demonstration Program			**38,047**	
HHSN261201600027I:HELICOBACTER PYLORI GENOME PROJECT	93.393	HHSN261201600027I	18,494	
KCA207848-01:02 VITAMIN D AND COLORECTAL CANCER RISK: AN INT	93.393	5 K99 CA207848-02	93,672	
PCA028842-32 ETIOLOGICAL STUDIES OF GASTRIC CARCINO-PROJECT	93.393	5 P01 CA28842-32	877,440	360,713
PCA116087-10 H. PYLORI-INDUCED INFLAMMATION PROJECT 1	93.393	5 P01 CA116087-10	754,679	133,113
PCA116087-11 H. PYLORI-INDUCED INFLAMMATION AND GASTRIC	93.393	5 P01 CA116087-11	616,920	44,487
PCA28842-31 ETIOLOGICAL STUDIES OF GASTRIC CARCINOMA-PROJ 1	93.393	5 P01 CA28842-31	92,814	88,458
R01CA202936-04 METHLYLOMIC BIOMAKERS FOR MAGNE	93.393	5 R01 CA202936-04	492,904	269,969
RCA077955-20:21 H. PYLORI RELATIONSHIP TO DIGESTIVE DISEASE	93.393	5 R01 CA077955-21	280,017	742
RCA077955-22 H. PYLORI RELATIONSHIP TO DIGESTIVE DISEASE	93.393	2 R01 CA077955-22	97,591	
RCA138833-06A1:07 REGULATION OF THE ONCOGENIC STRESS RESPONS	93.393	2 R01 CA138833-07	115,263	
RCA148667-06 CONSORTIUM STUDY TO IDENTIFY	93.393	6 R01 CA148667-06	515,003	
RCA158473-06 GENOME SEQUENCING TO IDENTIFY NOVEL	93.393	6 R01 CA158473-06	315,935	
RCA174853-05 HELICOBACTER PYLORI BLOOD BIOMARK	93.393	5 R01 CA174853-05	(2,274)	
RCA176757-03 SEARCHING FOR NEW RISK VARIANTS IN	93.393	6 R03 CA176757-03	280	
RCA182063-02:03 PERSISTENT SIX2 EXPRESSION AS A FI	93.393	5 R03 CA182063-03	46,160	
RCA183019-03 REPRODUCIBILITY/VALIDITY OF MICRO	93.393	6 R03 CA183019-03	18,182	
RCA187495-03 PREVENTION OF COX-2 DERIVED DNA	93.393	6 R21 CA187495-03	30,077	6,511
RCA188214-03:05 COLORECTAL CANCER RISK LOCI: GWAS, FINE MAPP	93.393	5 R01 CA188214-05	582,239	52,296

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Vanderbilt University Medical Center
Schedule of Expenditures of Federal Awards and State Financial Assistance
For the Year Ended June 30, 2018

Federal Grant/Pass-through Grantor/Project Name/Program or Cluster Title	CFDA Number	Federal/Pass-Through Award Number	Federal Expenditures	Passed to Sub-Recipients
Research and Development Cluster				
Department Of Health And Human Services				
RCA189152-02:04 EFFECTS OF EXPANDED COVERAGE ON ACCE	93.393	5 R01 CA189152-04	641,582	41,606
RCA189455-03 EFFECT OF MAGNESIUM TREATMENT ON VIT	93.393	6 R03 CA189455-03	9,269	
RCA190428-02 HELICOBACTER PYLORI PROTEIN SPECIFIC	93.393	6 R01 CA190428-02	73,772	81,541
RCA190612-03:05 TARGETED CHEMOPREVENTION OF GASTRIC *NEW	93.393	5 R01 CA190612-05	484,332	57,651
RCA194829-03 METABOLIC REGULATION OF T-ALL CELL	93.393	5 R21 CA194829-03	6,371	
RCA195660-02:03 METHIONINE METABOLISM IN ESOPH	93.393	5 R03 CA195660-03	50,233	
RCA197344-02:03 ADAPTATION OF A PREVENTION-TREATME	93.393	5 R21 CA197344-03	88,643	15,100
RCA198482-02:04 CHROMATIN MAINTENANCE IN CANCER PROG	93.393	5 R01 CA198482-04	274,464	181,729
RCA200999-02:04 SEX HORMONES PHYTOEESTROGENS	93.393	5 R01 CA200999-04	348,064	59,228
RCA201856-02:03 PREVENTION OF GENOMIC INSTABIL	93.393	5 R21 CA201856-03	79,467	49,642
RCA202981-02 BREAST CANCER GENETIC STUDY IN AFRICAN-ANCESTRY	93.393	5 R01 CA202981-02	2,124,217	234,608
RCA203012-01A1 METHYLTRANSFERASE CONTRIBUTIONS TO GENOMIC ST	93.393	1 R01 CA203012-01A1	648,611	400,411
RCA204819-01A1 BREAST CANCER IN BLACKS: IMPACT OF GENOMICS,	93.393	1 R01 CA204819-01A1	240,686	26,985
RCA206563-02:04 MOLECULAR FUNCTIONS OF APE1 IN BARRE	93.393	5 R01 CA206563-04	98,382	10,635
RCA206564-02:04 MECHANISMS OF TUMORIGNENIC TRANSFORM	93.393	5 R01 CA206564-04	267,930	
RCA207401-02 INCREASING HPV VACCINE UPTAKE IN COMMUNITY-BA	93.393	5 R01 CA207401-02	697,626	414,699
RCA207466-01:03 ORAL MICROBIOME AND LUNG CANCER R	93.393	5 R01 CA207466-03	765,044	132,248
RCA207848-03 VITAMIN D AND COLORECTAL CANCER RISK: AN INTEGR	93.393	4 R00 CA207848-03	15,260	
RCA220137-01 MAGNETIC RESONANCE SPECTROSCOPY AND MOLECULAR	93.393	1 R21 CA220137-01	41,932	
UCA161045-06 EXOME SEQUENCING TO IDENTIFY NOVEL GENETIC FACT	93.393	5 U01 CA161045-06	121,204	
UCA173640-05 SHANGHAI MEN'S HEALTH STUDY	93.393	5 UM1 CA173640-05	527,029	378,235
UCA173640-06 SHANGHAI MEN'S HEALTH STUDY	93.393	5 UM1 CA173640-06	402,420	
UCA182910-04 SHANGHAI WOMEN'S HEALTH STUDY	93.393	5 UM1 CA182910-04	831,839	335,724
UCA182910-05 SHANGHAI WOMEN'S HEALTH STUDY	93.393	5 UM1 CA182910-05	1,034,975	5,147
UCA202979-01 -SOUTHERN COMMUNITY COHORT STUDY-VANDERBIL	93.393	1 U01 CA202979-01	25,450	5,219
UCA202979-02 SCCS VANDERBILT	93.393	5 U01 CA202979-02	2,663,385	45,444
PASS-THROUGH BOSTON MEDICAL-UCA187508-02:A PROSPECTIVE INVESTIGATION OF THE	93.393	5 U01 CA187508-02	41,466	
PASS-THROUGH BOSTON MEDICAL-UCA187508-03:A PROSPECTIVE INVESTIGATION OF THE	93.393	5 U01 CA187508-03	43,877	
PASS-THROUGH CALIFORNIA SYSTEMWIDE-RCA192156-02:PHARMACOGENOMICS OF MICROBULE TARGE	93.393	5 R01 CA192156-02	2,453	
PASS-THROUGH CALIFORNIA UCSF-RCA192156-03:PHARMACOGENOMICS OF MICROTUBULE TAR	93.393	5 R01 CA192156-03	138,967	
PASS-THROUGH CALIFORNIA UCSF-RCA197422-02:CANADIAN FLUOROSCOPY COHORT STUDY:	93.393	1 R01 CA197422-02	24,859	
PASS-THROUGH CALIFORNIA UCSF-RCA197422-03:CANADIAN FLUOROSCOPY COHORT STUDY:	93.393	1 R01 CA197422-03	21,707	
PASS-THROUGH CALIFORNIA-PCA138338-06:MECHANISMS OF ETHNIC/RACIAL DIFFERE	93.393	2 P01 CA138338-06	30,612	
PASS-THROUGH CALIFORNIA-PCA138338-07:MECHANISMS OF ETHNIC/RACIAL DIFFERE	93.393	2 P01 CA138338-07	27,749	
PASS-THROUGH CALIFORNIA-RCA209798-01-A1:INVESTIGATING THE CAUSE OF RACIA	93.393	1 R01 CA209798-01-A1	23,878	
PASS-THROUGH DUKE-RCA190428-03:HELICOBACTER PYLORI PROTEIN-SPECIFI	93.393	7 R01 CA190428-03	16,799	
PASS-THROUGH DUKE-RCA190428-04:HELICOBACTER PYLORI PROTEIN-SPECIFIC ANTIBODIES	93.393	5 R01 CA190428-04	1,116	
PASS-THROUGH FHCRC-RCA183570-04:PROMISS:PROSTATE MODELING TO IDENTI	93.393	4 R01 CA183570-04	8,646	

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Vanderbilt University Medical Center
Schedule of Expenditures of Federal Awards and State Financial Assistance
For the Year Ended June 30, 2018

Federal Grant/Pass-through Grantor/Project Name/Program or Cluster Title	CFDA Number	Federal/Pass-Through Award Number	Federal Expenditures	Passed to Sub-Recipients
Research and Development Cluster				
Department Of Health And Human Services				
PASS-THROUGH FHCRC-RCA183750-05:PROSTATE MODELING TO IDENTIFY SURVE	93.393	5 R01 CA183750-05	38,211	
PASS-THROUGH INDIANA-RCA157823-06:GENETICSUSCEOTIBILITY AND BIOMARKER	93.393	5 R01 CA157823-06	13,696	
PASS-THROUGH INDIANA-RCA207530-01:THE ROLE OF LMO2 IN THE PATHOGENESI	93.393	1 R01 CA207530-01	1,555	
PASS-THROUGH LEIDOS-HHSN261200800001E:LEIDOS 16X142 IDENTIFICATION OF MERS-COV	93.393	HHSN261200800001E	16,159	
PASS-THROUGH MOFFITT CANCER CENTER-HHSN261201100100C:NCI 9111 STUDY OF VORINSTAT (NSC 701852)	93.393	HHSN261201100100C	(234)	
PASS-THROUGH NEW YORK-RCA204113-02:FOREGUT MICROBIOME, GASTRIC INTESTI	93.393	1 R01 CA204113-02	306,380	
PASS-THROUGH NEW YORK-RCA204113-02:FOREGUT MICROBIOME, GASTRIC INTESTINAL METAPLA	93.393	5 R01 CA204113-03	21,450	
PASS-THROUGH NORTHWESTERN-HHSN261201200035I:HHSN26100009:CANCER PREVENTION AGENT DEVEL	93.393	HHSN261201200035I	79,828	
PASS-THROUGH THOMAS JEFFERSON-RCA160432-04:SMARCAL1 FUNCTION IN REPLICATION ST	93.393	5 R01 CA160432-04	(553)	
PASS-THROUGH THOMAS JEFFERSON-RCA215520-01A1:CONTRAST-ENHANCED ULTRASOUND EVAL	93.393	1 R01 CA215520-01A1	14,000	
PASS-THROUGH UNIV OF LOUISVILLE-RCA207538-01A1: ADDRESSING ELSI ISSUES IN UNREGU	93.393	7 R01 CA207538-01A1	153,966	
PASS-THROUGH VANDERBILT UNIVERSITY-HHSN126200800001E:INHIBITORS OF THE MYC-WDR5 INTERACTION	93.393	HHSN216200800001E	6,433	
PASS-THROUGH VANDERBILT UNIVERSITY-RCA118332-09:PARENT-CHILD COMMUNICATION ABOUT CA	93.393	4 R01 CA118332-09	4,869	
PASS-THROUGH VANDERBILT UNIVERSITY-RCA137013-01:04 GENOME-WIDE COPY NUMBER VARIATION & BREAST	93.393	5 R01 CA137013-04	197	
PASS-THROUGH VANDERBILT UNIVERSITY-RCA158473-05 GENOME SEQUENCING TO IDENTIFY NOVEL GENETIC FAC	93.393	4 R01 CA158473-05	(901)	
PASS-THROUGH VANDERBILT UNIVERSITY-RCA200709-01:FACILITATED RECRUITMENT OF MYC TO C	93.393	1 R01 CA200709-01	79,633	
Total Cancer Cause and Prevention Research			**18,624,406**	**3,432,141**
RCA109106-12A1 MRI DIFFUSION IN TUMORS USING OSCILLATING	93.394	2 R01 CA109106-12A1	137,084	
RCA138599-07 EVALUATION AND VALIDATION	93.394	6 R01 CA138599-07	35,195	
RCA163806-05:06 TSPO LIGANDS FOR CANCER IMAGING	93.394	5 R01 CA163806-06	205,265	4,011
RCA173593-05:06 COMPHREHENSIVE EVALUATION OF OGSE	93.394	5 R01 CA173593-06	94,591	
RCA184693-03:05 CERT IMAGING OF CANCER	93.394	5 R01 CA184693-05	216,611	25,130
UCA142565-08 QUANTITATIVE MRI FOR PREDICTING RESPONSE OF BRE	93.394	5 U01 CA142565-08	103,793	76,820
UCA142565-09 QUANTITATIVE MRI FOR PREDICTING RESPONSE OF BRE	93.394	5 U01 CA142565-09	175,175	37,163
UCA152662-07 VALIDATION OF BIOMARKERS OF RISK FOR THE EARLY	93.394	5 U01 CA152662-07	499,065	
UCA152662-08 VALIDATION OF BIOMARKERS OF RISK FOR THE EARLY	93.394	5 U01 CA152662-08	145,419	
UCA159988-06 VANDERBILT PROTEOME CHARACTERIZATION	93.394	6 U24 CA159988-06	2,557	2,557
UCA182364-04 TRANSLATING GENE-CALCIUM INTERACTIONS TO PRECIS	93.394	5 U01 CA182364-04	401,230	21,417
UCA182364-05 TRANSLATING GENE-CALCIUM INTERACTIONS TO PRECIS	93.394	5 U01 CA182364-05	259,956	7,000
UCA183727-04 TN VALLEY COOPERATIVE HUMAN TISSUE N	93.394	6 UM1 CA183727-04	55,334	
UCA183727-05 TENNESSEE VALLEY COOPERATIVE HUMAN TISSUE NETWO	93.394	5 UM1 CA183727-05	832,180	
UCA183727-06 TENNESSEE VALLEY COOPERATIVE HUMAN	93.394	5 UM1 CA183727-06	311,293	
UCA186145-03 NON-INVASIVE EVALUATION OF INDETERMINATE PULMON	93.394	5 U01 CA186145-03	167,311	152,682
UCA186145-04 NON-INVASIVE EVALUATION OF INDETERMINATE PULMON	93.394	5 U01 CA186145-04	334,103	89,095
PASS-THROUGH BOSTON CHILDREN'S-UCA184407-05:CANCER DEEP PHENOTYPE EXTRACTION FR	93.394	7 U24 CA184407-05	48,655	
PASS-THROUGH CSMC-RCA218526-01:CEDARS SINAI HIGH-THROUGHPUT PALMIT	93.394	1 R01 CA218526-01	67,443	
PASS-THROUGH IARC-UCA195603-01:BIOMARKERS OF HPV INFECTION AND TWO	93.394	5 U01 CA195603	15,073	
PASS-THROUGH IARC-UCA195603-02:BIOMARKERS OF HPV INFECTION AND TWO	93.394	1 U01 CA195603-02	5,946	

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Vanderbilt University Medical Center
Schedule of Expenditures of Federal Awards and State Financial Assistance
For the Year Ended June 30, 2018

Federal Grant/Pass-through Grantor/Project Name/Program or Cluster Title	CFDA Number	Federal/Pass-Through Award Number	Federal Expenditures	Passed to Sub-Recipients
Research and Development Cluster				
Department Of Health And Human Services				
PASS-THROUGH MIAMI-RCA158472-05:INTEGRATIVE PREDICTION MODELS FOR M	93.394	7 R01 CA158472-05	225,642	
PASS-THROUGH MIAMI-RCA200987-01A1:INTEGRATIVE STATISTICAL MODELS FO	93.394	1 R01 CA200987-01A1	147	
PASS-THROUGH MIAMI-RCA200987-02:INTEGRATIVE STATISTICAL MODELS FOR	93.394	1 R01 CA200987-02	86,653	
PASS-THROUGH MICHIGAN-RCA205414-01:VALIDATION OF 4-MIRRNA SIGNATURE FO	93.394	1 R21 CA205414-01	25,232	
PASS-THROUGH MSSM-CA163772-04:LUNG ADENOCARCINOMA INVASION GENOMICS	93.394	4 R01 CA163772-04	452	452
PASS-THROUGH MSSM-RCA163772-05:LUNG ADENOCARCINOMA INVASION GENOMI	93.394	5 R01 CA163772-05	80,224	72
PASS-THROUGH PRECYTE-RCA203455-01:DEVELOPMENT OF AN INDICATOR CELL AS	93.394	1 R43 CA203455	3,817	
PASS-THROUGH STANFORD-UCA190214-01:QUALIFICATION AND DEPLOYMENT OF IMA	93.394	1 U01 CA190214-01	(298)	
PASS-THROUGH STANFORD-UCA190214-03:QUALIFICATION AND DEPLOYMENT OF IMAGING BIOMARK	93.394	5 U01 CA190214-03	31,641	
PASS-THROUGH THOMAS JEFFERSON-RCA194307-01A1:2D AND 3D CONTRAST-ENHANCED ULTRA	93.394	1 R01 CA194307-01A1	21,271	
PASS-THROUGH VANDERBILT UNIVERSITY-RCA185747-01A1:CELLULAR LEVEL METABOLIC IMAGING	93.394	1 R01 CA185747	(1,083)	
PASS-THROUGH VANDERBILT UNIVERSITY-UCA183727-02 TN VALLEY COOPERATIVE HUMAN TISSUE NETWORK	93.394	5 UM1 CA183727-02	(2,570)	
Total Cancer Detection and Diagnosis Research			**4,584,406**	**416,399**
RCA121210-10 OVERCOMING ACQUIRED RESISTANCE TO EG	93.395	6 R01 CA121210-10	107,405	
RCA131225-08:10 THE ROLE OF AURORA KINASE A IN UPPER	93.395	5 R01 CA131225-10	56,005	1,140
RCA160700-05 MULTIFUNCTIONAL NANOPARTICLES FOR IM	93.395	6 R01 CA160700-05	15,545	
RCA166492-06; TARGETING RADIATION RESISTANCE IN GLIOBLAST	93.395	5 R01 CA166492-06	236,573	
RCA178613-05 CYCLIC DINUCLEOTIDES IN COMBINATORIAL IMMUNOTH	93.395	7 R01 CA178613-05	321,549	
RCA181491-03:04 DUSP4 IN BREAST CANCER: TUMOR SUPPRESSO	93.395	5 R00 CA181491-04	405,658	
RCA184387-03 EXPLOITING NOTCH INHIBITION AS A ME	93.395	6 R21 CA184387-03	140,701	128,566
RCA208631-01:02(PQ9) DUAL ACTION RSK INHIBITOR: TARGETING	93.395	5 R21 CA208631-02	228,700	66,919
UCA180847-04 VANDERBILT NETWORK LEAD ACADEMIC PAR	93.395	6 U10 CA180847-04	(1)	
UCA180847-05 VANDERBILT NETWORK LEAD ACADEMIC PARTICIPATING	93.395	5 U01 CA180847-05	377,386	
UCA180847-06 VANDERBILT NETWORK LEAD ACADEMIC PARTICIPATING	93.395	5 U10 CA180847-06	171,620	
PASS-THROUGH AADI-RCA171552-02:INVESTIGATION OF A NANOPARTICLE ALB	93.395	4 R42 CA171552-02	23,410	
PASS-THROUGH CHILDREN'S HOSP LA-RCA181050-02:THE ROLE OF KIR-FAVORABLY MISMATCHE	93.395	5 R01 CA181050-02	5,627	
PASS-THROUGH CHILDRENS PHILADELPHIA-RCA196854-01:PHARMACOLOGIC REVERSAL OF VENTRICUL	93.395	1 R01 CA196854	1,260	
PASS-THROUGH CHILDRENS PHILADELPHIA-UCA180886-01:COG CHILD H OF PHILADELPHIA NETWK G	93.395	1 U01 CA180886-01	45,471	
PASS-THROUGH CHILDRENS PHILADELPHIA-UCA180886-01:COG NCTN WORKLOAD INTENSITY	93.395	1 U10 CA180886-01	40,210	
PASS-THROUGH CHILDRENS PHILADELPHIA-UCA180886-01:COG STUDY CHAIR- NCTN U10CA180886	93.395	1 U01 CA180886-01	(2,888)	
PASS-THROUGH CHILDRENS PHILADELPHIA-UCA180886-02S7:BIQSFP-COG AALL1131 PER CASE REIM	93.395	1 U10 CA180886-02S7	(2,640)	
PASS-THROUGH CHILDRENS PHILADELPHIA-UCA189955-01:COG PER CASE REIMBURSEMENT: NCORP R	93.395	1 UG1 CA189955-01	17,409	
PASS-THROUGH DUKE-RCA184173-01A1:LIVE SYSTEM FOR SBRT TREATMENTS	93.395	1 R01 CA184173-01A1	47,119	
PASS-THROUGH ECOG-UCA180820-04:ECOG-ACRIN NETWORK GROUP OPERATIONS	93.395	5 U10 CA180820-04	12,471	
PASS-THROUGH ECOG-UCA180820-05:ECOG:BRE 1151:TOMOSYNTHESIS MAMMOGRAPHIC	93.395	5 U10 CA180820-05	879	
PASS-THROUGH ECOG-UCA180820-05:ECOG:GYN GY006:PHASE II TRIAL OF RA	93.395	5 U10 CA180820-05	3,021	
PASS-THROUGH ECOG-UCA180820-05:ECOG:HEM E1412-RAND PHII OP LBL R2C	93.395	5 U10 CA180820-05	51,974	
PASS-THROUGH ECOG-UCA180820-05:ECOG:MDS 1609:TO EVALUATE THE RECIS	93.395	5 U10 CA180820-05	6,738	

Accompanying notes follow this Schedule

Vanderbilt University Medical Center
Schedule of Expenditures of Federal Awards and State Financial Assistance
For the Year Ended June 30, 2018

Federal Grant/Pass-through Grantor/Project Name/Program or Cluster Title	CFDA Number	Federal/Pass-Through Award Number	Federal Expenditures	Passed to Sub-Recipients
Research and Development Cluster				
Department Of Health And Human Services				
PASS-THROUGH ECOG-UCA180820-05:ECOG-ACRIN NETWORK GROUP OPERATIONS	93.395	1 U10 CA180820-05	6,278	
PASS-THROUGH EMORY-UCA180950-03:ECOG-ACRIN THORACIC INTEGRATED TRAN	93.395	5 U10 CA180950-03	278	
PASS-THROUGH EMORY-UCA180950-04:ECOG-ACRIN THORACIC MALIGNANCIES IN	93.395	5 U10 CA180950-04	98,811	
PASS-THROUGH EMORY-UCA180950-05:ECOG-ACRIN THORACIC MALGNANCIES INTEGRATED TRAN	93.395	5 U01 CA180950-05	43,986	
PASS-THROUGH FHCRC-RCA118953-09:BMT 1380:CHRONIC GVHD RESPONSE MEASURE	93.395	4 R01 CA118953-09	12,871	
PASS-THROUGH FHCRC-RCA118953-10:IMPROVING OUTCOMES ASSESSMENT IN CH	93.395	5 R01 CA118953-10	8,859	
PASS-THROUGH JOHN WAYNE CANCER-RCA189163:MEL 0474 PROTOCOL # MORD LM/SL-CLND-1102	93.395	5 R01 CA189163-04	(2,486)	
PASS-THROUGH MOFFITT CANCER CENTER-CM-57018-16 EARLY THERAPEUTICS DEVELOPMENT WITH PHASE II	93.395	N01-CM-657018-16	(5,100)	
PASS-THROUGH MSKCC-PCA129243-10:TARGETS FOR THERAPY FOR CARCINOMAS	93.395	4 P01 CA129243-10	67,327	
PASS-THROUGH NRG FDN-UCA180868-04:NRG ONCOLOGY NETWORK GROUP OPERATIO	93.395	5 U10 CA180868-04	10,594	
PASS-THROUGH NRG FDN-UCA189867-03:NRG ONCOLOGY NCORP RESEARCH BASE	93.395	5 UG1 CA189867-03	1,197	
PASS-THROUGH NRG FDN-UCA189867-04:NRG ONCOLOGY NCORP RESEARCH BASE	93.395	5 UG1 CA189867-04 REVI	13,756	
PASS-THROUGH OHSU-UCA180888-04:SWOG NETWORK GROUP OPERATIONS CENTE	93.395	5 U10 CA180888-04	63,314	
PASS-THROUGH OHSU-UCA180888-05:SWOG NETWORK GROUP OPERATIONS CENTE	93.395	5 U10 CA180888-05	31,657	
PASS-THROUGH RUBICON-RCA192775-01A1:RUBICON - MODIFIED ANNEXIN V FOR	93.395	1 R43 CA192775	(4,769)	
PASS-THROUGH VANDERBILT UNIVERSITY-RCA116021-13:VU:IMPROVED THERAPY FOR P53WT MELAN	93.395	5 R01 CA116021-13	14,067	
PASS-THROUGH VANDERBILT UNIVERSITY-RCA116021-14:IMPROVED THERAPY FOR P53WT MELANOMA	93.395	5 R01 CA116021-14	22,529	
PASS-THROUGH VANDERBILT UNIVERSITY-RCA214043-02:MACROPHAGE-BASED OVARIAN CANCER IMMUNOTHERAPY	93.395	1 R01 CA214043-02	65,447	
PASS-THROUGH YALE-UCA186689-03:VIKTRIY EARLY CLINICAL TRIALS CONSO	93.395	5 UM1 CA186689-03	0	(1,311)
PASS-THROUGH YALE-UCA186689-04:VIKTRIY EARLY CLINICAL TRIALS	93.395	3 UM1 CA186689-04S1	44,251	
PASS-THROUGH YALE-UCA186689-04:VIKTRIY EARLY CLINICAL TRIALS CONSO	93.395	1 UM1 CA186689-04	50,862	1,204
PASS-THROUGH YALE-UCA186689-04:VIKTRIY-PC CONSORTIUM PHASE II SUPP	93.395	3 UM1 CA186689-04	41,645	
Total Cancer Treatment Research			**2,896,575**	**196,517**
RCA151566-06 ROLES FOR LRIG1 IN INTESTINAL NE	93.396	2 R01 CA151566-06	(1,106)	5,869
RCA162433-06 THE P450 EPOXYGENASES AS PRO-ONCO	93.396	5 R01 CA162433-06	158,898	72,614
RCA177681-03:06 HRIN-A1 IN LIPOGENESIS AND BREAST CANCER MET	93.396	5 R01 CA177681-06	459,023	46,597
RCA187307-03 MOUSE MODEL OF INVASIVE COLON CANCE	93.396	6 R21 CA187307-03	55,950	
RCA193219-02:04 THE ROLE OF AXL-ABLE AXIS IN BARR	93.396	5 R01 CA193219-04	283,170	
RCA194198-02:03 CHARACTERIZATION OF BREAST CANCER DORMANCY I	93.396	5 R00 CA194198-03	287,238	100
RCA197570-01A1 INTEGRATED APPROACH TO STUDY EARLY AND LATE E	93.396	1 R35 CA197570-01A1	741,017	
RCA197570-02 INTEGRATED APPROACH TO STUDY EARLY AND LATE EVE	93.396	5 R35 CA197570-02	255,108	
RCA200681-01A1:02 ROLE OF ADENOSINE IN TGF-BETA EFFECTS IN	93.396	5 R01 CA200681-02	393,577	
RCA217987-01A1 METABOLIC BARRIERS TO T CELL ACTIVATION	93.396	1 R01 CA217987-01A1	77,621	
RCA46413-29 ROLE OF EGFR LIGANDS IN NEOPLASIA	93.396	6 R01 CA46413-29	46,517	
RCA69457-20S1 EMT REGULATION IN GASTROINTESTINAL	93.396	3 R01 CA69457-20S1	(1,513)	
RCA93999-15:17 TARGETS OF GENE OVEREXPRESSION AT 1	93.396	5 R01 CA93999-17	17,134	
RCA95004-13:15 ENDOTHELIAL MTOR SIGNALING IN TU-B	93.396	5 R01 CA95004-15	249,956	
UCA163056-06 BARRETT'S ESOPHAGUS TRANSLATIONAL RE	93.396	6 U01 CA163056-06	(337)	

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Vanderbilt University Medical Center
Schedule of Expenditures of Federal Awards and State Financial Assistance
For the Year Ended June 30, 2018

Federal Grant/Pass-through Grantor/Project Name/Program or Cluster Title	CFDA Number	Federal/Pass-Through Award Number	Federal Expenditures	Passed to Sub-Recipients
Research and Development Cluster				
Department Of Health And Human Services				
UCA163056-07 BARRETT'S ESOPHAGUS TRANSLATIONAL RESEARCH NETW	93.396	2 U24 CA163056-07	361,859	
UCA163056-08 BARRETT'S ESOPHAGUS TRANSLATIONAL RESEARCH NETW	93.396	5 U24 CA163056-08	105,245	
UCA179514-05 SECRETED RNA DURING CRC PROGRESSION: BIOGENESIS	93.396	5 U19 CA179514-05	407,734	299,271
UCA179514-06 SECRETED RNA DURING CRC PROGRESSION: BIOGENESIS	93.396	5 U19 CA179514-06	778,068	323,469
UCA196405-03 CELLULAR, MOLECULAR AND QUANTITATIVE IMAGING AN	93.396	5 U01 CA196405-03	393,586	329,357
UCA196405-04 CELLULAR, MOLECULAR AND QUANTITATIVE IMAGING AN	93.396	5 U01 CA196405-04	650,585	278,487
UCA196405-04S1 CELLULAR, MOLECULAR AND QUANTITATIVE IMAGING	93.396	3 U01 CA196405-04S1	37,187	
PASS-THROUGH KANSAS-RCA210210-01A1:TARGETING CYCLIN E IN OVARIAN CAN	93.396	1 R21 CA210210-01A1	39,569	
PASS-THROUGH LEIDOS-HHSN261200800001E:LEIDOS 16X142 IDENTIFICATION-OPT PERIOD 1	93.396	HHSN261200800001E	100,822	
PASS-THROUGH MSKCC-UCA213274-01:COORDINATING CENTER FOR NCI SMALL C	93.396	1 U24 CA213274-01	89,178	
PASS-THROUGH MSKCC-UCA213274-02:COORDINATING CENTER FOR THE NCI SMALL CELL LUNG	93.396	5 U24 CA213274-02	37,634	
PASS-THROUGH TEXAS HEALTH SCIENCE HOUSTON-UCA194215-01A1:ADVANCING CANCER PHARMACOEPIDEMIO	93.396	1 U24 CA194215-01A1	28,363	
PASS-THROUGH TEXAS HEALTH SCIENCE HOUSTON-UCA194215-02:ADVANCING CANCER PHARMACOEPIDEMIOLO	93.396	5 U24 C194215-02	160,369	5,166
PASS-THROUGH TOLEDO-RCA202176-02:AN EPIGENETIC LINK FROM CXCL12-CXCR	93.396	7 R21 CA202176-02	2,087	
PASS-THROUGH VANDERBILT UNIVERSITY-CA034590-33:CHEMOKINE SIGNALS IN THE PREMETASTAT	93.396	5 R01 CA34590-33	721	
PASS-THROUGH VANDERBILT UNIVERSITY-CA84239-10 PREVENTION AND METASTASIS: PROJECT 1- FINAL FRO	93.396	5 U01 CA84239-10	(601)	
PASS-THROUGH VANDERBILT UNIVERSITY-RCA034590-34:CHEMOKINE SIGNALS IN THE PREMETASTA	93.396	5 R01 CA34590-34	34,483	
PASS-THROUGH VANDERBILT UNIVERSITY-RCA064140-22:THE ROLE OF AML 1-ETO IN ACUTE LEUK	93.396	5 R01 CA64140-22	25,435	
PASS-THROUGH VANDERBILT UNIVERSITY-RCA163499-01A1:ROLE OF MECHANTRANSDUCTION IN PRO	93.396	1 R01 CA163499-01A1	52,186	
PASS-THROUGH VANDERBILT UNIVERSITY-RCA178030-03:REGULATION OF TRANSCRIPTION & TUMOR	93.396	5 R01 CA178030-03	69,678	
PASS-THROUGH VANDERBILT UNIVERSITY-RCA197571-02:CANCER AND CONTEXT	93.396	1 R35 CA197571-02	3,659	
PASS-THROUGH VANDERBILT UNIVERSITY-UCA202229-03:PHYSICAL DYNAMICS OF CANCER RESPONS	93.396	5 U01 CA202229-03	39,978	
PASS-THROUGH VANDERBILT UNIVERSITY-UCA84239-09 SUB UNIV OF NC MOUSE MODELS OF HUMAN PROJECT 1	93.396	5 U01 CA84239-09	0	(601)
PASS-THROUGH VIRGINIA-RCA166458-05:BLIMP-1 MEDIATED REGULATION OF CD8	93.396	5 R01 CA166458-05	21,465	
Total Cancer Biology Research			**6,461,540**	**1,360,329**
PCA210300-01 REGIONAL CENTER OF RESEARCH EXCELLENCE IN CANCE	93.397	1 P20 CA210300-01	134,910	101,968
PCA210300-02 REGIONAL CENTER OF RESEARCH EXCELLENCE IN CANCE	93.397	5 P20 CA210300-02	200,370	150,931
PCA68485-21 CANCER CTR SUPP GRANT: SENIOR LEADERS	93.397	5 P30 CA68485-21	2,010,800	679,759
PCA68485-22 FACULTY 6 J RATHMELL	93.397	5 P30 CA68485-22	8,170	
PCA68485-22 SENIOR LEADERS	93.397	5 P30 CA68485-22	4,297,227	214,013
PCA95103-15 SPORE IN GI CANCER - PROJECT 1	93.397	6 P50 CA95103-15	783,214	4,000
PCA98131-15 BREAST SPORE PROJECT 1	93.397	5 P50 CA98131-15	816,205	285,499
PCA98131-16 BREAST SPORE PROJECT 1	93.397	5 P50 CA98131-16	1,597,975	
UCA163072-07 - MCC,VICC & TSU: ADMIN	93.397	2 U54 CA163072-07	374,935	82,554
UCA163072-08 - MCC,VICC & TSU: ADMIN	93.397	5 U54 CA163072-08	948,887	25,842
PASS-THROUGH CASE WESTERN RESERVE-PCA150964-06A1:CASE GI SPORE	93.397	2 P50 CA150964-06A1	21,184	
PASS-THROUGH DANA-FARBER CANCER-PCA168504-04:SPORE:DANA-FARBER/HARVARD CANCER CE	93.397	4 P50 CA168504-04	9,812	
PASS-THROUGH VANDERBILT UNIVERSITY-UCA217450-01A1:PHENOTYPE HETEROGENEITY AND DYNAMICS(HEMONC)	93.397	1 U54 CA217450-01A1	1,477	

Accompanying notes follow this Schedule

Vanderbilt University Medical Center
Schedule of Expenditures of Federal Awards and State Financial Assistance
For the Year Ended June 30, 2018

Federal Grant/Pass-through Grantor/Project Name/Program or Cluster Title	CFDA Number	Federal/Pass-Through Award Number	Federal Expenditures	Passed to Sub-Recipients
Research and Development Cluster				
Department Of Health And Human Services				
Total Cancer Centers Support Grants			**11,205,164**	**1,544,566**
FCA216942-01 EARLY ASSESSMENT OF RADIATION RESPONSE IN BRAI	93.398	1 F32 CA216942-01	59,166	
FCA224962-01 DISSECTING THE MOLECULAR MECHANISMS OF STEM CEL	93.398	1 F32 CA224962-01	13,953	
KCA148912-06 HIGH-THROUGHPUT ANALYSIS OF MUTATI	93.398	6 K08 CA148912-06	22,152	
KCA168936-05:06 ASSESSMENT OF TUMOR EARLY RESPONSE	93.398	5 K25 CA168936-06	116,433	
KCA172294-04:06 UNRAVELING GENETIC DETERMINANTS OF	93.398	5 K07 CA172294-06	134,532	5,258
KCA172355-05:07 ENHANCING TANSLATIONAL SCIENCE VI	93.398	5 K24 CA172355-07	286,695	
KCA176219-03:05 APPLYING COMPRESSED SENSING DYNAM	93.398	5 K25 CA176219-05	109,148	
KCA204726-01A1:02 PREDICTING AND PROFILING LONG-TERM SURVIV	93.398	5 K23 CA204726-02	153,842	
KCA215360-01A1 POLYUNSATURATED FATTY ACIDS AND COLORECTAL TU	93.398	1 K99 CA215360-01A1	76,801	
KCA218247-01A1 HUMAN PAPILLOMAVIRUS-SPECIFIC BIOMARKERS FOR	93.398	1 K07 CA218247-01A1	30,517	
KCA218892-01A1 UNCOVERING ROLES OF POLYUNSATURATED FATTY ACI	93.398	1 K99 CA218892-01A1	20,983	
KCA225404-01A1 TUMOR-INFILTRATING LYMPHOCYTES IN ANAL CANCER	93.398	1 K07 CA225404-01A1	6,460	
KCA90625-17 VANDERBILT CLINICAL ONCOLOGY RESEARCH CAREER DEV	93.398	2 K12 CA90625-17	(3,588)	
KCA90625-18 VANDERBILT CLINICAL ONCOLOGY RESEARCH CAREER DE	93.398	5 K12 CA90625-18	604,961	4,411
RCA160056-06 VANDERBILT TRAINING PROGRAM IN MOLECULAR AND GE	93.398	5 R25 CA160056-06	209,426	
TCA106183-13 SURGICAL ONCOLOGY TRAINING GRANT	93.398	5 T32 CA106183-13	(2,763)	
TCA106183-14 SURGICAL ONCOLOGY TRAINING GRANT	93.398	5 T32 CA106183-14	266,248	8,251
TCA154267-06 CONDUCTING RESEARCH IN PEDIATRIC HEM	93.398	6 T32 CA154267-06	(469)	
TCA160056-07 VANDERBILT TRAINING PROGRAM IN MOLECULAR AND GE	93.398	2 T32 CA160056-07	160,524	
PASS-THROUGH VANDERBILT UNIVERSITY-TCA009592-28:MICROENVIRONMENTAL INFLUENCES IN CA	93.398	4 T32 CA09592-29	6,362	
Total Cancer Research Manpower			**2,271,382**	**17,919**
PASS-THROUGH VANDERBILT UNIVERSITY-90IF0024-01 IMPROVING TRAUMA OUTCOMES	93.433	90 IF0024-01	202	
PASS-THROUGH VANDERBILT UNIVERSITY-90IFRE0001-1-01-00:VU:TOE JOINT ARTICULATION IN PASSIVE AND	93.433	90IFRE0001-1-01-00	4,324	
Total ACL National Institute on Disability, Independent Living, and Rehabilitation Research			**4,526**	
PASS-THROUGH TN HEALTH-51472:SURVEILLANCE SERVICES - EIP INFRASTRUCTURE	93.521	51472:ST TN	170,218	3,176
Total The Affordable Care Act: Building Epidemiology, Laboratory, and Health Information Systems Capacity in the Epidemiology and Laboratory Capacity for Infe			**170,218**	**3,176**
PASS-THROUGH VANDERBILT UNIVERSITY-UIP00464-05S2 ACUTE RESPIRATORY VIRAL SURVEILLANCE	93.533	3 U01 IP00464-05S2	(20)	
Total Prevention and Public Health Fund (Affordable Care Act): Enhanced Surveillance for New Vaccine Preventable Disease			**(20)**	
CMS331549-01-02 TRANSFORMING CLINICAL PRACTICE (TCPI) YR 2	93.638	1 L1 CMS331549-01	3,054,274	511,659
CMS331549-02-00 TRANSFORMING CLINICAL PRACTICE INITI (TCPI)	93.638	1 L1 CMS331549-02-00	2,544,714	138,243
Total ACA-Transforming Clinical Practice Initiative: Practice Transformation Networks (PTNs)			**5,598,988**	**649,901**
PASS-THROUGH VANDERBILT UNIVERSITY-HS19356-01: COMPARATIVE EFFECTIVENESS OF TREATMENT FO	93.715	1 R01 HS19356-01	(6,028)	(6,028)
Total Recovery Act - Comparative Effectiveness Research			**(6,028)**	**(6,028)**
PASS-THROUGH ACADEMYHEALTH-90CL0001/01-00:USING LOCAL DATA AND RESOURCES TO REDUCE INFA	93.727	90CL0001/01-00	77	
Total Beacon Communities - Community Health Peer Learning Program			**77**	
DHL137166-01 IMMUNOPHENOTYPING OF HUMAN HYPERTENSION USING S	93.837	1 DP2 HL137166-01	383,995	8,458
FHL137385-01 HIGH-THROUGHPUT DISCOVERY OF PATHOGENIC CARDIA	93.837	1 F32 HL137385-01	45,259	

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Vanderbilt University Medical Center
Schedule of Expenditures of Federal Awards and State Financial Assistance
For the Year Ended June 30, 2018

Federal Grant/Pass-through Grantor/Project Name/Program or Cluster Title	CFDA Number	Federal/Pass-Through Award Number	Federal Expenditures	Passed to Sub-Recipients
Research and Development Cluster				
Department Of Health And Human Services				
FHL137392-01 NOVEL MECHANISMS OF ARRHYTHMOGENESIS AND DILATE	93.837	1 F32 HL137392-01	8,515	
FHL137394-01 ROLE OF PANNEXIN CHANNELS IN ARRHYTHMOGENESIS	93.837	1 F32 HL137394-01	42,300	
KHL103836-06 MIDCAREER INVESTIGATOR AWARD IN PATIEN	93.837	2 K24 HL103836-06	197,968	
KHL109019-06 THE VANDERBILT EMERGENCY MEDICINE RE	93.837	6 K12 HL109019-06	12,012	
KHL111420-05 CARDIAC REPAIR BY REPROGRAMMING FIBR	93.837	6 K08 HL111420-05	4,589	
KHL116803-05:06 THE ROLE OF RAF-MEK SIGNALING IN THE	93.837	5 K08 HL116803-06	131,501	
KHL119602-04:05 EFFECT OF DIPEPTIDYL PEPTIDASE 4 I	93.837	5 K23 HL119602-05	97,150	
KHL121045-04:05 THE ANTI-FIBROTIC EFFECTS OF NEUR	93.837	5 K01 HL121045-05	196,776	
KHL121671-04:05 DIVERSE ROLES OF INTERLEUKIN 17 ISOFORM	93.837	5 K08 HL121671-05	154,869	
KHL123938-03:05 QUANTITATIVE ASSESSMENT- CARDIAC DIS	93.837	5 K23 HL123938-05	84,981	
KHL125670-02:03 RANDOMIZED, ED-BASED INTERVENTION T	93.837	5 K23 HL125670-03	123,625	
KHL127104-02:04 GROW BABY IMPROVING MATERNAL GES	93.837	5 K23 HL127104-04	190,310	
KHL127130-02:04 ENHANCING INTERFACILITYTRANSF	93.837	5 K23 HL127130-04	151,344	
KHL127704-02:04 ATRIAL FIBRILLATION SUSCEPTIBILITY	93.837	5 K23 HL127704-03	198,181	
KHL128928-02 THE NATRIURETIC PEPTIDE SYSTEM IN AFRICAN-AMER	93.837	5 K23 HL128928-02	186,847	
KHL130497-02:04 ROLE OF SALT, ISOKETAL-MODIFIED PROTEIN	93.837	5 K01 HL130497-04	163,220	
KHL133117-01:02 THE VANDERBILT EMERGENCY CARE RESEARCH TRAIN	93.837	5 K12 HL133117-02	239,374	
KHL133477-01A1 IMPROVING THE SCREENING CRITERIA THAT TRIGGER	93.837	1 K23 HL133477-01A1	144,043	
KHL135442-01 SCN5A (NAV1.5): PREDICTING THE CONSEQUENCE OF M	93.837	1 K99 HL135442-01	124,886	15,058
KHL135461-01 SOX6 ROLE IN RENIN EXPRESSION DURING JUXTAGLOME	93.837	1 K01 HL135461-01	172,362	
KHL138088-01 ROLE OF P73 IN COPD PATHOGENESIS	93.837	1 K08 HL138088-01	133,971	
KHL140278-01 INTRAUTERINE PROGRAMMING OF DIABETES INDUCED CA	93.837	1 K01 HL140278-01	23,126	
PHL116263-03 PROJ 1 HDL FUNCTION	93.837	6 P01 HL116263-03	(15,414)	(596)
PHL116263-04 HDL FUNCTION IN HUMAN DISEASE (PROJ 1)	93.837	5 P01 HL116263-04	1,968,009	249,662
PHL116263-05 HDL FUNCTION PROJECT 1 - LINTON	93.837	5 P01 HL116263-05	329,105	
PHL128203-01A1 PROJ 1 VUMC 1MULTIDISCIPLINARY APPROACHES TO	93.837	1 P01 HL128203-01A1	156,367	156,661
PHL128203-02 VUMC PROJ 1: MULTIDISCIPLINARY APPROACHES TO H	93.837	5 P01 HL128203-02	2,241,252	1,629,364
PHL129941-01A1 THE ROLE OF INFLAMMATION IN CARDIOVASCUL ADMI	93.837	1 P01 HL129941-01A1	523,959	429,135
PHL129941-02 THE ROLE OF INFLAMMATION IN CARDIOVASCULAR ADMI	93.837	5 P01 HL129941-02	1,630,589	765,396
PHL56693-20 AUTONOMIC CARDIOVASCULAR REGULATION	93.837	6 P01 HL56693-20	627,271	17,856
PHL92870-06 MECHANISMS FIBR- PROJECT 1	93.837	2 P01 HL92870-06	(82,528)	
RHL070715-14A1 PREVENTION OF VEIN GRAFT FAILURE	93.837	2 R01 HL070715-14A1	64,433	
RHL105731-05 METHODS TO REDUCE VEIN HARVEST INJ	93.837	6 R01 HL105731-05	13,007	
RHL109388-06 HEALTH LITERACY, HOSPITAL DISCHARGE, A	93.837	6 R01 HL109388-06	21,842	1,054
RHL111516-05:06 VASCULAR FACTORS UNDERLYING ABNORMAL	93.837	5 R01 HL111516-06	180,107	
RHL118386-04:05 TIE TEK MODULATION OF CARDIAC DEVELO	93.837	5 R01 HL118386-05	399,738	400
RHL118392-04:05 OPTIMAL DESIGN: CHALLENGE-RESPONSE	93.837	5 R01 HL118392-05	295,295	267,264
RHL118579-04:05 LYMPHATIC REGULATION OF SKIN ELECTR	93.837	6 R01 HL118579-04	126,585	

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Vanderbilt University Medical Center
Schedule of Expenditures of Federal Awards and State Financial Assistance
For the Year Ended June 30, 2018

Federal Grant/Pass-through Grantor/Project Name/Program or Cluster Title	CFDA Number	Federal/Pass-Through Award Number	Federal Expenditures	Passed to Sub-Recipients
Research and Development Cluster				
Department Of Health And Human Services				
RHL118952-05 REVISED SCN5A MUTATIONS AND DIALTED	93.837	5 R01 HL118952-05	206,805	2,037
RHL119234-03:04 HEART FAILURE IN CANCER PATIENTS	93.837	5 R01 HL119234-04	377,960	200
RHL121139-04:05 PROCESSING & PRESENTATION OF MINOR	93.837	5 R01 HL121139-05	227,484	
RHL121429-03 COGENT CONSORTIUM META-ANALYSIS OF B	93.837	6 R21 HL121429-03	(74)	
RHL122847-03:05 SPLANCHNIC CIRCULATION AND BLOOD PRES	93.837	5 R01 HL122847-05	386,002	23,281
RHL123829-03 RSV IMMUNOPROPHYLAXIS IMPACT ON RSV	93.837	6 R21 HL123829-03	23,271	(285)
RHL124116-02:04 SIRTUIN 3 IMPAIRMENT AND SOD2 ACETYLA	93.837	5 R01 HL124116-04	511,701	
RHL124935-03:05 TOWARD MECHANISM BASED APPROACH TO	93.837	5 R01 HL124935-05	391,923	118,697
RHL125032-04 IMMUNE FUNCTION & THE RISK OF CVD AMONG HIV	93.837	5 R01 HL125032-04	53,291	52,751
RHL125032-05 IMMUNE FUNCTION AND THE RISK OF CVD AMONG HIV I	93.837	5 R01 HL125032-05	720,298	577,190
RHL125426-03:05 CARDIOVASCULAR CONSEQUENCES OF PEPTID	93.837	5 R01 HL125426-05	529,197	8,100
RHL125865-03:04 THE ROLE OF THE T CELL IN THE GENESI	93.837	5 R01 HL125865-04	274,078	
RHL127173-02:03 MACROPHAGE SR-BI REGULATES AUTO	93.837	5 R01 HL127173-03	542,144	
RHL127218-01A1 PGE2 SIGNALING IN HYPERTENSION: THE ROLE OF E	93.837	1 R56 HL127218-01A1	107,386	
RHL127442-01A1 ECTONUCLEOTIDASES IN ISCHEMIC HEART DISEASE	93.837	1 R01 HL127442-01A1	151,969	3,293
RHL128386-01:02 DUCTUS ARTERIOSUS REGULATION BY ANION CHA	93.837	5 R01 HL128386-2	687,198	
RHL128983-01A1 PDE5 INHIBITION FOR OBESITY-RELATED CARDIOMET	93.837	1 R01 HL128983-01A1	(11,642)	
RHL128983-02 PDE5 INHIBITION FOR OBESITY-RELATED CARDIOMETAB	93.837	5 R01 HL128983-02	652,255	
RHL128983-03 PDE5 INHIBITION FOR OBESITY-RELATED CARDIOMETAB	93.837	5 R01 HL128983-03	59,837	
RHL128996-02:03 HDL-MICRORNA INTERCELLULAR COMMUNICATION IN	93.837	5 R01 HL128996-03	495,878	
RHL131977-01 VUMC THE IMPACT OF DIABETES ON REVASCULARIZATIO	93.837	1 R01 HL131977-01	1,221	1,423
RHL131977-02 THE IMPACT OF DIABETES ON REVASCULARIZATION I	93.837	5 R01 HL131977-02	318,846	63,586
RHL131977-03 BEST-CLI VUMC PRIME YEAR 3	93.837	5 R01 HL131977-03	7,807	
RHL132338-01A1:02 MATERNAL TRAUMATIC STRESS, OXIDATIVE STRES	93.837	1 R01 HL132338-02	669,696	327,482
RHL132805-02 KATP CHANNELS AS BIOMECHANICAL SENSORS IN THE	93.837	5 R21 HL132805-02	125,267	
RHL133127-01A1:02 NOVEL PATHOPHYSIOLOGICAL TARGETS IN ATRIA	93.837	5 R01 HL133127-02	632,135	16,044
RHL133290-01A1 SIGNALING MECHANISMS GOVERNING MYOCARDIAL FIB	93.837	1 R01 HL133290-01A1	349,652	200
RHL133786-02 EXPLORING STATIN PLEIOTROPIC EFFECTS WITHIN	93.837	5 R01 HL133786-02	339,208	1,060
RHL133860-01 TISSUE SODIUM, INFLAMMATION, AND BLOOD PRESSURE	93.837	1 R01 HL133860-01	354,298	338,366
RHL133860-02 VUMC TISSUE SODIUM, INFLAMMATION, AND BLOOD PRE	93.837	5 R01 HL133860-02	644,968	466,632
RHL134895-01A1 PROSTAGLANDIN E2, IMMUNITY AND HYPERT	93.837	1 R01 HL134895-01A1	261,100	
RHL135011-01A1:02 ROLE OF THE THROMBOXANE PROSTANOID RECEPTO	93.837	5 R01 HL135011-02	435,778	
RHL135129-01A1 NOVEL APPROACH TO ENHANCE MYOCARDIAL PERFORMA	93.837	1 R01 HL135129-01A1	217,132	
RHL135453-01:02 TRAJECTORY OF ANTI-MULLERIAN HORMONE DECLINE	93.837	5 R03 HL135453-02	83,366	5,665
RHL136824-01A1 CELL STATE SPECIFIC MODIFIERS OF PATHOLOGICAL	93.837	1 R01 HL136824-01A1	391,333	
RHL138519-01 FUNCTIONAL HETEROGENEITY OF CARDIAC REPARATIVE	93.837	1 R01 HL138519-01	362,823	
RHL140016-01 MECHANISMS OF IMMUNE ACTIVATION IN HYPERTENSION	93.837	1 R35 HL140016-01	312,958	
RHL140074-01 GENOMIC AND PHENOMIC ARCHITECTURE OF HEART	93.837	1 R01 HL140074-01	114,878	

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Vanderbilt University Medical Center
Schedule of Expenditures of Federal Awards and State Financial Assistance
For the Year Ended June 30, 2018

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Research and Development Cluster				
Department Of Health And Human Services				
RHL140145-01 SALT, BLOOD PRESSURE, AND INFLAMMATION	93.837	1 R01 HL140145-01	108,936	
RHL140264-01 DEFINING CARDIOMYOCYTE REPROGRAMMING INDUCED	93.837	1 R03 HL140264-01	78,993	
RHL37675-26 REGULATION OF CARDIAC MYOCATE DIFFERE	93.837	5 R01 HL37675-26	180,713	10,886
RHL39006-28:29 IMMUNITY, INFLAMMATION AND HYPERTEN	93.837	6 R01 HL39006-28	200,294	11,700
RHL49989-22 MODULATION OF CARDIAC	93.837	6 R01 HL49989-22	1,667	1,667
RHL70715-12:13 PREVENTION OF VEIN GRAFT FAILURE	93.837	5 R01 HL70715-13	170,788	
RHL71670-14 ARRHYTHMIA MECHANISMS IN SAR	93.837	5 R01 HL71670-14	118,688	
RHL81326-11 FACTOR XI IN THROMBOSIS	93.837	5 R01 HL81326-11	250,477	
RHL81707-11 MEDICATIONS AND THE RISK OF SUDDEN CA	93.837	6 R01 HL81707-11	18,581	
RHL94786-05A1:07 OUTCOME DEPENDENT SAMPLING OF LONGITUDINAL	93.837	5 R01 HL94786-07	492,784	209,727
RHL96223-08 NIH - SHORT TERM TRAINING FOR MINORITY STUDE	93.837	5 R25 HL96223-08	26,027	
RHL96223-09 SHORT TERM TRAINING FOR MINORITY STUDENTS	93.837	5 R25 HL096223-09	38,030	
THL105334-06 DEVELOPMENTAL DETERMINANTS OF CARDIOVAS	93.837	6 T32 HL105334-06	9,001	
THL105334-07 DEVELOPMENTAL DETERMINANTS OF CARDIOVASCULAR DI	93.837	2 T32 HL105334-07	420,902	
UHL100398-08 PROJECT 1 OPTIMIZING CARDIO	93.837	6 U01 HL100398-08	34	
UHL103620-07 GROWING RIGHT ONTO WELLNESS (GROW): CH	93.837	6 U01 HL103620-07	174,871	10,546
UHL122904-04 RATIONAL INTEGRATION OF GENOMIC HEALTHCARE TEST	93.837	6 U01 HL122904-04	210,474	6,000
UHL131911-03 ROLE OF GENETIC VARIANTS IN SUDDEN DEATH IN	93.837	5 U01 HL131911-03	564,391	
UHL131911-04 ROLE OF GENETIC VARIANTS IN SUDDEN DEATH	93.837	5 U01 HL131911-04	233,554	
UHL65962-14:15 PHARMACOGENOMICS OF ARRHYTHMIA THERAP	93.837	6 U19 HL65962-15	2,446	
PASS-THROUGH ALABAMA-RHL128044-02:PANNEXIN CHANNELS IN CARDIAC ARRHYT	93.837	7 R01 HL128044-02	(122)	
PASS-THROUGH ALABAMA-RHL128044-03:PANNEXIN CHANNELS IN CARDIAC ARRHYT	93.837	5 R01 HL128044-03	102,494	
PASS-THROUGH ALABAMA-RHL128044-04:PANNEXIN CHANNELS IN CARDIAC ARRHYTHMIAS	93.837	5 R01 HL128044-04	49,690	
PASS-THROUGH ALABAMA-RHL128563-03:CARDIOMYOCYTE-MEDIATED MECHANISMS O	93.837	5 R01 HL128563-03	18,165	
PASS-THROUGH ALABAMA-RHL128563-04:CARDIOMYOCYTE-MEDIATED MECHANISMS OF ISCHEMIA	93.837	5 R01 HL128563-04	25,942	
PASS-THROUGH ALABAMA-UHL120338-04:ANTIHYPERTENSIVE THERAPY FOR MILD C	93.837	5 U01 HL120338-04	22,006	
PASS-THROUGH BOSTON-RHL126136-02:FRAMINGHAM HEART STUDY-BOSTON UNIVE	93.837	5 R01 HL126136-02	2,160	
PASS-THROUGH BOSTON-RHL126136-03:FRAMINGHAM HEART STUDY-BOSTON UNIVERSITY-DUNCAN	93.837	5 R01 HL126136-03	24,495	
PASS-THROUGH BWH-HL130163-03:INFLUENZA VACCINE TO EFFECTIVELY STOP CARDIO THO	93.837	5 U01 HL130163-03	6,344	
PASS-THROUGH BWH-PHL112349-02 USING GENETICS FOR EARLY	93.837	5 P50 HL112349-02	48,324	
PASS-THROUGH BWH-RHL122225-03:IMPROVING QUALITY BY MAINTAINING AC	93.837	5 R01 HL122225-03	12,231	
PASS-THROUGH BWH-UHL123336-01:RANDOMIZED TRIAL TO PREVENT VASCULA	93.837	1 U01 HL123336-01	8,402	
PASS-THROUGH BWH-UHL130163-02:INFLUENZA VACCINE TO EFFECTIVELY ST	93.837	5 U01 HL130163-02	75,926	
PASS-THROUGH CALIFORNIA UCSF-RHL126555-01:SUDDEN CARDIAC DEATH-UCSF	93.837	1 R01 HL126555-01	6,249	6,230
PASS-THROUGH CALIFORNIA UCSF-RHL126555-04:CARDIAC PATHOLOGY AND RISK FACTORS	93.837	5 R01 HL126555-04	44,655	
PASS-THROUGH CALIFORNIA UCSF-RHL129856-01A1:PROTEIN BIOMARKERS FOR CVD PREDIC	93.837	1 R01 HL129856-01A1	93,905	
PASS-THROUGH CCHMC-HL105333-05: NATIONAL BIOLOGICAL SAMPLE AND DATA REPOSITORY	93.837	4 R24 HL105333-05	4,104	
PASS-THROUGH CCHMC-RHL105333-05:NATIONAL BIOLOGICAL SAMPLE AND DATA REPOSI	93.837	4 R24 HL105333-05	21,401	

Accompanying notes follow this Schedule

Vanderbilt University Medical Center
Schedule of Expenditures of Federal Awards and State Financial Assistance
For the Year Ended June 30, 2018

Federal Grant/Pass-through Grantor/Project Name/Program or Cluster Title	CFDA Number	Federal/Pass-Through Award Number	Federal Expenditures	Passed to Sub-Recipients
Research and Development Cluster				
Department Of Health And Human Services				
PASS-THROUGH CCHMC-UHL127672-03:RLDC: MOLECULAR PATHWAY-DRIVEN DIAG	93.837	1 U54 HL127672-03	11,629	
PASS-THROUGH CCHMC-UHL127672-03:RLDC:MOLECULAR PATHWAY-DRIVEN DIAGN	93.837	5 U54 HL127672-03	125,232	
PASS-THROUGH CCHMC-UHL131755-01A1:MULTICENTER INTERVENTIONAL LYMPHA	93.837	1 U01 HL131755-01A1	9,302	
PASS-THROUGH CCHMC-UHL131755-02:MULTICENTER INTERVENTIONAL LYMPHANG	93.837	5 U01 HL131755-02	15,066	
PASS-THROUGH DARTMOUTH-RHL130828-01A1:INFORMATION EXTRACTION FROM :EMRS	93.837	1 R01 HL130825-01A1	26,617	26,617
PASS-THROUGH DARTMOUTH-RHL130828-02:INFORMATION EXTRACTION FROM EMRS TO	93.837	5 R01 HL130828-02 REVI	294,378	47,602
PASS-THROUGH DUKE-UHL084904-11:PROTOCOL TITLE: ENTRESTOTM (LCZ696)	93.837	5 U10 HL084904-11	7,833	
PASS-THROUGH DUKE-UHL105462-05:THE ISCHEMIA TRIAL-SDCC	93.837	4 U01 HL105462-05	40,109	
PASS-THROUGH DUKE-UHL105462-06:ISCHEMIA- SDCC PY 6	93.837	5 U01 HL105462-06	62,083	
PASS-THROUGH DUKE-UHL117904-04:ISCHEMIA- CKD SDCC	93.837	4 U01 HL117904-04	12,455	
PASS-THROUGH DUKE-UHL117904-05:ISCHEMIA-CKD SDCC PY 5	93.837	4 U01 HL117904-05	14,051	
PASS-THROUGH HARVARD-RHL132320-01:PROTEOMIC PATHWAY DISCOVERY IN CARD	93.837	1 R01 HL132320-01	(1,374)	
PASS-THROUGH HARVARD-RHL132320-02:PROTEOMIC PATHWAY DISCOVERY IN CARD	93.837	1 R01 HL132320-02	33,390	
PASS-THROUGH HARVARD-RHL132320-03:PROTEOMIC PATHWAY DISCOVERY IN CARDIOVASULAR DI	93.837	1 R01 HL132320-03	7,280	
PASS-THROUGH INDIANA-RHL123767-05:PULMONARY HYPERTENSION BREAKTHROUGH	93.837	5 R24 HL123767-05	52,640	
PASS-THROUGH INDIANA-RHL123767-05:PULMONARY HYPERTENSION INITIATIVE.	93.837	1 R24 HL123767-02	68	
PASS-THROUGH INDIANA-RHL136896-02:B-LINES ULTRASOUND GUIDED ED MANAGEMENT OF	93.837	5 R34 HL136986-02	13,671	
PASS-THROUGH INDIANA-RHL136986-01:B-LINES LUNG ULTRASOUND GUIDED ED M	93.837	1 R34 HL136986-01	56,420	
PASS-THROUGH IUPUI-RHL126557-02:HIV DEPRESSION AND CARDIOVASCULAR R	93.837	5 R01 HL126557-02	157,601	
PASS-THROUGH JOHNS HOPKINS-RHL132153-01A1:FUNCTIONAL IMPACT OF COL18A1/ END	93.837	1 R01 HL132153-01A1	7,649	
PASS-THROUGH JOHNS HOPKINS-RHL135114-01:HEPATOMA DERIVED GROWTH FACTOR IN P	93.837	1 R01 HL135114-01	20,294	
PASS-THROUGH JOHNS HOPKINS-RHL135114-02:HEPATOMA DERIVED GROWTH FACTOR IN P	93.837	1 R01 HL135114-02	7,729	
PASS-THROUGH KENTUCKY-RHL134731-01:SERUM AMYLOID A, INFLAMMASOME ACTIV	93.837	1 R01 HL134731-01	47,864	
PASS-THROUGH KENTUCKY-RHL134731-02:SERUM AMYLOID A, INFLAMMASOME ACTIV	93.837	1 R01 HL134731-02	9,251	
PASS-THROUGH MARYLAND-UHL099997-07:FUNCTIONAL HETEROGENEITY IN CARDIAC	93.837	5 U01 HL099997-08	868	
PASS-THROUGH MASSACHUSETTS-PHL018646-38:MASS GEN - NEW APPROACHES TO CARDIO	93.837	5 P01 HL18646-38	1,207	(50)
PASS-THROUGH MASSACHUSETTS-RHL018646-39:NEW APPROACHES TO CARDIOTHORACIC TO	93.837	5 R01 HL018646-39	20,829	
PASS-THROUGH MASSACHUSETTS-RHL111821-05:COMPARATIVE EFFECTIVENESS OF POST-D	93.837	4 R01 HL111821-05	72,749	
PASS-THROUGH MASSACHUSETTS-RHL111821-05:COMPARATIVE EFFECTIVENESS OF POST-DISCHARGE STR	93.837	4 R01 HL111821-05	10,437	
PASS-THROUGH MCW-RHL119747-05:TARGETED, HIGHLY SENSITIVE, NON-INV	93.837	5 R01 HL119747-05	27,213	
PASS-THROUGH MICHIGAN-UHL069330-15:VICC BMT 1662 SIROLIMUIS AND PREDNI	93.837	5 U10 HL069330-15	20,663	
PASS-THROUGH MINNESOTA-RHL135300-01:CALORIC AND NON-CALORIC SWEETENERS	93.837	1 R21 HL135300-01	40,824	
PASS-THROUGH MINNESOTA-RHL136679-01:BLOOD PRESSURE AND KIDNEY FUNCTION - SPRINT VS	93.837	1 R01 HL136679-01	8,852	
PASS-THROUGH MINNESOTA-UHL123227-02:PERFUSION INJURY PROTECTION STRATEG	93.837	5 R01 HL123227-02	268,725	
PASS-THROUGH NEW ENGLAND RESEARCH-UHL068270-15:FUEL FONTAN UDENAFIL EXERCISE LONGI	93.837	4 U10 HL068270-15	179,700	
PASS-THROUGH NEW ENGLAND RESEARCH-UHL068270-15:FUEL OLE A PHASE III SAFETY EXTENSI	93.837	4 U10 HL068270-15	5,561	
PASS-THROUGH NEW YORK-UHL105907-01: ISCHEMIA- INTERNATIONAL STUDY OF C	93.837	1 U01 HL105907-01	9,689	
PASS-THROUGH NMDP-UHL069294-01:BMT 0989 NON-MYELOBLATIVE ALLOGENEI	93.837	1 U01 HL069294-01	117	

Accompanying notes follow this Schedule

Vanderbilt University Medical Center
Schedule of Expenditures of Federal Awards and State Financial Assistance
For the Year Ended June 30, 2018

Federal Grant/Pass-through Grantor/Project Name/Program or Cluster Title	CFDA Number	Federal/Pass-Through Award Number	Federal Expenditures	Passed to Sub-Recipients
Research and Development Cluster				
Department Of Health And Human Services				
PASS-THROUGH NORTH CAROLINA-RHL142302-01:HISPANIC LATINO LIPID CONSORTIUM - UNIV NC	93.837	1 R01 HL142302-01	10,182	
PASS-THROUGH NORTHWESTERN-RHL130502-02:MECHANICAL CIRCULATORY SUPPORT:MEAS	93.837	5 R01 HL130502-02	24,872	1,750
PASS-THROUGH NORTHWESTERN-RHL130502-03:MECHANICAL CIRCULATORY SUPPORT: MEASURES OF ADJ	93.837	5 R01 HL130502-03	21,513	
PASS-THROUGH OHIO STATE-RHL116533-03:THERAPEUTIC POTENTIAL FOR ALDOSTERO	93.837	5 R01 HL116533-03	36,879	
PASS-THROUGH OHSU-RHL111033-04:IMPROVING SYNCOPE RISK STRATIFICATI	93.837	4 R01 HL111033-04	3,080	
PASS-THROUGH PENNSYLVANIA-RHL118018-04:MULTIMARKER RISK PREDICTION IN CANC	93.837	5 R01 HL118018-04	2,276	
PASS-THROUGH PENNSYLVANIA-RHL134905-01:ANASTROZOLE IN PULMONARY ARTERIAL H	93.837	1 R01 HL134905-01	33,302	
PASS-THROUGH PENNSYLVANIA-RHL134905-01:ANASTROZOLE IN PULMONARY ARTERIAL:A	93.837	1 R01 HL134905-01	45,621	
PASS-THROUGH PITTSBURGH-HL136517-01:PRECLINICAL ASSESSMENT OF A COMPLIANCE MATCHED	93.837	1 R56 HL136517-01	17,039	
PASS-THROUGH PITTSBURGH-RHL123500-01A1:MINDING GOALS: AN INTERNET-ASSIST	93.837	1 R43 HL123500-01A1	1	
PASS-THROUGH PITTSBURGH-RHL129066-02:OUTSIDE-IN REGENERATION OF ABDOMINA	93.837	1 R21 HL129066-02	31,281	
PASS-THROUGH ROCHESTER-UHL096607-05: RAID LATE SODIUM CURRENT BLOCKADE	93.837	1 U01 HL96607	(3)	
PASS-THROUGH STANFORD-RHL117913-02:THE NOTCH SIGNALING PATHWAY IN LARG	93.837	1 RO1 HL117913-02	17,455	
PASS-THROUGH TULANE-RHL133790-01A1: DISSEMINATION AND IMPLEMENTATION	93.837	1 R01 HL133790-01A1	2,263	
PASS-THROUGH TULANE-RHL133790-02:DISSEMINATION AND IMPLEMENTATION OF THE SPRINT	93.837	1 R01 HL133790-02	168	
PASS-THROUGH UIC-RHL092217-06:POSITIONAL CLONING AND CANDIDATE GE	93.837	5 R01 HL92217-06	3,472	
PASS-THROUGH UMC-RHL133870-01A1:APTAMER PROTEOMICS OF CARDIOMETAB	93.837	1 R01 HL133870-01A1	16,027	
PASS-THROUGH UMC-RHL133870-02:APTAMER PROTEOMICS OF CARDIOMETABOLIC	93.837	1 R01 HL133870-02	6,272	
PASS-THROUGH UNIV OF LOUISVILLE-UHL127518-01:COLO-MIR:A PLASMA MICRORNA ASSAY WI	93.837	1 U01 HL127518	3,785	
PASS-THROUGH UNIV OF LOUISVILLE-UHL127518-02:EXITE PROGRAM - COLO-MIR: A PLASMA	93.837	1 U01 HL127518	3,810	
PASS-THROUGH UNIVERSITY OF OKLAHOMA-RHL128393-01A1:AUTOIMMUNE BASIS FOR POSTURAL TAC	93.837	1 R01 HL128393-01A1	71,523	
PASS-THROUGH UNIVERSITY OF OKLAHOMA-RHL128393-02:AUTOIMMUNE BASIS FOR POSTURAL TACHYCARDIA	93.837	5 R01 HL128393-02	70,921	
PASS-THROUGH VANDERBILT UNIVERSITY-RHL122010-01A1:DECRYPTING VARIANTS OF UNCERTAIN	93.837	1 R01 HL122010-01A1	572	
PASS-THROUGH VANDERBILT UNIVERSITY-RHL122347-02:MK2 INHIBITORY NANOPLEXES TO ENHANCE LONG TERM	93.837	5 R01 HL122347-02	42,947	
PASS-THROUGH VANDERBILT UNIVERSITY-RHL123829-01 RSV IMMUNOPROPHYLAXIS IMPACT ON RSV MORBIDITY	93.837	1 R21 HL123829-01	3	
PASS-THROUGH VANDERBILT UNIVERSITY-THL007411-37:TRAINING IN CARDIOVASCULAR RESEARCH	93.837	2 T32 HL07411-37	15,881	
PASS-THROUGH VIRGINIA COMMONWEALTH-RHL090586-05:VCU: ALLOSTERIC INHIBITORS OF COAGU	93.837	2 R01 HL90586-05	29,559	
PASS-THROUGH WASHINGTON ST. LOUIS-RHL118305-04:A MULTI-ETHNIC STUDY OF GENE-LIFEST	93.837	5 R01 HL118305-04	4,990	
PASS-THROUGH WAYNE STATE-HL139968-01:PROGNOSTIC SIGNIFICANCE OF MICRORNA EXPRESSION	93.837	1 R01 HL139968-01	12,182	
PASS-THROUGH WAYNE STATE-RHL109090-03:CARDIAC BIOMARKER - PEDIATRIC CARDI	93.837	5 R01 HL109090-03	42,862	
PASS-THROUGH WAYNE STATE-RHL111459-04:GENOTYPE-PHENOTYPE ASSOCIATIONS IN	93.837	5 R01 HL111459-04	(3)	
PASS-THROUGH WAYNE STATE-RHL111459-05:GENOTYPE-PHENOTYPE ASSOCIATIONS IN	93.837	5 R01 HL111459-05	22,119	
Total Cardiovascular Diseases Research			**29,859,789**	**5,878,106**
KHL121174-03:05 METABOLIC REPROGRAMMING IN PULMONARY	93.838	5 K08 HL121174-05	166,075	
KHL127102-02:04 BETA 1 IN THE LUNG	93.838	5 K08 HL127102-04	127,265	
KHL127301-02:04 MENTORING IN TRANSLATIONAL	93.838	6 K24 HL127301-04	96,440	
KHL130595-02:04 DNA-DAMAGE REPAIR IN PULMONARY FIBRO	93.838	5 K08 HL130595-04	166,758	
KHL133484-01A1 REGULATION OF ELASTIN ASSEMBLY DURING SACCULA	93.838	1 K08 HL133484-01A1	133,303	

Accompanying notes follow this Schedule

Vanderbilt University Medical Center
Schedule of Expenditures of Federal Awards and State Financial Assistance
For the Year Ended June 30, 2018

Federal Grant/Pass-through Grantor/Project Name/Program or Cluster Title	CFDA Number	Federal/Pass-Through Award Number	Federal Expenditures	Passed to Sub-Recipients
Research and Development Cluster				
Department Of Health And Human Services				
KHL136888-01:02 MECHANISMS OF AIRSPACE INFLAMMATION CAUSED B	93.838	5 K08 HL136888-02	153,572	
PHL098270-08 MECHANISMS OF FAMILIAL PULMONARY FIB - PROJECT	93.838	5 P01 HL092870-08	175,179	5,487
PHL108800-06 PROJECT 1: HORMONAL, METABOLIC AND SIGNALING	93.838	5 P01 HL108800-06	(105,359)	
PHL108800-07 HORMONAL, METABOLIC AND SIGNALING INTERAC PROJ	93.838	2 P01 HL108800-07	1,004,073	33,551
PHL92870-07 MECHANISMS OF FAMILIAL PULMONARY FIBRO-PROJECT 1	93.838	5 P01 HL92870-07	2,025,485	842,122
RHL102020-06 ROLE OF BMPR2 EXPRESSION IN HPAH; IMP	93.838	6 R01 HL102020-06	(741)	
RHL105479-06 REGULATION OF FIBROTIC REMODELING	93.838	6 R01 HL105479-06	10,208	
RHL109977-06 PREGNANCY FOLATE STATUS & EARLY CHIL	93.838	6 R01 HL109977-06	(1,331)	
RHL111111-05 ALTERING SEDATION PARADIGMS TO IMPROVE BRAIN	93.838	6 R01 HL111111-05	60,475	23,906
RHL111111-06 ALTERING SEDATION PARADIGMS TO IMPROVE BRAIN	93.838	5 R01 HL111111-06	734,213	231,985
RHL111259-06 MINORITY SUPPLEMENT - CAVELOAR DEFE	93.838	6 R01 HL111259-06	171,471	210,767
RHL112286-05 NRF2 AND RADIATION-INDUCED PULMONARY	93.838	6 R01 HL112286-05	98,076	
RHL116597-04 ROLE OF LUNG MSC IN EMPHYSEMA	93.838	6 R01 HL116597-04	11,625	
RHL116597-05A1 ROLE OF LUNG MSC IN EMPHYSEMA	93.838	2 R01 HL116597-05A1	8,381	
RHL117074-05 MICROBIAL INDUCTION OF SARCOIDOSIS CD4+ T CELL	93.838	5 R01 HL117074-05	(873)	(40)
RHL117074-06 MICROBIAL INDUCTION OF SARCOIDOSIS CD4+ T CELL	93.838	5 R01 HL117074-06	779,540	146,521
RHL119503-05 MECHANISMS OF PULMONARY FIBROSIS IN HERMANSKY	93.838	5 R01 HL119503-05	584,042	
RHL119503-06 MECHANISMS OF PULMONARY FIBROSIS IN HERMANSKY	93.838	2 R01 HL119503-06	18,889	
RHL122417-03:05 LIPID DEPOSITION IN THE RIGHT VEN	93.838	5 R01 HL122417-05	852,214	8,806
RHL122554-03:05 ROLE OF GENDER IN TH17-MEDIATED INFLA	93.838	5 R01 HL122554-05	669,213	800
RHL126176-04 THE GOLD STUDY: GOAL OF OPEN LUNG VE	93.838	6 R01 HL126176-03	199,094	13,263
RHL126492-03:04 USING REAL WORLD DECISIONS TO DEV	93.838	5 R01 HL126492-04	210,122	15,556
RHL126671-03:05 HEMOGLOBIN IN ARDS: A NOVEL MEDIATOR OF AVEO	93.838	5 R01 HL126671-05	318,335	
RHL129020-03 STATISTICAL METHODS FOR RECURRENT EV	93.838	5 R21 HL129020-03	26,072	
RHL131906-02:04 IMAGING ACTIVATED MACROPHAGES IN THE LUNGS	93.838	5 R01 HL131906-04	805,711	27,240
RHL133742-01:02 ANTIBIOTIC TIMING, SPECTRUM, AND CUMULATIVE	93.838	5 R21 HL133742-02	142,880	
RHL134802-01A1 ESTROGEN SIGNALING AND ENERGY METABOLISM IN	93.838	1 R01 HL134802-01A1	325,021	
RHL135849-01A1 TARGETING CELL-FREE HEMOGLOBIN IN SEPSIS TO	93.838	1 R01 HL135849-01A1	532,834	2,326
RHL135849-02S1 TARGETING CELL-FREE HEMOGLOBIN IN SEPSIS TO R	93.838	3 R01 HL135849-02S1	607	
RHL136449-01A1 LUNG MSC REGULATE ANGIOGENESIS AND REPAIR DUR	93.838	1 R01 HL136449-01A1	213,975	
RHL136664-01:02 TARGETING TH17 CELL METABOLISM IN STEROID RE	93.838	5 R01 HL136664-02	791,858	39,850
RHL136748-01 ROLE OF BONE MARROW CELLS IN PATHOGENESIS AND	93.838	1 R01 HL136748-01	629,714	
RHL136989-01:02 A MOBILE HEALTH INTERVENTION IN PULMONARY AR	93.838	1 R34 HL136989-02	157,417	
RHL95797-07:09 INTERVENTIONS AGAINST MOLECULAR ET	93.838	6 R01 HL95797-09	768,281	
THL87738-11 CLINICAL AND TRANSLATIONAL RESEARCH T	93.838	6 T32 HL87738-11	(45,827)	
THL87738-12 CLINICAL AND TRANSLATIONAL TRAINING PROGRAM IN P	93.838	2 T32 HL87738-12	408,136	
THL87738-13 CLINICAL AND TRANSLATIONAL RESEARCH TRAINING PRO	93.838	5 T32 HL87738-13	66,290	
THL94296-09 INTERDISCIPLINARY TRAINING PROGRAM IN LUNG RESEA	93.838	6 T32 HL94296-09	(4,547)	

Accompanying notes follow this Schedule

Vanderbilt University Medical Center
Schedule of Expenditures of Federal Awards and State Financial Assistance
For the Year Ended June 30, 2018

Federal Grant/Pass-through Grantor/Project Name/Program or Cluster Title	CFDA Number	Federal/Pass-Through Award Number	Federal Expenditures	Passed to Sub-Recipients
Research and Development Cluster				
Department Of Health And Human Services				
THL94296-10 INTERDISCIPLINARY TRAINING PROGRAM IN LUNG RESEA	93.838	5 T32 HL94296-10	281,705	
UHL123033-03 PREVENTION AND EARLY TREATMENT OF AC	93.838	6 U01 HL123033-03	(4,678)	
UHL123033-04 PREVENTION AND EARLY TREATMENT OF ACUTE LUNG IN	93.838	5 U01 HL123033-04	320,067	68,982
UHL123033-05 PREVENTION AND EARLY TREATMENT OF ACUTE LUNG	93.838	5 U01 HL123033-05	63,119	12,492
UHL125212-04 A MOLECULAR PHENOTYPE OF COMBINED PULMONARY HY	93.838	5 U01 HL125212-04	17,336	
UHL125212-05 A MOLECULAR PHENOTYPE OF COMBINED PULMONARY HYP	93.838	5 U01 HL125212-05	300,340	
UHL125212-06 A MOLECULAR PHENOTYPE OF COMBINED PULMONARY	93.838	5 U01 HL125212-06	148,434	
PASS-THROUGH CALIFORNIA UCSF-RHL109199-01:GENES CONTRIBUTING TO PATENT DUCTUS	93.838	1 R01 HL109199-01	2,536	
PASS-THROUGH CALIFORNIA UCSF-RHL140026-01:PRECISION MEDICINE IN ARDS	93.838	1 R35 HL140026-01	44,855	
PASS-THROUGH CLEVELAND CLINIC-UHL125177-03:PULMONARY VASCULAR DISEASE PHENOMIC	93.838	1 U01 HL125177-03	724	
PASS-THROUGH CLEVELAND CLINIC-UHL125177-04:PULMONARY VASCULAR DISEASE PHENOMIC	93.838	5 U01 HL125177-04	225,721	
PASS-THROUGH COLORADO-UHL121518-04:DATA FUSION: A SUSTAINABLE, SCALABL	93.838	5 U01 HL121518-04	37,013	
PASS-THROUGH MASSACHUSETTS-UHL123009-02:ROSE STUDY FOR PETAL NETWORK	93.838	5 U01 HL123009-02	201,873	116,420
PASS-THROUGH MASSACHUSETTS-UHL123009-03:LOW TIDAL VOLUME UNIVERSAL SUPPORT-	93.838	5 U01 HL123009-03	(3,994)	
PASS-THROUGH MASSACHUSETTS-UHL123009-03:THE VIOLET POC VITAMIN D TESTING ST	93.838	5 U01 HL123009-03	(1,395)	
PASS-THROUGH MASSACHUSETTS-UHL123009-04:CRYSTALLOID LIBERAL OR VASOPRESSORS	93.838	5 U01 HL123009-04	30,757	
PASS-THROUGH MASSACHUSETTS-UHL123009-04:PETAL-CCC PREVENTION & EARLY TREATM	93.838	5 U01 HL123009-04	125,685	
PASS-THROUGH MASSACHUSETTS-UHL123009-05:CCC FOR THE PREVENTION AND EARLY TREATMENT OF	93.838	5 U01 HL123009-05	16,227	
PASS-THROUGH MASSACHUSETTS-UHL123009-05:PETAL NETWORK CCC: VITAMIN D TO IMP	93.838	5 U01 HL123009-05	244,404	60,000
PASS-THROUGH NORTHWESTERN-RHL122477-03:LUNG FUNCTION DECLINE AND DISEASE R	93.838	5 RO1 HL122477-03	18,248	
PASS-THROUGH PENNSYLVANIA-RHL087115-06A1:CLINICAL RISK FACTORS FOR PRIMARY	93.838	2 R01 HL087115-06A1	59,473	
PASS-THROUGH PENNSYLVANIA-RHL134015-01:APPROACHES TO GENETIC HETEROGENEITY	93.838	1 R01 HL134015-01	29,197	
PASS-THROUGH PITTSBURGH-RHL135144-02:MITOCHONDRIAL DETERMINANTS OF COGNI	93.838	1 R01 HL135144-02	48,707	
PASS-THROUGH SEATTLE CHILDREN'S HOSP-RHL121067-01:PEDIATRIC RESPIRATORY ILLNESS INPAT	93.838	1 R01 HL121067-04	42,923	
PASS-THROUGH TEXAS HEALTH SCIENCE HOUSTON-RHL013851-013:UTR SHORTENING IN PULMONARY VASCUL	93.838	1 R01 HL13851-01	14,252	
PASS-THROUGH VA-15FED1511233-0003:TB TRIALS CONSORTIUM - ON CAMPUS	93.838	15FED1511233-0003	257,997	215,338
PASS-THROUGH VA-15FED1511233-0004:TB TRIALS CONSORTIUM-ON CAMPUS	93.838	15FED1511233-0004	182,988	
Total Lung Diseases Research			**16,188,682**	**2,075,373**
KHL122143-03 METABOLIC AND CD4+ T CELL DYSREGUL	93.839	6 K23 HL122143-03	26,403	
KHL138291-01 INVESTIGATING THE ROLE OF THE JAK/STAT3 PATHWAY	93.839	1 K23 HL138291-01	143,216	
KHL141447-01 USING PATIENT-CENTERED GUIDELINES IN A TECHNOLO	93.839	1 K23 HL141447-01	10,979	
RHL106812-07:09 DISTRICT CONTRIBUTIONS OF MTOR COMPLEXES 1	93.839	5 R01 HL106812-09	430,215	
RHL114518-04 PREVENTING GASTRODUODENAL BLEEDING I	93.839	6 R01 HL114518-04	364,137	1,911
RHL124159-03:04 PHOSPHATASE AND TENSIN HOMOLOG PTEN ACTIONS	93.839	5 R01 HL124159-04	545,388	34,659
RHL1300180-02 NIH: MECHANISMS OF GLYCOSAMINOGLYCAN-CATALYZE	93.839	5 R01 HL130018-02	256,438	59,033
RHL133559-01A1 MECHANISMS OF NECROSIS REGULATION OF	93.839	1 R01 HL133559-01A1	36,428	
RHL140025-01 BIOCHEMISTRY AND PATHOPHYSIOLOGY FACTOR XI	93.839	1 R35 HL140025-01	363,166	
RHL141943-01 ISLET CELL AND ST2 AXIS DYSREGULATION IN POST-T	93.839	1 R01 HL141943-01	36,602	

Accompanying notes follow this Schedule

Vanderbilt University Medical Center
Schedule of Expenditures of Federal Awards and State Financial Assistance
For the Year Ended June 30, 2018

Federal Grant/Pass-through Grantor/Project Name/Program or Cluster Title	CFDA Number	Federal/Pass-Through Award Number	Federal Expenditures	Passed to Sub-Recipients
Research and Development Cluster				
Department Of Health And Human Services				
RHL58837-20 PHYSIOLOGY & MOLECULAR BIOLOGY OF FACT	93.839	6 R01 HL58837-20	23,081	
RHL58837-21 PHYSIOLOGY AND MOLECULAR BIOLOGY FACTO	93.839	2 R01 HL58837-21	259,091	
RHL71544-14 MECHANISM OF STAPHYLOCAGULASE-ACTIVAT	93.839	6 R01 HL71544-14	135,811	6,717
PASS-THROUGH EMORY-UHL117721-05:CELLULAR AND MOLECULAR MECHANISMS O	93.839	5 U01 HL117721-05	22,786	
PASS-THROUGH ILLINOIS-RHL111656-05:VASCULAR TARTGETING GENOMIC GENETIC	93.839	1 R01 HL11156	15,181	
PASS-THROUGH INDIANA-RHL111656-05:VASCULAR-TARGETED GENOMIC AND GENET	93.839	5 R01 HL111656	56,289	
PASS-THROUGH MINNESOTA-RHL118979-05:MINNESOTA ENHANCING TREG THERAPEUTIC EFFICACY	93.839	2 R01 HL118979-05	11,613	200
PASS-THROUGH MSSM-UHL138645-01:MT SINAI CORE CLINICAL CONSORTIUM F	93.839	1 UG1 HL138645-01	18,232	
PASS-THROUGH MUSC-RHL133896-01A1:DISPLACE:DISSEMINATION AND IMPLEM	93.839	1 R01 HL133896-01A1	17,294	
PASS-THROUGH NMDP-U24HL138660-01:BMT1759:1507:HAPLOIDENTICAL BONE MARROW	93.839	1 U24 HL138660-01	2,844	
PASS-THROUGH NMDP-UHL069294-01:BMT 1049 SINGLE AUTOLOGOUS TRANSPLA	93.839	1 U01 HL069294-01	1,129	
PASS-THROUGH UMC-HHSN268201300046C:JACKSON HEART STUDY YR5	93.839	HHSN268201300046C	26,748	
PASS-THROUGH VANDERBILT UNIVERSITY-HHSN268201400010C:DEVELOPMENT OF GAMMA-KETOALDEHYDE SCAVENG	93.839	HHSN268201400010C	(12,266)	
PASS-THROUGH VIRGINIA COMMONWEALTH-PHL107152-06:CHEMISTRY AND BIOLOGY OF HEPARAN SU	93.839	4 P01 HL107152-06	2,182	
Total Blood Diseases and Resources Research			**2,792,987**	**102,520**
KHL137943-01 V-STTAR VANDERBILT SCHOLARS IN T4TRANSLATIONALR	93.840	1 K12 HL137943-01	65,233	
Total Translation and Implementation Science Research for Heart, Lung, Blood Diseases, and Sleep Disorders			**65,233**	
KAR072757-01 USING THE ELECTRONIC HEALTH RECORD TO RISK	93.846	1 K08 AR072757-01	10,393	
KAR64768-04:05 DRUG-DRUG INTERACTIONS & PREVENTAB	93.846	5 K23 AR64768-05	94,009	
KAR68443-02:03 FUNCTIONAL IMPACT OF HDLANSPORT OF MI	93.846	5 K23 AR68443-03	(1,200)	
RAR63157-05 THE ROLES OF COLLAGEN AND WATER IN TH	93.846	6 R01 AR63157-05	253,949	42,272
RAR66875-03:04 THE MECHANICAL PHENOTYPE OF FETA	93.846	5 R03 AR66875-04	50,757	
RAR67871-01A1:02 THE ROLE OF TISSUE MATRIX IN THE FRACTURE R	93.846	5 R21 AR67871-02	188,275	140
RAR67901-03 IMMUNE CELLS & CYTOKINES MEDIATING FIBRODYSPLASI	93.846	6 R21 AR67901-03	504	
RAR67938-01A1:02 EVALUATING GENETIC RISK FOR KELOIDS IN AFRI	93.846	5 R21 AR67938-02	214,728	
RAR71267-01 STEVENS-JOHNSON SYNDROME/TOXIC EPIDURAL NECROLY	93.846	1 R13 AR71267-01	5,812	
RAR72483-01A1 MATRIX-SENSITIVE TOOLS FOR DETECTING NF1-RELA	93.846	1R21AR072483-01A1	10,570	
RAR72495-01 ASMB/VANDERBILT WORKSHOP ON BASEMENT MEMBRANES	93.846	1 R13 AR72495-01	14,375	
UAR69201-01A1:02 OPERATIVE VERSUS NON-OPERATIVE TREATMENTS F	93.846	5 U34 AR69201-02	163,096	
PASS-THROUGH CLEVELAND CLINIC-RAR053684-10:PROGNOSIS AND PREDICTORS OF ACL REC	93.846	2 R01 AR53684-10	477,129	
PASS-THROUGH IOWA-UAR063381-04:FIBROMYALGIA ACTIVITY WITH TENS(FAS	93.846	5 UM1 AR63381-004	(1,711)	
PASS-THROUGH IOWA-UAR063381-05:FIBROMYALGIA ACTIVITY WITH TENS(FAS	93.846	5 UM1 AR63381-05	164,389	
PASS-THROUGH KENTUCKY-RAR070620-02:EFFECTS OF SODIUM-DEPENDENT GLUCOSE	93.846	1 R21 AR70620-01	52,384	
PASS-THROUGH PENNSYLVANIA-ARR068247-02:TARGETING RAS GENE PATHWAYS IN PSOR	93.846	5 R21 AR68247-02	12,679	200
PASS-THROUGH VANDERBILT UNIVERSITY-AR59039-06A1:INTERDISCIPLINARY TRAINING IN RHEUMATIC DISEASE	93.846	2 T32 AR59039-06A1	(941)	
PASS-THROUGH VANDERBILT UNIVERSITY-RAR064772-01A1:BIOFILM DISPERSIVE GRAFTS TO IMPR	93.846	1 R01 AR64772-01A1	20,766	
PASS-THROUGH VANDERBILT UNIVERSITY-TAR059039-07:INTERDISCIPLINARY TRAINING IN RHEUM	93.846	5 T32 AR59039-07	13,247	
PASS-THROUGH WAKE FOREST-RAR59105-04:THE STRENGTH TRAINING FOR ARTHRITIS	93.846	1 R01 AR59105	4,669	

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Vanderbilt University Medical Center
Schedule of Expenditures of Federal Awards and State Financial Assistance
For the Year Ended June 30, 2018

Federal Grant/Pass-through Grantor/Project Name/Program or Cluster Title	CFDA Number	Federal/Pass-Through Award Number	Federal Expenditures	Passed to Sub-Recipients
Research and Development Cluster				
Department Of Health And Human Services				
PASS-THROUGH WASHINGTON ST. LOUIS-RAR060846-05:REVISION ACL RECONSTRUCTION: A COMP	93.846	2 R01 AR60846-05	103,014	
Total Arthritis, Musculoskeletal and Skin Diseases Research			**1,850,893**	**42,612**
DK101332-03:04 INDUCTION & EVOLUTION OF METAPLASIA IN THE ST	93.847	5 R01 DK101332-04	297,395	
FDK103474-04 MECHANISMS OF BILE ACID SIGNALING AND METABOLIS	93.847	5 F32 DK103474-04	2	
FDK108448-01A1 PRESERVATION OF DIALYSIS ACCESS PATENCY	93.847	1 F32 DK108448-01A1	(261)	
FDK108492-02 TISSUE-SPECIFIC CONTRIBUTION OF SELE	93.847	6 F32 DK108492-02	2,513	
FDK108492-03 TISSUE-SPECIFIC CONTRIBUTION OF SELENOPROTEIN P	93.847	5 F32 DK108492-03	50,456	
FDK108492-04 TISSUE-SPECIFIC CONTRIBUTION OF SELENOPROTEIN	93.847	5 F32 DK108492-04	4,691	
FDK111101-01A1 DEFICITS IN ENTEROCYTE APICAL TRANSPORTERS	93.847	1 F32 DK111101-01A1	26,112	
FDK111101-02 DEFICITS IN ENTEROCYTE APICAL TRANSPORTERS ASS	93.847	5 F32 DK111101-02	28,480	
FDK113710-01 LYMPHOCYTE METABOLISM IN AUTOIMMUNE INSULITIS	93.847	1 F32 DK113710-01	53,680	
FDK113712-01A1 INVESTIGATION OF THE ROLE OF FARNESOID X RECE	93.847	1 F32 DK113712-01A1	55,490	
FDK116520-02 THE ROLE OF PHOSPHODIESTERASE 9 IN THE REGULATI	93.847	F 32 DK116520-02	10,985	
KDK100533-04:06 MITOCHONDRIAL DYSFUNCTION IN CHRONI	93.847	5 K23 DK100533-06	197,209	
KDK101689-04 EARLY ONSET OBESITY AND COGNITIVE	93.847	5 K23 DK101689-04	147,640	
KDK103910-02 AFFERENT HYPERACTIVITY MECH IN OVERAC	93.847	6 K23 DK103910-02	135,205	
KDK106306-02:04 TARGETING FAMILY BEHAVIORS TO IMPROV	93.847	5 K01 DK106306-04	157,883	
KDK106311-03 INVESTIGATING CROSS-REGULATION OF THE MICROBI	93.847	7 K01 DK106311-03	131,462	
KDK106472-02:04 MECHANISMS OF CELLULAR ADAPTATION IN CYSTITI	93.847	5 K08 DK106472-04	145,948	
KDK106511-02:03 ENHANCING PATIENT ACTIVIATION IN DIABETES CA	93.847	5 K23 DK106511-03	162,448	
KDK109019-02 PARATHYROID HORMONE: GENETIC ARCHITECTURE AND C	93.847	7 K01 DK109019-02	126,662	
KDK92357-06 PROTEIN HANDLING BY RENAL TUBULE EPITHEL	93.847	6 K01 DK92357-06	29,043	
KDK99473-04:05 PROXIMAL TUBULE KIM-1 EXPRESSION MODULATES	93.847	5 K01 DK99473-05	174,608	
PDK020593-41 DRTC ADMIN CORE	93.847	5 P30 DK020593-41	429,594	
PDK058404-16 MOLECULAR AND CELLULAR BASIS FOR DIGESTIVE -ADM	93.847	2 P30 DK58404-16	1,230,838	120,328
PDK058404-17 MOLECULAR AND CELLULAR BASIS FOR DIGESTIVE	93.847	5 P30 DK058404-17	64,322	
PDK112080-01 VANDERBILT DEVELOPMENTAL CENTER FOR TRANSLATION	93.847	1 P20 DK112080-01	21,311	17,066
PDK114809-01 VANDERBILT O'BRIEN KIDNEY CENTER-ADMIN	93.847	1 P30 DK114809-01	933,749	
PDK20593-39 DRTC ADMINISTRATIVE COMPON	93.847	6 P30 DK20593-39	(143)	(846)
PDK20593-40 DRTC ADMIN	93.847	2 P30 DK20593-40	2,233,386	409,041
PDK58404-15 MOLECULAR AND CELLULAR BASIS FOR DIGESTIVE DISEA	93.847	6 P30 DK58404-15	(52,376)	18,209
PDK92986-06 CDTR ADMINISTRATIVE CORE	93.847	6 P30 DK92986-06	16	
PDK92986-07 CDTR ADMIN	93.847	2 P30 DK92986-07	203,465	162,071
PDK92986-08 CDTR ADMIN CORE	93.847	5 P30 DK92986-08	528,640	99,776
RDK100431-03:04 ROLE OF FOREGUT IN NUTRIENT METABOLI	93.847	5 R01 DK100431-04	257,630	
RDK100694-04:06 IMPROVING MEDICATION ADHERENCE AMONG UNDERSE	93.847	6 R01 DK100694-05	823,536	21,825
RDK101342-03 MITOCHONDRIAL DNA HAPLOGROUPS AND	93.847	6 R21 DK101342-03	59,634	44,631
RDK101791-03:05 METABOLIC REPROGRAMMING IN ACUTE K	93.847	5 R01 DK101791-05	302,183	

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Vanderbilt University Medical Center
Schedule of Expenditures of Federal Awards and State Financial Assistance
For the Year Ended June 30, 2018

Federal Grant/Pass-through Grantor/Project Name/Program or Cluster Title	CFDA Number	Federal/Pass-Through Award Number	Federal Expenditures	Passed to Sub-Recipients
Research and Development Cluster				
Department Of Health And Human Services				
RDK103067-03:05 HARRIS-NOVEL INTEGRATED ANALYSES OF	93.847	5 R24 DK103067-05	1,299,533	124,374
RDK103935-03:05 DETERMINING KEY ORGANIZATIONAL HEALTH	93.847	5 R01 DK103935-05	270,847	109,083
RDK104817-03:05 ICD8ALPHA CELLS AS NOVEL INNATE-TYPE LYM	93.847	5 R01 DK104817-05	147,126	
RDK105371-02:05 NON-INVASIVE ASSESSMENT OF HUMAN BROWN ADIPO	93.847	5 R01 DK105371-05	386,039	
RDK105550-05:06 EXPLOITING METABOLIC VULNERABILITIES	93.847	5 R01 DK105550-06	450,955	92,938
RDK105847-03:05 BILE DIVERSION SIMPLE AND EFFECTIVE	93.847	5 R01 DK105847-05	297,047	
RDK106755-02:05 PANCREATIC SIGNATURES IN T2D MELLITU	93.847	5 R24 DK106755-04	1,584,724	928,581
RDK108159-02:03 METABOLITE PROFILES AND THE RISK	93.847	5 R01 DK108159-03	837,533	673,913
RDK108352-02 INNATE AND ADAPTIVE IMMUNITY IN HIV-ASS	93.847	6 R56 DK108352-02	373,906	140,022
RDK108968-02:04 TGF-BETA PATHWAYS THAT PROTECT EPITHELIA IN	93.847	5 R01 DK108968-05	369,992	17,287
RDK109102-02:04 ESTROGEN AND COORDINATED CARBOHYDRAT	93.847	5 R01 DK109102-04	375,221	22,470
RDK110166-01:02 CALCIUM: MAGNESIUM BALANCE, MICROBIOTA	93.847	5 R01 DK110166-02	637,351	375,860
RDK110399-02:03 GLUCOSE-INDUCED STIFFENING OF EXTRACELLULAR	93.847	5 R03 DK110399-03	53,386	
RDK110657-02 SLEEP PROMOTION TO IMPROVE DIABETES MANAGEMENT	93.847	5 R21 DK110657-02	315,892	
RDK111554-01:02 THE NF-KAPPAB-ANDROGEN RECEPTOR AXIS DRIVES	93.847	5 R01 DK111554-02	404,705	48,961
RDK111671-01A1 CONTROL OF LYMPHOCYTE HOMEOSTASIS BY ICD8A CE	93.847	1 R01 DK111671-01A1	354,917	
RDK112262-02 THE ROLE OF ADIPOSE-RESIDENT T CELLS IN HIV	93.847	6 R01 DK112262-02	880,008	9,781
RDK112688-01A1:02 MECHANISMS AND THERAPEUTIC MANIPULATION OF	93.847	5 R01 DK112688-02	491,550	
RDK113329-01 DIABETES-SPECIFIC FAMILY FUNCTIONING AMONG ADUL	93.847	1 R03 DK113329-01	60,768	
RDK113423-01A1 ESTROGEN RECEPTOR HOMEOSTASIS	93.847	1 R01 DK113423-01A1	6,076	
RDK116964-01 THE ROLE OF HYPOBROMOUS ACID IN RENAL	93.847	1 R01 DK116964-01	56,606	
RDK116964-01S1 THE ROLE OF HYPOBROMOUS ACID IN RENAL DISEASE	93.847	3 R01 DK116964-01S1	6,568	
RDK18381-45 STUDIES ON THE STRUCTURE OF BASEMENT	93.847	5 R01 DK18381-45	598,724	
RDK18381-46S1 STUDIES ON THE STRUCTURE OF BASEMENT MEMBRANE	93.847	3 R01 DK18381-46S1	101,757	
RDK48370-22 SMALL GTP BINDING PROTEINS IN GASTROINTE	93.847	6 R01 DK48370-22	160,539	
RDK51265-21:23 MECHANISMS OF EGFR ACTIVATION AND SIG	93.847	5 R01 DK51265-23	379,636	
RDK53620-15 H PYLORI INDUCED DNA DAMAGE AND IMMUN	93.847	6 R01 DK53620-15	2,108	
RDK56942-14 RESOLUTION OF GLOMERULOSCLEROS	93.847	6 R01 DK56942-14	57,444	
RDK58587-16:18 HELICOBACTER PYLORI AND GASTROINTESTINAL BIO	93.847	5 R01 DK58587-18	316,150	
RDK61470-14:15 SURGICAL STUDIES ON THE ROLE ON GASTRIN	93.847	5 R01 DK61470-15	358,180	
RDK62794-14:15 ROLE OF CYCLOOXYGENASE2 SALETSENSI	93.847	5 R01 DK62794-15	206,334	
RDK64775-11 REALISTIC MODELS OF GASTROINTESTINAL	93.847	6 R01 DK64775-11	47,205	38,816
RDK65138-15A1:16 GLUCOSE MODIFICATIONS OF PROTEINS IN DI	93.847	2 R01 DK65138-15A1	358,739	
RDK69921-13:14 THE LAMININ RECEPTORS IN KIDNEY DEVEL	93.847	5 R01 DK69921-14	427,654	
RDK78158-07:08 NEURAL CREST CONTRIBS TO LOWER URINARY	93.847	5 R01 DK78158-08	196,019	
RDK81134-08:09 REGULATION OF INTESTINAL DEVELOPMENT B	93.847	5 R01 DK81134-09	272,708	
RDK81646-09 MOLECULAR MECHANISMS OF RENAL INJURY	93.847	6 R01 DK81646-09	(30)	
RDK81646-10A1 MOLECULAR MECHANISMS OF RENAL INJURY	93.847	2 R01 DK081646-10A1	140,550	

Accompanying notes follow this Schedule

Vanderbilt University Medical Center
Schedule of Expenditures of Federal Awards and State Financial Assistance
For the Year Ended June 30, 2018

Federal Grant/Pass-through Grantor/Project Name/Program or Cluster Title	CFDA Number	Federal/Pass-Through Award Number	Federal Expenditures	Passed to Sub-Recipients
Research and Development Cluster				
Department Of Health And Human Services				
RDK84246-07:09 BRUTON'S TYROSINE KINASE & IMM	93.847	5 R01 DK84246-09	392,296	19,423
RDK91748-06 RYGB IMPROVES METABOLISM BY INTERUPTIN	93.847	6 R01 DK91748-06	(4,136)	
RDK93501-06:08 WNK-SPAK SIGNALING IN THE DISTAL NEPHRON	93.847	5 R01 DK93501-08	595,650	270,224
RDK93660-07 NOVEL CELL THERAPY FOR ANEMIA OF CKD	93.847	5 R01 DK93660-07	108,377	
RDK94199-05 ISLET IMAGING WITH MONOCLONAL ANTIBOD	93.847	6 R01 DK94199-05	5,809	(123)
RDK95761-05 INTEGRIN/TGF-BETA AXIS IN TUBULOINTER	93.847	6 R01 DK95761-05	29,712	
RDK95785-05:06 ROLE OF RENAL MACROPHAGES IN RECOVERY	93.847	5 R01 DK95785-06	377,075	
RDK96994-04:06 ENDOGENOUS ALDOSTERONE AND GLUCOSE	93.847	5 R01 DK96994-06	486,869	167,613
RDK96999-06 UNDERGRADUATE RESEARCH INTERNSHIPS IN	93.847	5 R25 DK96999-06	67,713	
RDK96999-07 ASPIRNAUT UNDERGRADUATE DISCOVERY SCIENCE EXPER	93.847	2 R25 DK96999-07	30,499	
RDK97306-04:05 ROLE OF PEROXIDASIN IN GLOMERULAR MATRIX HOME	93.847	6 K08 DK97306-04	153,208	
RDK97332-06 ROLE OF CD148 TYROSINE PHOSPHASE I	93.847	5 R01 DK97332-06	133,553	1,408
RDK99204-06 SELENIUM IN GASTROINTESTINAL INFLAMMA	93.847	5 R01 DK99204-06	367,753	4,149
RDK99467-04:06 COLLAGEN IV NETOWRKS OF BASEMENT MEMB	93.847	5 R01 DK99467-06	312,928	
TDK07061-43 RESEARCH TRAINING IN DIABETES AND ENDOCRINOLO-	93.847	2 T32 DK07061-43	8,978	9,184
TDK07061-44 STIPENDS, TUITION & TRAVEL	93.847	5 T32 DK07061-44	256,049	30,495
TDK07383-37 SHORT TERM RESEARCH TRAINING	93.847	6 T35 DK07383-37	1,256	
TDK07383-38 SHORT TERM RESEARCH TRAINING - STIPENDS	93.847	5 T35 DK07383-38	98,763	
TDK07383-39 SRTP - STIPENDS	93.847	2 T35 DK07383-39	76,821	
TDK07569-28 RENAL BIOLOGY AND DISEASE TRAINING PROGRAM	93.847	5 T32 DK07569-28	(7,056)	
TDK07569-29 RENAL BIOLOGY AND DISEASE TRAINING PROGRAM ADMIN	93.847	5 T32 DK07569-29	265,258	36,265
TDK07673-24 TRAINING IN GASTROENTEROLOGY - MINORITY SUPPLEME	93.847	5 T32 DK07673-24	40,677	31,512
TDK07673-25 TRAINING IN GASTROENTEROLOGY	93.847	5 T32 DK07673-25	341,629	3,939
UDK085465-10 VANDERBILT UNIVERSITY: CLINICAL CENTER APPLICAT	93.847	5 U01 DK085465-10	57,265	
UDK104211-02 MOLECULAR MECHANISMS OF PHYSIOLOGIC PAN	93.847	6 UC4 DK104211-02	700,339	426,630
UDK110804-02 ATLAS OF AUTONOMIC AND NEUROMODULATORY LINEAGES	93.847	6 U01 DK110804-02	8,558	11,300
UDK110804-03 ATLAS OF AUTONOMIC AND NEUROMODULATORY LINEAGES	93.847	5 U01 DK110804-03	338,482	52,251
UDK110804-04 ATLAS OF AUTONOMIC AND NEUROMODULATORY LINEAGES	93.847	5 U01 DK110804-04	21,783	
UDK112232-01 HPPAP POWERS PARENT CENTER	93.847	1 UC4 DK112232-01	1,504,560	1,098,541
UDK112271-01 OPTIMAL MANAGEMENT OF HIV INFECTED ADULTS AT	93.847	1 U01 DK112271-01	180,005	
UDK116093-01 APOL1 AND KIDNEY TRANSPLANTATION OUTCOMES VANDE	93.847	1 U01 DK116093-01	48,650	
UDK116093-02 APOL1 AND KIDNEY TRANSPLANTATION OUTCOMES VANDE	93.847	5 U01 DK116093-02	7,214	
UDK82192-10 IMPACT OF ACUTE KIDNEY INJURY ON KIDNEY DISEASE	93.847	5 U01 DK82192-10	2,736	
UDK82192-11 IMPACT OF ACUTE KIDNEY INJURY ON KIDNEY DISEASE	93.847	5 U01 DK82192-11	316,765	
UDK85465-08 VANDERBILT UNIVERSITY: CLINICAL CENTER APPLICA	93.847	6 U01 DK85465-08	(157)	
UDK85465-09 VANDERBILT UNIVERSITY: CLINICAL CENTER APPLICAT	93.847	5 U01 DK85465-09	413,931	
UDK99923-05 ANTI-INFLAMMATORY INTERVENTIONS IN MAINTENANCE H	93.847	5 U01 DK99923-05	71,576	70,433
UDK99923-06 ANTI-INFLAMMATORY INTERVENTIONS IN MAINTENANCE	93.847	5 U01 DK99923-06	340,304	180,974

Accompanying notes follow this Schedule

Vanderbilt University Medical Center
Schedule of Expenditures of Federal Awards and State Financial Assistance
For the Year Ended June 30, 2018

Federal Grant/Pass-through Grantor/Project Name/Program or Cluster Title	CFDA Number	Federal/Pass-Through Award Number	Federal Expenditures	Passed to Sub-Recipients
Research and Development Cluster				
Department Of Health And Human Services				
PASS-THROUGH AUGUSTA-UDK076169-12:IN VIVO IMAGING OF RETINAL HYPOXIA	93.847	5 U24 DK076169-12	30,912	
PASS-THROUGH AUGUSTA-UDK076169-12:ROLE OF GUT MICROBIOTA IN METABOLIC	93.847	5 U24 K076169-12	45,119	
PASS-THROUGH BECKMAN RESEARCH-UDK098085-01:VANDERBILT HUMAN ISLET QUALITY CONT	93.847	1 UC4 DK098085-01	28,707	
PASS-THROUGH CASE WESTERN RESERVE-DDK101074-01:HEARING IMPAIRMENT IN LONG-TERM TYP	93.847	1 DP3 DK101074-01	83	
PASS-THROUGH CASE WESTERN RESERVE-DDK104438-01:CASE WEST RESIDUAL BETA CELL FUNCTI	93.847	1 DP3 DK104438-01	12,496	
PASS-THROUGH CASE WESTERN RESERVE-DK114812-01:EDIC ANCILLARY STUDY - NEUROCOGNITION STUDY	93.847	1 DP3 DK114812-01	6,403	
PASS-THROUGH CASE WESTERN RESERVE-UDK094157-04:CASE WESTERN EPIDEMIOLOGY OF DIABET	93.847	5 U01 DK94157-04	(6,541)	
PASS-THROUGH CASE WESTERN RESERVE-UDK094157-06:EPIDEMIOLOGY OF DIABETES INTERVENTI	93.847	4 U01 DK94157-06	227	
PASS-THROUGH CASE WESTERN RESERVE-UDK094157-07:EPIDEMIOLOGY OF DIABETES INTERVENTI	93.847	2 U01 DK94157-07	177,845	
PASS-THROUGH CASE WESTERN RESERVE-UDK094157-07:RES512558:EDIC HYPOGLYCEMIA-ARRYTHM	93.847	5 U01 DK94157-07	30,413	
PASS-THROUGH CASE WESTERN RESERVE-UDK094157-07:RES512875:EDIC SKELETAL HEALTH STUD	93.847	2 U01 DK094157-07	21,362	
PASS-THROUGH CCMC-UDK095745-01:PREDICTING RESPONSE TO STANDARDIZED	93.847	1 U01 DK95745-01	650	
PASS-THROUGH CHICAGO-RDK908435-02:VIRAL INFECTIONS & CELIAC DISEASE P	93.847	5 R01 DK98435-02	84	
PASS-THROUGH CITY OF HOPE-UDK098085-02:IIDP HUMAN ISLET PHENOTYPING PROGRA	93.847	2 UC4 DK098085-02	238,280	
PASS-THROUGH COLORADO-RDK090964-06:INTERRUPTING THE VICIOUS CYCLE OF O	93.847	2 R24 DK90964-06	267,922	1,000
PASS-THROUGH CUMBERLAND-RDK106779-01A1:A SIMPLE AND EFFECTIVE DIAGNOSTIC	93.847	1 R41 DK106779-01A1	42,694	
PASS-THROUGH GEORGE WASHINGTON DC-UDK098246-05:GLYCEMIA REDUCTION APPROACHES IN DI	93.847	4 U01 DK98246-05	55,717	
PASS-THROUGH GEORGE WASHINGTON DC-UDK098246-06:GLYCEMIA REDUCTION APPROACHES IN DI	93.847	2 U01 DK98246-06	418,711	
PASS-THROUGH GRU-UDK076169-11:AUGUSTA: DISSECTING BIOFILM FORMATI	93.847	2 U24 DK76169-11	49,684	
PASS-THROUGH GRU-UDK076169-11:DIACOMP PILOT AND FEASIBILITY STUDY	93.847	2 U24 DK76169-11	2,093	
PASS-THROUGH GRU-UDK076169-11:PILOT & FEASIBILITY OF LYMPHATIC CA	93.847	2 U24 DK76169-11	34,553	1,846
PASS-THROUGH GRU-UDK076169-11:TESTING LOXL2 INHIBITORS FOR AMELIO	93.847	2 U24 DK76169-11	45,714	
PASS-THROUGH HARVARD-RDK081572-08:METABOLOMIC PREDICTORS OF INSULIN R	93.847	2 R01 DK081572-08	7,271	
PASS-THROUGH HARVARD-RDK081572-09 METABOLOMIC PREDICTORS OF INSULIN R	93.847	2 R01 DK81572-09	80,650	
PASS-THROUGH KENTUCKY-RDK084045-04:INSULIN/IGF-I AXIS IN DIABETIC OSTE	93.847	7 R01 DK84045-04	9,395	
PASS-THROUGH KENTUCKY-RDK084045-05A1:THE INSULIN/IGF-I AXIS IN DIABETIC OSTEOPATHY	93.847	2 R56 DK084045-05A1	2,206	
PASS-THROUGH MARYLAND-RDK110375-01A1:OXGR1 IN RENAL INTERCALATED CELLS	93.847	1 R01 DK110375-01A1	203,808	
PASS-THROUGH MDIBL-RDK051610-22:MECHANISMS OF PHOSPHORYLATION MEDIA	93.847	5 R01 DK051610-22	4,486	
PASS-THROUGH NATIONWIDE-UDK100866-03:INTEGRATIVE PROTEOMICS & METABOLOMI	93.847	5 UM1 DK100866-03	6,119	
PASS-THROUGH NORTH CAROLINA-UDK100867-04:CLINICAL CENTER-ADVANCING CLINICAL	93.847	5 UM1 DK100867-04	(2,761)	
PASS-THROUGH NORTH CAROLINA-UDK100867-04:GDCN CLINICAL CENTER-ADVANCING CLIN	93.847	5 UM1 DK100867-04	(6,584)	
PASS-THROUGH NORTH CAROLINA-UDK100867-05:GDCN CLINICAL CENTER-ADVANCING CLIN	93.847	5 UM1 DK100867-05	7,222	
PASS-THROUGH NORTH CAROLINA-UDK100867-05:GDCN CLINICAL CENTER-ADVANCING PATI	93.847	5 UM1 DK100867-05	62,927	
PASS-THROUGH NORTHWESTERN-RDK092217-04A1:EFFECTIVENESS OF PHYSIOLOGIC TEST	93.847	2 R01 DK92217-04A1	16,350	
PASS-THROUGH NORTHWESTERN-RDK092217-05A1:EFFECTIVENESS OF PHYSIOLOGIC TESTING IN PPI	93.847	2 R01 DK92217-05A1	4,187	
PASS-THROUGH PENNSYLVANIA-RDK105689-02:FORMATION AND MATURATION OF ENDOCRI	93.847	1 R01 DK105689-02	5,894	400
PASS-THROUGH PENNSYLVANIA-RDK105689-03:FORMATION AND MATURATION OF ENDOCRI	93.847	1 R01 DK105689-03	115,972	200
PASS-THROUGH PHYSIOLOGIC-RDK113870-01:MICROPORT: A MINIMALLY INVASIVE INT	93.847	1 R43 DK113870-01	50,327	

Accompanying notes follow this Schedule

Vanderbilt University Medical Center
Schedule of Expenditures of Federal Awards and State Financial Assistance
For the Year Ended June 30, 2018

Federal Grant/Pass-through Grantor/Project Name/Program or Cluster Title	CFDA Number	Federal/Pass-Through Award Number	Federal Expenditures	Passed to Sub-Recipients
Research and Development Cluster				
Department Of Health And Human Services				
PASS-THROUGH PITTSBURGH-RDK097084-01:ECTOPIC ADIPOSITY IN BLACK MEN WITH	93.847	1 R01 DK97084-01	5,640	
PASS-THROUGH PNDRI-RDK097829-01:ISLET BIOLOGY IN CYSTIC FIBROSIS RE	93.847	1 R01 DK97829-01	128,200	48,688
PASS-THROUGH POTENTIA PHARMACEUTICALS-RDK109870-01:REDUCING TIME, SAMPLE HANDLING, AND	93.847	1 R43 DK109870-01	11	
PASS-THROUGH RECOMBINETICS-RDK109820-01:GENERATING A PORCINE MODEL FOR HUMA	93.847	1 R43 DK109820-01	19,609	
PASS-THROUGH RUTGERS NEW JERSEY-RDK102934-01:ENDOSOMAL CONTROL OF MICROBE-HOST H	93.847	1 R01 DK102934-01	27,016	
PASS-THROUGH SEATTLE CHILDREN'S HOSP-RDK0104936-03:GLUCAGON-LIKE PEPTIDE-1 AGONIST EF	93.847	1 R01 DK104936-01A	115,991	
PASS-THROUGH SILICON KIDNEY-RDK102240-01:IMPLANTABLE HEMODIALYZER FOR TRMT O	93.847	1 R43 DK102240-01	16,078	
PASS-THROUGH SILICON KIDNEY-RDK104299-01:AN INTRAVASCULAR BIOARTIFICIAL PANC	93.847	1 R43 DK104299-01	356	
PASS-THROUGH SOUTH FLORIDA-UDK085465-07:TRIALNET REVENUE CENTER- ONGOING OP	93.847	5 U01 DK85465-07	220,834	
PASS-THROUGH STANFORD-RDK092241-01A1:MIND THE KIDNEYS	93.847	1 R01 DK92241-01A1	2,647	
PASS-THROUGH TEXAS-RDK038217-25:REGULATION OF THICK ASCENDING LIMB	93.847	5 R01 DK038217-25	9,139	
PASS-THROUGH VANDERBILT UNIVERSITY-DDK010168-02S1:AN IMPLANTED INTRAPERITONEAL (IP-	93.847	3 DP3 DK10168-02S1	6,927	
PASS-THROUGH VANDERBILT UNIVERSITY-DK060667-13: VU:LIVER GLUCOSE FLUX IN OBESITY AN	93.847	2 R01 DK60667-13	17,480	
PASS-THROUGH VANDERBILT UNIVERSITY-DK097706-01:USING SOCIAL LEARNING TO IMPROVE ADO	93.847	1 DP3 DK97706-01	(300)	
PASS-THROUGH VANDERBILT UNIVERSITY-RDK054902-16A1:INTEGRATED CONTROL OF MUSCLE GLUC	93.847	2 R01 DK54902-16A1	45,797	
PASS-THROUGH VANDERBILT UNIVERSITY-RDK103831-01A1:SPATIO-TEMPORAL DISSECTION - MAIN	93.847	1 R01 DL103831-01A1	3,304	
PASS-THROUGH VANDERBILT UNIVERSITY-RDK105149-02:LASER-BASED MASS SPECTROMETRY ANALY	93.847	5 R33 DK105149-02	12,833	
PASS-THROUGH VANDERBILT UNIVERSITY-RDK106228-02:MICROTUBULE REGULATION OF PANCREATI	93.847	5 RO1 DK106228-02	7,709	
PASS-THROUGH VANDERBILT UNIVERSITY-RDK78158-06 REVISED NEURAL CREST CONTRIBUTIONS TO THE LOWER	93.847	5 R01 DK78158-06	6	
PASS-THROUGH VANDERBILT UNIVERSITY-TDK007563-28:MULTIDISCIPLINE TRAINING-MOLECULAR	93.847	5 T32 DK07563-28	1	
PASS-THROUGH VANDERBILT UNIVERSITY-TDK007563-30:MULTIDISCIPLINARY TRAINING IN MOLEC	93.847	5 T32 DK07563-30	3,034	
PASS-THROUGH VANDERBILT UNIVERSITY-UDK059637-15:VANDERBILT MOUSE METABOLIC PHENOTYP	93.847	5 U24 DK059637-15	552	
PASS-THROUGH VANDERBILT UNIVERSITY-UDK059637-16:VANDERBILT MOUSE METABOLIC PHENOTYP	93.847	2 U24 DK059637-16	628	
PASS-THROUGH VANDERBILT UNIVERSITY-UDK059637-17:VANDERBILT MOUSE METABOLIC PHENOTYP	93.847	2 U24 DK059637-17	284,663	
PASS-THROUGH VANDERBILT UNIVERSITY-UDK108120-01:HIGH-RESOLUTION ANALYSIS OF JUVENIL	93.847	1 UC4 DK108120-01	218,467	200
PASS-THROUGH VANDERBILT UNIVERSITY-UDK108120-01S1:HIGH-RESOLUTION ANALYSIS OF JUVEN	93.847	3 UC4 DK108120-01S1	4,732	
PASS-THROUGH WASHINGTON ST. LOUIS-RDK111175-01:ROLE OF CD36 IN NUTRIENT DELIVERY A	93.847	1 R01 DK111175-01	278,454	
PASS-THROUGH WASHINGTON ST. LOUIS-RDK96982-03:0TAUROURSODEOXYCHOLIC ACID FOR PROTE	93.847	5 RO1 DK96982-03	5,173	
PASS-THROUGH WASHINGTON-RDK099165-02:BIOLOGICAL DETERMINANTS OF PERITONE	93.847	5 R01 DK99165-02	6,961	
Total Diabetes, Digestive, and Kidney Diseases Extramural Research			**33,922,133**	**5,940,739**
FNS101788-01A1 GLUTAMATE-SENSITIVE, QUANTITATIVE MRI IN MS:	93.853	1 F32 NS101788-01A1	56,694	
KNS80988-04:06 DOPAMINE EFFECTS ON MESOCORTICOLIMB	93.853	5 K23 NS80988-06	192,697	
KNS83710-05 MTOR MODULATION OF MYELINATION	93.853	6 K08 NS83710-05	168,579	
KNS97618-01 MULTIMODAL MAPPING OF SUBCORTICAL AND CORTICAL	93.853	1 K99 NS97618-01	8,104	
R01 NS66927-08-10 PATHOPHYSIOLOGY OF CONDUCTION BLOC	93.853	5 R01 NS66927-10	280,479	54,791
RNS094041-03 PRIMARY PREVENTION OF STROKE IN CHILDREN WITH S	93.853	5 R01 NS94041-03	1,197,398	477,461
RNS097618-03 MULTIMODAL MAPPING OF SUBCORTICAL AND CORTICAL	93.853	4 R00 NS97618-03	192,965	
RNS100980-01A1:02 CARDIOVASCULAR PREDICTORS OF CEREBROVASCUL	93.853	1 R01 NS100980-02	288,436	

Accompanying notes follow this Schedule

Vanderbilt University Medical Center
Schedule of Expenditures of Federal Awards and State Financial Assistance
For the Year Ended June 30, 2018

Federal Grant/Pass-through Grantor/Project Name/Program or Cluster Title	CFDA Number	Federal/Pass-Through Award Number	Federal Expenditures	Passed to Sub-Recipients
Research and Development Cluster				
Department Of Health And Human Services				
RNS104149-01:02 RESTING STATE FMRI AS A BIOMARKER OF FUNCTIO	93.853	5 R01 NS104149-02	223,279	
RNS33300-22 GABA (A) RECEPTOR ASSEMBLY/TRAFFICKIN	93.853	6 R01 NS33300-22	15,329	
RNS69909-06 REPRESENTATION OF NOCICEPTION IN SII	93.853	6 R01 NS69909-06	6,676	
RNS75270-06 MRI STRUCTRUAL AND FUNCTIONAL CONNECTI	93.853	6 R01 NS75270-06	115,607	4,622
RNS78289-05 REGULATION OF NEUROGENESIS IN TSC BY MTORC1 AND	93.853	6 R01 NS78289-05	63,758	1,051
RNS78680-06 BIOPHYSICAL BASIS OF FUNCATIONAL CO	93.853	6 R01 NS78680-06	113,422	70
RNS78828-05 CHARACTERIZING HEMODYNAMIC COMPENSAT	93.853	6 R01 NS78828-05	63,970	3,446
RNS82635-04:05 ALTERED SYNAPSE FORMATION AND FUNCT	93.853	5 R01 NS82635-05	298,651	1,667
RNS92961-02:04 RESTING STATE CONNECTIVITY IN PRI	93.853	5 R01 NS92961-04	550,735	7,424
RNS93669-02:04 RESTING STATE CONNECTIVITY IN WHITE MATTER	93.853	5 R01 NS93669-04	554,503	201,610
RNS94041-02 PRIMARY PREVENTION OF STROKE IN CHILDREN	93.853	6 R01 NS94041-02	154,653	92,672
RNS96127-02:03 MRIBASED QUANTITATIVE BRAIN OXYGE	93.853	5 R01 NS96127-03	374,071	
RNS96483-01:02 IMPAIRED HOMEOSTATIC POTENTIATION OF GAB	93.853	5 R21 NS96483-02	205,367	
RNS97763-01:03 IMAGING COLLATERALS AND TISSUE METABOLISM IN	93.853	5 R01 NS97763-03	229,070	5,706
RNS97783-01:03 BIOLOGICAL DETERMINANTS OF IMPULSIVITY IN PAR	93.853	5 R01 NS97783-03	516,705	46,197
RNS97821-01:03 QUANTITATIVE ASSESSMENT OF PERIPHERAL NERVE	93.853	5 R01 NS97821-03	386,858	27,579
TNS07491-16S1 TRAINING PROGRAM IN ION CHANNEL AND TRANSPORTE	93.853	3 T32 NS07491-16S1	50,812	49,192
TNS07491-17 TRAINING PROGRAM IN ION CHANNEL AND TRANSPORTER	93.853	5 T32 NS07491-17	204,236	132,928
UNS077318-07 VANDERBILT SITE FOR NETWORK OF EXCELLENCE IN NE	93.853	5 U10 NS77318-07	306,283	
UNS65736-08 AUTONOMIC RARE DISEASES CLINICAL RESEARCH ADMIN	93.853	6 U54 NS65736-08	406,760	424,069
UNS65736-09 AUTONOMIC RARE DISEASES CLINICAL RES - ADMIN	93.853	5 U54 NS65736-09	1,170,071	667,261
UNS77318-06 VANDERBILT SITE FOR NETWORK OF EXCELL	93.853	6 U10 NS77318-06	163	
UNS86492-04 THE VANDERBILT STROKE TRIALS NETWORK REGIONAL CO	93.853	4 U10 NS86492-04	24,680	
UNS86492-05 THE VANDERBILT STROKE TRIALS NETWORK REGIONAL CO	93.853	5 U10 NS86492-05	450,264	72,595
PASS-THROUGH ALABAMA-RNS104339-01:BIOSYNTHETIC METABOLIC PATHWAY REGULATION	93.853	1 R01 NS104339-01	6,214	
PASS-THROUGH CALIFORNIA UCSF-NS62820:THE VASCULAR EFFECTS OF INFECTION IN PEDIATRIC	93.853	2 R56 NS62820-6A1	8,744	
PASS-THROUGH CALIFORNIA UCSF-NS92764-01A1:HIGH-DOSE ERYTHROPOIETIN-CAPITATION-PER PATIENT	93.853	1 U01 NS92764-01A1	1,856	
PASS-THROUGH CALIFORNIA UCSF-RNS092764-01A1:HIGH-DOSE ERYTHROPOIETIN FOR ASPH	93.853	1 U01 NS92764-01A1	2,502	
PASS-THROUGH CALIFORNIA UCSF-RNS096173-01A1:USE QUANTITATIVE PROTEOMICS TO FUNCTIONALLY	93.853	1 R01 NS096173-01A1	13,375	
PASS-THROUGH CALIFORNIA UCSF-UNS026835-01A1:PLATELET-ORIENTED INHIBITION IN N	93.853	1 U01 NS26835-01A1	2,874	
PASS-THROUGH CALIFORNIA UCSF-UNS092764-01A1:HIGH-DOSE ERYTHROPOIETIN FOR ASPH	93.853	1 U01 NS092764-01A1	24,868	
PASS-THROUGH CINCINNATI-UNS086090-05:TRANSFORMING RESEARCH AND CLINICAL	93.853	5 U01 NS086090-05	30,485	
PASS-THROUGH CINCINNATI-UNS092076-01A1:DEFUSE 3 ENDOVASCULAR THERAPY FOL	93.853	1 U01 NS92076-01A1	3,028	
PASS-THROUGH CINCINNATI-UNS095869-01A1:ARCADIA - ATRIAL CARDIOPATHY AND	93.853	1 U01 NS095869-01A1	2,902	
PASS-THROUGH FLORIDA-RNS082244-01:RLS:PATHOPHYSIOLOGY USING BTBD9 CON	93.853	1 R01 NS82244-01	8,138	
PASS-THROUGH JOHNS HOPKINS-UNS080824-05MISTIE III-A PHASE III RANDOMIZED, O	93.853	5 U01 NS80824	13,226	
PASS-THROUGH MASSACHUSETTS-NS102371-01A1:INTEGRATING COMMON AND RARE VARIATION TO DISCO	93.853	1 R01 NS102371-01A1	5,515	
PASS-THROUGH MASSACHUSETTS-UNS088312-01:NN105 (AVN011)STUDY TO DETERMINE TO	93.853	1 U01 NS088312-01	32,891	

Accompanying notes follow this Schedule

Vanderbilt University Medical Center
Schedule of Expenditures of Federal Awards and State Financial Assistance
For the Year Ended June 30, 2018

Federal Grant/Pass-through Grantor/Project Name/Program or Cluster Title	CFDA Number	Federal/Pass-Through Award Number	Federal Expenditures	Passed to Sub-Recipients
Research and Development Cluster				
Department Of Health And Human Services				
PASS-THROUGH MASSACHUSETTS-UNS088312-01:NN106 PROSPECTIVE PHASE II STUDY OF	93.853	1 U01 NS88312-01	161	
PASS-THROUGH MASSACHUSETTS-UNS088312-01:STUDY TO EVALUATE THE SAFETY, TOLERABILITY	93.853	1 U01 NS088312-01	(2,816)	
PASS-THROUGH MASSACHUSETTS-UNS090259-02:PHASE 3 TRIAL OF INOSINE FOR PARKIN	93.853	1 U01 NS90259-02	32,221	
PASS-THROUGH MASSACHUSETTS-UNS096767-01:NN107:EFFECTS OF AFQ056 ON LANGUAGE LEARNING IN	93.853	1 U01 NS096767-01	50,563	
PASS-THROUGH MAYO CLINIC-UNS080168-03:CAROTID REVASCULARIZATION AND MEDIC	93.853	5 U01 NS80168-03	9,708	
PASS-THROUGH MCLEAN-RNS097512-02:MECHANISMS OF CEREBROVASCULAR REACT	93.853	5 R01 NS097512-02	14,335	
PASS-THROUGH MICHIGAN-RNS095656-01A1:BDNF RS6265 AND RESPONSE TO DOPAM	93.853	1 R21 NS95656-01A1	2,602	
PASS-THROUGH OPTIMA-RNS064647-06:HIGH PERFORMANCE SEIZURE MONITORING	93.853	2 R44 NS64647-06	6,678	
PASS-THROUGH OPTIMA-RNS064647-07:HIGH PERFORMANCE SEIZURE MONITORING	93.853	2 R44 NS064647-07	70,583	
PASS-THROUGH PITTSBURGH-RNS081041-03:APPROACHES AND DECISIONS FOR ACUTE	93.853	5 U01 NS81041-03	6,454	
PASS-THROUGH ROCHESTER-NS61799-03: DOUBLE BLIND RANDOMIZED TRIAL	93.853	5 U01 NS61799-03	(14)	
PASS-THROUGH TENNESSEE-RNS094595-02:EFFECTS OF MODIFIED ERYTHROPOIETIN	93.853	5 R01 NS094595	18,731	
PASS-THROUGH UNIV OF LOUISVILLE-RNS100996-01A1:MODULATING INHIBITORY ACTION CONT	93.853	1 R01 NS100996-01A1	29,291	
PASS-THROUGH VANDERBILT UNIVERSITY-NS32387-18:20 HEREDITARY DEFECTS IN HUMAN SODIUM CHANNELS	93.853	2 R01 NS32387-18A1	(77)	
PASS-THROUGH VANDERBILT UNIVERSITY-RNS049251-10:MULTIMODAL REGISTRATION OF BRAIN-NE	93.853	2 R01 NS49251-10	66,747	
PASS-THROUGH VANDERBILT UNIVERSITY-RNS058639-08:THE BIOLOGICAL BASIS OF DIFFUSION-R	93.853	2 R01 NS58639-05/08	1	
PASS-THROUGH VANDERBILT UNIVERSITY-RNS086423-03:GAMMA-KETOALDEHYDES IN EPILEPTOGENE	93.853	5 R01 NS86423-03	1,071	
PASS-THROUGH VANDERBILT UNIVERSITY-RNS087796-02:VU:DEBULKING FROM WITIN:A STEERABLE	93.853	1 R21 NS87796-01/02	(36)	
PASS-THROUGH VANDERBILT UNIVERSITY-RNS095291-09A1:COMPUTER-ASSISTED FUNCTIONAL NEUR	93.853	9 R01 NS95291-09A1	84,446	
PASS-THROUGH VANDERBILT UNIVERSITY-RNS096238-02:VU:QUANTIFYING DIFFERENCES IN MTOR	93.853	5 R01 NS96238-02	12,009	
PASS-THROUGH VANDERBILT UNIVERSITY-RNS096238-03:QUANTIFYING DIFFERENCES IN MTOR ACTIVITY AND TU	93.853	5 R01 NS096238-03	4,167	
PASS-THROUGH VANDERBILT UNIVERSITY-RNS104497-01:CIRCADIAN AND SLEEP PROGRAMMING IN	93.853	1 R01 NS104497-01	8,209	
Total Extramural Research Programs in the Neurosciences and Neurological Disorders			**9,442,926**	**2,270,341**
FAI120553-03 IMPACT OF DIETARY METALS ON THE GUT MICROBIOME	93.855	5 F32 AI120553-03	7,330	
FAI122516-03 DEFINING THE MOLECULAR LINK BETWEEN ZINC	93.855	5 F32 AI122516-03	57,066	
HHSN272200800007C:VTEU ZOSTAVAX IN RENAL TRANSPLANT	93.855	HHSN272200800007C	(2,076)	
HHSN272201300023I VTEU 15-0060 TASK AREA C BASE	93.855	HHSN272201300023I	19,877	
HHSN272201300023I:VTEU 10-0074 PROTOCOL DEVELOPMENT IMPLEMEN	93.855	HHSN272201300023I	(13)	
HHSN272201300023I:VTEU 13-0045 TASK AREA C-BASE	93.855	HHSN272201300023I	76,364	
HHSN272201300023I:VTEU 13-0089 RSV TASK B PROTOCOL DEVELOPME	93.855	HHSN272201300023I	443,014	
HHSN272201300023I:VTEU 1400-15 CLINICAL TRIAL H7N9	93.855	HHSN272201300023I	1,328,442	555,660
HHSN272201300023I:VTEU 14-0079 SCOUTCAP TASK AREA C-BASE	93.855	HHSN272201300023I	329	
HHSN272201300023I:VTEU 14-0079 TASK AREA B SCOUT CAP PROTOCO	93.855	HHSN272201300023I	1,458,719	1,256,583
HHSN272201300023I:VTEU 16-0077 PK STUDY IN ICU TASK B & C1	93.855	HHSN272201300023I	164,490	
HHSN272201300023I:VTEU 16-0078 TASK AREA B-BASE	93.855	HHSN272201300023I	129,723	
HHSN272201300023I:VTEU FY 2017 TASK AREA A-BASE	93.855	HHSN272201300023I	142,061	
HHSN272201300023I:VTEU FY2018 TASK A-BASE	93.855	HHSN272201300023I	370,603	
HHSN272201300023I:VTEU INFLUENZA TASK B C1 C4 C6	93.855	HHSN272201300023I	410,805	247,857

Accompanying notes follow this Schedule

Vanderbilt University Medical Center
Schedule of Expenditures of Federal Awards and State Financial Assistance
For the Year Ended June 30, 2018

Federal Grant/Pass-through Grantor/Project Name/Program or Cluster Title	CFDA Number	Federal/Pass-Through Award Number	Federal Expenditures	Passed to Sub-Recipients
Research and Development Cluster				
Department Of Health And Human Services				
HHSN272201300023I:VTEU TASK B 13-0090 FOR PERTUSSIS IN PERU	93.855	HHSN272201300023I	1,689,148	1,620,637
HHSN27220130023I:VTEU 15-0066 TASK AREA B-BASE	93.855	HHSN272201300023I	252,284	
HHSN272201400018C:B-CELL EPITOPE MAPPING-CROWE	93.855	HHSN272201400018C	309,072	
HHSN272201400024C:B-CELL EPITOPE-CROWE	93.855	HHSN272201400024C	365,584	221,313
HHSN272201400024C:B-CELL SUPPLEMENT UNIVERSAL INFULENZA	93.855	HHSN272201400024C	61,045	
HHSN272201400024C:B-CELL SUPPLEMENT ZIKA VIRUS	93.855	HHSN272201400024C	291,924	
HHSN272201400024C:B-CELL UNIVERSAL FLU-CROWE	93.855	HHSN272201400024C	(53,743)	5,475
HHSN272201700071C:B-CELL EPITOPE-CROWE	93.855	HHSN272201700071C	569,231	284,747
HHSN272201700071C:B-CELL SUPPLEMENT UNIVERAL INFLUENZA	93.855	HHSN272201700071C	724,982	
HHSN272201700071C:B-CELL UNIVERSIAL FLU-CROWE	93.855	HHSN272201700071C	414,561	
KAI100700-05 THE ROLE OF OBESITY AND ADIPOCYTES	93.855	6 K23 AI100700-05	7,563	
KAI103038-05:06 KEY DETERMINANTS OF DENGUE VIRUS	93.855	5 K08 AI103038-06	26,692	
KAI104352-04 TUBERCULOSIS RISK & HIGHLY ACTIVE AN	93.855	6 K08 AI104352-04	53,910	
KAI104779-05 DEVELOPMENT & VALIDATION OF A CLINIC	93.855	6 K23 AI104779-05	9,640	
KAI106406-05 DECREASING INTERRUPTIONS & LOSSES HIV CARE	93.855	7 K23 AI106406-05	88,381	21,014
KAI106420-03:05 FLUOROQUINOLONE RESISTANCE IN PATI	93.855	5 K08 AI106420-05	168,072	25,460
KAI113107-03:04 HOST-PATHOGEN INTERACTIONS DURING OS	93.855	5 K08 AI113107-04	218,162	
KAI113150-05 EVALUATING THE FUNCTIONAL ANTIBODY R	93.855	5 K23 AI113150-05	186,759	
KAI116949-04 MICRORNA-23 CLUSTER REGULATION OF HELPER T	93.855	7 K08 AI116949-04	156,820	
KAI120875-02:04 THE DYNAMICS OF HIV AGNG AND T LYM	93.855	5 K23 AI120875-04	148,739	
KAI131895-01A1 THE HIV CARE CONTINUUM AND HEALTH POLICY: CHA	93.855	1 K01 AI131895-01A1	109,397	
KAI77930-09:10 MIDCAREER INVESTIGATOR PATIENT-ORIENT	93.855	5 K24 AI77930-10	87,475	
PAI110527-03 TN-CFAR - ADMIN CORE	93.855	5 P30 AI110527-03	2,092,758	1,032,091
PAI110527-04 TN-CFAR - ADMIN CORE	93.855	5 P30 AI110527-04	249,682	1,167
RAI051448-16 SELECTION AND REGULATION OF B LYMPHOCYTES IN ID	93.855	2 R01 AI051448-16	322,712	
RAI101171-05:06 HOST-MEDIATED ZINC SEQUESTRATION	93.855	5 R01 AI101171-06	392,885	167,974
RAI101171-07 HOST-MEDIATED ZINC SEQUESTRATION DURING ACINET	93.855	2 R01 AI101171-07	225,222	
RAI107052-03:05 TWO-COMPONENT SYSTEM INTERACTIONS A	93.855	5 R01 AI107052-05	436,155	1,400
RAI108197-05 DETERMINANTS OF CORONAVIRUS FIDELITY IN	93.855	5 R01 AI108197-05	112,529	50,424
RAI108197-06 DETERMINANTS OF CORONAVIRUS FIDELITY IN REPLICA	93.855	2 R01 AI108197-06	62,309	
RAI109690-03 NOVEL BIOCHEMICAL AND FUNATIONAL TAR	93.855	6 R21 AI109690-03	89	
RAI111820-06 PGI2 REGULATION OF TSLP-MEDIATED ALL	93.855	5 R01 AI111820-06	534,610	
RAI113292-03:05 FIT TO REMEMBER? B CELL METABOLIC	93.855	5 R01 AI113292-05	438,899	
RAI114339-03 A COMPETITION BINDING ASSAY FOR IDENTIF	93.855	6 R01 AI114339-03	136,254	
RAI114816-03:04 STRUCTURAL AND FUNCTIONAL BASIS OF	93.855	5 R01 AI114816-04	798,405	364,712
RAI114816-05 STRUCTURAL AND FUNCTIONAL BASIS-ROSSMAN SUB	93.855	5 R01 AI114816-05	100,146	100,146
RAI115419-03 CHARACTERIZATION OF CD8A CELLS AS A	93.855	6 R21 AI115419-03	30,179	
RAI118361-01A1 FLUOROQUINOLONES AND EFFLUX-MEDIATED CROSS RE	93.855	1 R56 AI118361-01A1	396,776	309,995

Accompanying notes follow this Schedule

Vanderbilt University Medical Center
Schedule of Expenditures of Federal Awards and State Financial Assistance
For the Year Ended June 30, 2018

Federal Grant/Pass-through Grantor/Project Name/Program or Cluster Title	CFDA Number	Federal/Pass-Through Award Number	Federal Expenditures	Passed to Sub-Recipients
Research and Development Cluster				
Department Of Health And Human Services				
RAI118932-02 TYPE IV PROTECIN SECRETION IN HELIC	93.855	6 R01 AI118932-02	16	
RAI118932-02:04 TYPE IV PROTEIN SECRETION IN HELI	93.855	5 R01 AI118932-04	607,846	208,519
RAI119224-02 HIGH THROUGHPUT IDENTIFICATION OF TR	93.855	6 R21 AI119224-02	36,112	
RAI120790-01A1:02 PREDICTORS OF TREATMENT TOXICITY, FAILURE	93.855	5 R01 AI120790-02	420,487	264,250
RAI121420-02:03 THE ROLE OF OVARIAN HORMONES ON ALL	93.855	5 R21 AI121420-03	178,949	
RAI121549-01A1:02 THE CONTRIBUTION OF B LYMPHOCYTE TO T1D	93.855	5 R21 AI121549-02	154,225	
RAI121796-01A1:02 PROSTAGLANDINS AS PROTECTIVE MEDIATORS IN	93.855	5 R21 AI121796-02	139,982	
RAI123307-01A1 GENERATION AND CHARACTERIZATION OF FULL-LENGT	93.855	5 R21 AI123307-02	224,320	
RAI124190-01:02 TARGETING THE T CELL IMMUNE SYNAPSE IN AUTO	93.855	1 R03 AI124190-02	67,412	2,149
RAI124456-01A1:02 GLP-1R SIGNALING IN ALLERGIC INFLAMMATION	93.855	5 R01 AI124456-02	449,975	20,853
RAI124872-02:04 HARMONIST:A SCALABLE TOOLKIT FOR STA	93.855	5 R24 AI124872-04	633,902	101,507
RAI125642-01A1 RISK STRATIFICATION AND DECISION SUPPORT TO	93.855	1 R01 AI125642-01A1	521,628	80,864
RAI127129-01:02 MOLECULAR ANALYSIS OF THE ADAPTIVE IMMUNE RE	93.855	5 R21 AI127129-02	205,046	
RAI127205-02 THE RISK OF HIV SEROCONVERSION FOLLOWING AN HPV	93.855	7 R01 AI127205-02	42,946	16,272
RAI127828-01:02 VUMC HUMAN NEUTRALIZING ANTIBODIES FOR ZIKA	93.855	1 R01 AI127828-02	706,807	233,369
RAI128281-01A1 LNCRNAS TETHER TRANSCRIPTION FACTORS TO ENABL	93.855	1 R21 AI128281-01A1	208,739	100
RAI129950-01A1 DESIGN OF IMMUNOGENS FOR ELICITATION OF NEUTR	93.855	1 R21 AI129950-01A1	9,245	
RAI130459-02 ANTIGENIC LANDSCAPE OF THE HUMAN HELMINTH IGE	93.855	5 R01 AI130459-02	261,873	
RAI131722-02 NEUTRALIZATION FINGERPRINTING ANALYSIS OF POL	93.855	1 R01 AI131722-02	602,959	71,581
RAI131771-01A1 STATISTICAL METHODS FOR CORRELATED OUTCOME	93.855	1 R01 AI131771-01A1	34,029	
RAI132560-01:02 THE IMPACT OF HYPOXIA ON STAPHYLOCOCCUS AURE	93.855	5 R01 AI132560-02	255,570	70
RAI134036-01 THE ROLE OF MACROPHAGES IN CHORIOAMNIONITIS AND	93.855	1 R01 AI134036-01	418,784	94,569
RAI27828-01 HUMAN NEUTRALIZING ANTIBODIES FOR ZIKA VIRUS	93.855	1 R01 AI127828-01	179,773	
RAI39657-20S1 STRUCTURE AND FUNCTION OF HELICOBACTER PYLORI	93.855	3 R01 AI39657-20S1	150,612	36,850
RAI39657-21 STRUCTURE AND FUNCTION OF HELICOBACTER PYLORI	93.855	2 R01 AI39657-21	162,129	
RAI44924-16:18 IFN GAMMA GENE REGULATION IN T CEL	93.855	5 R01 AI44924-18	421,171	10,651
RAI51448-14:15 SELECTION & REGULATION OF B LYMPHOCYT	93.855	6 R01 AI51448-14	57,065	
RAI69233-12:13 MECHANISM AND FUNCTION OF HEME-IRON UTILIZATI	93.855	6 R01 AI69233-12	494,591	400
RAI73843-08:10 PATHOBIOLOGY OF HEME INDUCIBLE TRANS	93.855	5 R01 AI73843-10	436,939	942
RAI76121-09 MECHANISM AND REGULATION OF HIV-1	93.855	6 R01 AI76121-09	13,424	
RAI77505-08:10 PHARMACOGENOMICS OF HIV THERPY	93.855	5 R01 AI77505-10	1,134,255	511,237
RAI93234-06 STATISTICAL METHODS FOR ORDINAL VARIA	93.855	6 R01 AI93234-06	108,240	34,301
RAI95755-07:08 STRUCTURAL MECHANISMS OF CLOSTRIDIUM DIFFICIL	93.855	5 R01 AI95755-08	290,515	9,441
TAI07474-23 VANDERBILT INFECTION PATHOGENESIS AND EPIDEMIOLO	93.855	5 T32 AI07474-23	28,947	
TAI07474-24 VANDERBILT INFECTION PATHOGENESIS AND EPIDEMIOL	93.855	5 T32 AI07474-24	237,522	
TAI95202-07 CHILDHOOD INFECTIONS RESEARCH PROGRAM	93.855	2 T32 AI95202-07	37,833	
TAI95202-08 CHILDHOOD INFECTIONS RESEARCH PROGRAM	93.855	5 T32 AI95202-08	181,717	
UAI104336-06 CHRONIC GRAFT DESTRUCTION: INTERPLAY OF ALLO- A	93.855	5 U01 AI104336-06	651,708	620,061

Accompanying notes follow this Schedule

Vanderbilt University Medical Center
Schedule of Expenditures of Federal Awards and State Financial Assistance
For the Year Ended June 30, 2018

Federal Grant/Pass-through Grantor/Project Name/Program or Cluster Title	CFDA Number	Federal/Pass-Through Award Number	Federal Expenditures	Passed to Sub-Recipients
Research and Development Cluster				
Department Of Health And Human Services				
UAI104336-06S1 CHRONIC GRAFT DESTRUCTION: INTERPLAY OF ALLO-	93.855	3 U01 AI104336-06S1	26,908	
UAI117905-02 -ADMINCORE- STRUCTURE BASED DESIGN OF A	93.855	6 U19 AI117905-02	637	
UAI117905-03 STRUSTURE BASED DESIGN OF ANTIBODIES AND VACCIN	93.855	5 U19 AI117905-03	1,542,981	984,313
UAI117905-04 STRUCTURE BASED DESIGN OF ANTIBODIES AND VACCIN	93.855	5 U19 AI117905-04	91,658	
UAI125135-01 COMPARISON OF HIGH VS. STANDARD DOSE FLU VACC	93.855	1 U01 AI125135-01	267,617	226,263
UAI125135-02 COMPARISON OF HIGH VS. STANDARD DOSE FLU VACCIN	93.855	5 U01 AI125135-02	1,119,499	353,666
UAI132004-01 HIGH VS. STANDARD DOSE FLU VACCINE IN ADULT STE	93.855	1 U01 AI132004-01	596,575	113,446
UAI69439-12 VANDERBILT HIV CLINICAL TRIALS UNIT - ADMIN CORE	93.855	5 UM1 AI69439-12	914,793	440,006
UAI69439-13 VANDERBILT HIV CLINICAL TRIALS UNIT - ADMIN COR	93.855	5 UM1 AI69439-13	808,559	166,303
UAI69923-12 CARIBBEAN, CENTRAL AND SOUTH AMERICA NETWORK FOR	93.855	2 U01 AI69923-12	298,720	288,645
UAI69923-13 CARIBBEAN, CENTRAL AND SOUTH AMERICA MAIN CENTE	93.855	5 U01 AI69923-13	1,305,876	495,890
UAI95227-07 VIRAL & HOST DETERMINANTS OF INFANT PROJECT 1	93.855	2 U19 AI95227-07	46,008	48,731
UAI95227-08 PROJECT 1 VIRAL AND HOST DETERMINANTS OF INFANT	93.855	5 U19 AI95227-08	1,342,985	287,848
PASS-THROUGH AECOM-UAI096299-07:CENTRAL AFRICA INTERNATIONAL EPIDEM	93.855	2 U01 AI96299-07	513	
PASS-THROUGH AECOM-UAI096299-08:CENTRAL AFRICA INTERNATIONAL EPIDEM	93.855	5 U01 AI096299-08	84,870	
PASS-THROUGH ALABAMA-AI134648-01: DEFINING THE BIOLOGICAL RELEVANCE OF HIV-1 ADAP	93.855	1 R01 AI134648-01	78,549	
PASS-THROUGH ALABAMA-RAI134648-02:DEFINING THE BIOLOGICAL RELEVANCE OF HIV-1 ADAP	93.855	1 R01 AI134648-02	9,575	
PASS-THROUGH ALABAMA-UAI109680-04:ANTIVIRAL DRUG DISCOVERY AND DEVELO	93.855	5 U19 AI109680-04	325,165	
PASS-THROUGH ALABAMA-UAI109680-05:ANTIVIRAL DRUG DISCOVERY AND DEVELO	93.855	1 U19 AI109680-05	78,376	
PASS-THROUGH BENAROYA RESEARCH-UAI109565-03:INT058A1 EXTEND: IMMUNE TOLERANCE N	93.855	5 UM1 AI109565-03	(37,382)	
PASS-THROUGH BENAROYA RESEARCH-UAI109565-04:IMMUNE TOLERANCE NETWORK - CRM	93.855	5 UM1 AI109565-04	33,354	
PASS-THROUGH BENAROYA RESEARCH-UAI109565-05:EXTEND-PRESERVING BETA-CELL FUNCTION WITH TOCIL	93.855	5 UM1 AI109565-05	19,866	
PASS-THROUGH BOSTON-RAI134430-01:MECHANISMS OF FAILURE/RELAPSE AND E	93.855	1 R01 AI134430-01	30,918	
PASS-THROUGH BWH-RAI123001-02:ACTG - REPRIEVE A5332 WOMEN'S ANCIL	93.855	5 R01 AI123001-02	581	
PASS-THROUGH BWH-UAI068636-10:ACTG-PROTOCOL FUNDS	93.855	5 UM1 AI68636-10	(54)	
PASS-THROUGH BWH-UAI068636-11:ACTG-F GUARANTEED CORE FUNDS	93.855	5 UM1 AI68636-11	192,061	
PASS-THROUGH BWH-UAI068636-11:ACTG-PROTOCOL FUNDS	93.855	5 UM1 AI68636	30,330	
PASS-THROUGH BWH-UAI068636-11:AIDS CLINICAL TRIALS GROUP - EXEC C	93.855	5 UM1 AI68636-11	8,601	
PASS-THROUGH BWH-UAI068636-12:ACTG GUARANTEED CORE FUNDS	93.855	5 UM1 AI68636-12	188,375	
PASS-THROUGH BWH-UAI068636-12:ACTG YEAR 12 PF FIXED ACCRUAL FUNDS	93.855	5 UM1 AI68636-12	115,671	
PASS-THROUGH BWH-UAI068636-12:AIDS CLINICAL TRIALS GROUP:ACTG	93.855	5 UM1 AI068636-12	7,587	
PASS-THROUGH BWH-UAI106701-05:HUMAN DNA REPOSITORY SUPPORT LABORA	93.855	5 UM1 AI106701-05	98,039	
PASS-THROUGH BWH-UAUI106701-04:HUMAN DNA REPOSITORY SUPPORT LABOR	93.855	5 UM1 AI106701-04	466,913	
PASS-THROUGH CALIFORNIA UC BERKELEY-PAI106695-02:PROTECTIVE IMMUNITY FOLLOWING DENGU	93.855	5 P01 AI106695-02	7,596	
PASS-THROUGH CALIFORNIA UC BERKELEY-PAI106695-03:PROTECTIVE IMMUNITY FOLLOWING DENGU	93.855	5 P01 AI106695-03	461,549	
PASS-THROUGH CALIFORNIA-RAI117211-02:TRANSFERRIN COMBINATION THERAPY TO	93.855	5 R01 AI117211-02	67,622	
PASS-THROUGH CEGIR-UAI117804-01:TRAINING GRANT - CONSORTIUM OF EOSI	93.855	1 U54 AI17804	26,900	
PASS-THROUGH DUKE-RAI103315-01A1:MULTI-CENTER STUDIES-IMPROVE DIAG	93.855	1 R01 AI103315-01A1	75	

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Vanderbilt University Medical Center
Schedule of Expenditures of Federal Awards and State Financial Assistance
For the Year Ended June 30, 2018

Federal Grant/Pass-through Grantor/Project Name/Program or Cluster Title	CFDA Number	Federal/Pass-Through Award Number	Federal Expenditures	Passed to Sub-Recipients
Research and Development Cluster				
Department Of Health And Human Services				
PASS-THROUGH DUKE-UAI104681-05:ANTIBACTERIAL RESISTANCE LEADERSHIP	93.855	4 UM1 AI104681-05	27,366	
PASS-THROUGH DUKE-UAI104681-06:ANTIBACTERIAL RESISTANCE LEADERSHIP	93.855	5 UM1 AI104681-06	37,565	
PASS-THROUGH EMORY-HHSN27220150008C:TARGETING THERAPEUTICS DEVELOPM	93.855	HHSN27220150008C	71,590	
PASS-THROUGH FAMILY HEALTH INTERNATIONAL-UAI068619-12:PO16002801:HIV PREVENTION TRIALS NE	93.855	5 UM1 AI068619-12	39,271	39,271
PASS-THROUGH FAMILY HEALTH INTERNATIONAL-UAI068619-12:PO17001877:HIV PREVENTION TRIALS NE	93.855	5 UM1 AI068619-12	1,345,908	1,331,408
PASS-THROUGH FHCRC-UAI068614-10:HVTN 704/HPTN 085 PROTOCOL FUNDING	93.855	5 UM1 AI68614-10	(26)	
PASS-THROUGH FHCRC-UAI068614-10:HVTN PROTOCOL FUNDING (PF)	93.855	5 UM1 AI68614-10	198	
PASS-THROUGH FHCRC-UAI068614-11:HVTN 704-085 AMP STUDY PROTOCOL FUN	93.855	5 UM1 AI68614-11	375,399	
PASS-THROUGH FHCRC-UAI068614-11:HVTN INITIATIVES PROGRAM (HIP) - PI	93.855	5 UM1 AI68614-11	36,773	
PASS-THROUGH FHCRC-UAI068614-11:HVTN PROTOCOL FUNDING	93.855	5 UM1 AI68614-11	188,952	
PASS-THROUGH FHCRC-UAI068614-12: HVTN 704- 085 AMP STUDY	93.855	5 UM1 AI68614-12	368,810	
PASS-THROUGH FHCRC-UAI068614-12:HVTN PROTOCOL FUNDING (PF)	93.855	5 UM1 AI68614-12	383	
PASS-THROUGH HAWAII-RAI089999-07:SELENOPROTEIN K MODULATES CALCIUM-D	93.855	5 R01 AI89999-07	14,312	
PASS-THROUGH HAWAII-RAI089999-08:SELENOPROTEIN K MODULATES CALCIUM-D	93.855	5 R01 AI089999-08	11,869	
PASS-THROUGH INDIANA-UAI069911-12:HIV PEDIATRIC METHODS AND MODELING:	93.855	5 U01 AI069911-12	25,323	
PASS-THROUGH INTEGRAL-HHSN272201400058C:B-CELL SUPPLEMENTAL EPITOPE DISCOVERY AND	93.855	HHSN272201400058C	284,903	
PASS-THROUGH INTEGRAL-HHSN272201400058C:INTEGRAL B-CELL EPITOPE DISCOVERY	93.855	HHSN272201400058C	63,247	
PASS-THROUGH IQUITY-RAI124766-02A1:LONG NON-CODING RNA SIGNATURES T	93.855	2 R44 AI124766-02A1	42,172	
PASS-THROUGH IQUITY-RAI129147-01:LONG NON-CODING RNA SIGNATURES TO D	93.855	1 R43 AI129147-01	32,189	
PASS-THROUGH IQUITY-RAI129147-02:LONG NON-CODING RNA SIGNATURES TO D	93.855	2 R44 AI129147-02	19,031	
PASS-THROUGH JACKSON-RAI121517-01:HELICOBACTER PYLORI CAGA TOXIN POLY	93.855	1 R21 AI121517-01	14,610	
PASS-THROUGH JOHNS HOPKINS-RAI127469-01A1:MOLECULAR AND STRUCTURAL CHARACTE	93.855	1 R01 AI127469-01A1	67,019	
PASS-THROUGH JOHNS HOPKINS-UAI068632-11:LOC-IMPAACT LEADERSHIP GROUP	93.855	2 UM1 AI68632-11	2,696	
PASS-THROUGH JOHNS HOPKINS-UAI068632-12: LOC-IMPAACT LEADERSHIP GROUP	93.855	2 UM1 AI68632-12	4,863	
PASS-THROUGH JOHNS HOPKINS-UAI069918-11:NORTH AMERICAN AIDS COLLABORATION O	93.855	5 U01 AI69918-11	(2)	
PASS-THROUGH JOHNS HOPKINS-UAI069918-12:NORTH AMERICAN AIDS COLLABORATION O	93.855	5 U01 AI69918-12	105,322	
PASS-THROUGH MEHARRY-RAI122960-01A1:MEHARRY: ROLE OF THE VIRAL CAPSID	93.855	1 R56 AI122960-01A1	12,612	
PASS-THROUGH NEW YORK-RAI105129-04:CONTRIBUTION OF LUKED TO STAPHYLOCO	93.855	5 R01 AI105129-04	4,638	
PASS-THROUGH NEW YORK-RAI105129-05:CONTRIBUTION OF LUKED TO STAPHYLOCO	93.855	5 R01 AI105129-05	6,684	
PASS-THROUGH NORTH CAROLINA-RAI132178-01:BROAD-SPECTRUM ANTIVIRAL GS-5734 TO	93.855	1 R01 AI132178-01	109,408	
PASS-THROUGH OHIO STATE-RAI128418-01A1:DEVELOPMENT OF SMALL MOLECULE MOS	93.855	1 R21 AI128418-01A1	102,471	
PASS-THROUGH PITTSBURGH-RAI085062-07A1:HOST DETERMINIANTS OF HUMAN METAP	93.855	2 R01 AI85062-07A1	17,775	
PASS-THROUGH TEXAS-UAI070412-10:IDENTIFYING AND COMPARING THE SHARE	93.855	5 U19 AI70412-10	631	
PASS-THROUGH TEXAS-UAI109711-04:ADVANCEMENT OF TREATMENTS FOR EBOLA	93.855	5 U19 AI109711-04	355,988	3,063
PASS-THROUGH TEXAS-UAI109711-05:ADVANCEMENT OF TREATMENTS FOR EBOLA	93.855	5 U19 AI109711-05	296,281	
PASS-THROUGH U OF EDUARDO-RAI112295-03:BACTEREMIA IN HIV-INFECTED CHILDREN	93.855	1 R01 AI112295-03	1,149	
PASS-THROUGH U OF EDUARDO-RAI112295-04:BACTEREMIA IN HIV-INFECTED CHILDREN	93.855	1 R01 AI112295-04	48,454	
PASS-THROUGH VANDERBILT UNIVERSITY-RAI121626-01A1:ENGINEERED NANOPARTICLES FOR PROT	93.855	1 R21 AI121626-01A1	46,061	

Accompanying notes follow this Schedule

Vanderbilt University Medical Center
Schedule of Expenditures of Federal Awards and State Financial Assistance
For the Year Ended June 30, 2018

Federal Grant/Pass-through Grantor/Project Name/Program or Cluster Title	CFDA Number	Federal/Pass-Through Award Number	Federal Expenditures	Passed to Sub-Recipients
Research and Development Cluster				
Department Of Health And Human Services				
PASS-THROUGH VANDERBILT UNIVERSITY-TAI112541-04:CHEMICAL BIOLOGY OF INFECTIOUS DISE	93.855	5 T32 AI112541-04	3,737	
PASS-THROUGH WASHINGTON ST. LOUIS-HHSN272201400018C WUSTL B-CELL EPITOPE MAPPING	93.855	HHSN272201400018C	(1,543)	
PASS-THROUGH WASHINGTON ST. LOUIS-HHSN272201400018C:B-CELL EPITOPE-WUSTL	93.855	HHSN272201400018C	162,669	
PASS-THROUGH WASHINGTON ST. LOUIS-RAI073755-08S1:ANTIBODY-BASED PROTECTION AGAINST	93.855	3 R01 AI073755-08S1	26,561	
PASS-THROUGH WASHINGTON ST. LOUIS-RAI073755-09:ANTIBODY-BASED PROTECTION AGAINST D	93.855	5 R01 AI073755-09	(274)	
PASS-THROUGH WASHINGTON ST. LOUIS-RAI073755-10:ANTIBODY-BASED PROTECTION AGAINST D	93.855	5 R01 AI073755-10	58,030	
Total Allergy and Infectious Diseases Research			**42,678,877**	**13,363,496**
PASS-THROUGH KENTUCKY-RAG046116-01A1:PAIN AND WELL-BEING IN OLDER WOME	93.856	1 R01 AG46116-01A1	11,614	
Total Microbiology and Infectious Diseases Research			**11,614**	
KGM102676-05 MITOCHONDRIAL DYSFUNCTION, OXIDATIVE	93.859	6 K23 GM102676-05	27,180	
KGM110469-03:05 SALIVARY CORTISOL AS A MARKER OF CO	93.859	5 K23 GM110469-04	144,242	
KGM117367-02:04 PREVENTION OF ENDOTHELIAL INJURY BY TOLL-LI	93.859	5 K08 GM117367-04	163,793	
KGM117395-03 PHARMACOGENETIC DETERMINANTS OF VARI	93.859	6 K23 GM117395-03	136,293	11,689
KGM123345-01A1 ENHANCEMENT OF INNATE ANTI-MICROBIAL IMMUNITY	93.859	1 K08 GM123445-01A1	113,175	
PGM115305-03 IMPROVING PREDICTION OF DRUG ACTION - AC	93.859	5 P50 GM115305-03	33,293	7,068
PGM115305-04 IMPROVING PREDICTION OF DRUG ACTION- AC	93.859	5 P50 GM115305-04	2,344,406	192,282
RGM103859-03:04 INFORMATICS TOOLS FOR PHARMACOGENOMI	93.859	5 R01 GM103859-04	553,685	493,490
RGM104306-05 AUGMENTATION OF INNATE ANTI-MICROBIA	93.859	5 R01 GM104306-05	29,740	63,296
RGM109145-04:05 DRUG METABOLISM GENOTYPES IN CLINICAL	93.859	5 R01 GM109145-05	256,216	
RGM112871-02:04 HYPER-OXYGENATION, OXIDATIVE STRESS, AN	93.859	5 R01 GM112871-04	308,443	
RGM115353-02:04 SERIAL NON-INVASIVE MOLECULAR ANALYSIS OF EX	93.859	5 R01 GM115353-04	380,892	
RGM118300-01:03 NIH:ELUCIDATING FIBROBLAST HETEROGENEITY AS	93.859	5 R01 GM118300-02	278,716	
RGM118557-01:03 CHEMICAL GENETIC ANALYSIS OF VERTEBRA	93.859	5 R01 GM118557-03	407,681	
RGM120484-01A1:02 THE INSIGHT-ICU STUDY: ILLUMINATING NEUROP	93.859	5 R01 GM120484-02	513,903	
RGM120523-01:02 PLEITROPY OF PCSK9 INHIBITION	93.859	5 R01 GM120523-02	235,352	
RGM121711-01 ENHANCING RESISTANCE TO INFECTION AFTER BURN IN	93.859	1 R01 GM121711-01	279,572	
RGM124109-01:02 SYSTEM CONSTRUCTION FOR POPULATION PHARMACOK	93.859	1 R01 GM124109-01	191,313	
RGM124685-01 A MULTI-SCALE APPROACH TO THE MAMMALIAN CIRCADI	93.859	1 R35 GM124685-01	169,881	
RGM66885-15 RESISTANCE OF BETA 2 MICROGLOBULIN NU	93.859	5 R01 GM66885-15	190	
RGM99924-06:07 HEPATIC OATP DRUG TRANSPORTERS AND	93.859	5 R01 GM99924-07	295,138	
TGM07569-41 CLINICAL PHARMACOLOGY TRAINING PROGRAM	93.859	5 T32 GM07569-41	6,185	11,625
TGM07569-42 CLINICAL PHARMACOLOGY TRAINING PROGRAM	93.859	2 T32 GM07569-42	507,382	
TGM108554-04 TIPS: TRAINING IN PERIOPERATIVE SCIENCE	93.859	5 T32 GM108554-04	11,511	
TGM108554-05 TIPS: TRAINING IN PERIOPERATIVE SCIENCE	93.859	5 T32 GM108554-05	132,271	
PASS-THROUGH ALABAMA-GM118361-02:GENETIC REGULATION OF UNCONVENTIONAL PROSTAGLAND	93.859	5 R01 GM118361-03	16,290	
PASS-THROUGH ALABAMA-RGM118361-01:GENETIC REGULATION OF UNCONVENTIONA	93.859	1 R01 GM118361-01	(143)	
PASS-THROUGH ALABAMA-RGM118361-02:GENETIC REGULATION OF UNCONVENTIONA	93.859	5 R01 GM118361-02	26,051	
PASS-THROUGH CCHMC-RGM108025-04:NOVEL DIAGNOSTIC AND STRATIFICATION	93.859	5 R01 GM108025-04	20,645	

Accompanying notes follow this Schedule

Vanderbilt University Medical Center
Schedule of Expenditures of Federal Awards and State Financial Assistance
For the Year Ended June 30, 2018

Federal Grant/Pass-through Grantor/Project Name/Program or Cluster Title	CFDA Number	Federal/Pass-Through Award Number	Federal Expenditures	Passed to Sub-Recipients
Research and Development Cluster				
Department Of Health And Human Services				
PASS-THROUGH CHILDRENS PHILADELPHIA-RGM108807-04:LAMELLAR BODY BIOGENESIS IN HEALTH	93.859	5 R01 GM108807-04	180,337	7,948
PASS-THROUGH CHILDRENS PHILADELPHIA-RGM108807-04:LAMELLAR BODY BIOGENESIS IN HEALTJ	93.859	1 R01 GM108807-01A1-02	35,850	13,819
PASS-THROUGH CINCINNATI-RCM114640-04:STRUCTURE-FUNCTION INVESTIGATION OF DAN-MEDIATE	93.859	5 R01 GM114640-04	11,019	
PASS-THROUGH CINCINNATI-RGM114640-01:STRUCTURE-FUNCTION INVESTIGATION-UN	93.859	1 R01 GM114640-01	12,697	
PASS-THROUGH CORNELL-RGM105688-05:NOA-NATIONAL INFRASTRUCTURE FOR STA	93.859	5 R01 GM105688-05	8,648	
PASS-THROUGH DUKE-RGM117473-01A1:CONTROL OF COPII VESICLE TRAFFICK	93.859	1 R01 GM117473-01A1	40,551	
PASS-THROUGH EMORY-RGM111027-17A1:VIRAL AND CELLULAR DETERMINANTS O	93.859	9 R01 GM111027-17A1	(950)	
PASS-THROUGH OHSU-RGM116184-02:FX AND SEPSIS	93.859	5 R01 GM116184-02	19,208	
PASS-THROUGH PENNSYLVANIA-RGM105247-01:LINKING MODELS AND POLICY USING ACT	93.859	1 R01 GM105247-01	34,694	480
PASS-THROUGH PITTSBURGH-PGM082251-10:PITTSBURGH CENTER FOR HIV PROTEIN I	93.859	4 P50 GM82251-10	14,646	
PASS-THROUGH PITTSBURGH-PGM082251-11:PITTSBURGH CENTER FOR HIV PROTEIN I	93.859	2 P50 GM082251-11	330,219	800
PASS-THROUGH TENNESSEE-RGM119197-01:TRAINING INNATE IMMUNITY: A NEW APP	93.859	1 R01 GM119197-01	225,010	800
PASS-THROUGH VANDERBILT UNIVERSITY-PGM015431-48:RESEARCH CENTER FOR PHARM AND DRUG	93.859	5 P01 GM15431-48	(4,423)	
PASS-THROUGH VANDERBILT UNIVERSITY-RGM076592-09:CONVERGENCE OF THE COX-2 AND 5-LIPO	93.859	5 R01 GM76592-09	391	
PASS-THROUGH VANDERBILT UNIVERSITY-RGM117916-01:VU:EXOSOME-FILOPODIA INTERACTIONS	93.859	1 R01 GM117916-01	7,667	
PASS-THROUGH VANDERBILT UNIVERSITY-RGM117916-03:EXOSOME-FILOPODIA INTERACTIONS	93.859	5 R01 GM117916-03	5,018	
PASS-THROUGH VANDERBILT UNIVERSITY-RGM118412-01A1: NOVEL PATHWAYS OF EICOSANOID MET	93.859	1 R01 GM118412-01A1	37,304	
PASS-THROUGH VANDERBILT UNIVERSITY-RGM125028-01:DECODING THE FUNCTIONS OF MYOSIN II ISOFO	93.859	1 R35 GM125028-01	895	
PASS-THROUGH VANDERBILT UNIVERSITY-TLM007450-14:VANDERBILT BIOMEDICAL INFORMATICS T	93.859	5 T15 LM07450-14	2,300	
Total Biomedical Research and Research Training			**8,544,376**	**803,297**
KHD43483-16 BIRCWH -ADMIN	93.865	5 K12 HD43483-16	28,079	
KHD43483-17 BIRCWH - ADMIN	93.865	2 K12 HD43483-17	403,125	
KHD87023-03 PATHOGENESIS, TARGETED THERAPEUTICS, AND NEW VAC	93.865	5 K12 HD87023-03	152,098	
KHD87023-04 PATHOGENESIS, TARGETED THERAPEUTICS, AND NEW	93.865	5 K12 HD87023-04	200,894	
RHD093671-01 LARGE-SCALE STUDIES IN EMERGE TO DISCOVER THE	93.865	1 R01 HD093671-01	627,796	
RHD59794-09:11 ROLE OF PARENT HEALTH LITERACY PR	93.865	5 R01 HD59794-11	571,861	341,408
RHD74584-05:06 PRESCRIBED OPIOD SAFETY IN CHILDREN	93.865	5 R01 HD74584-06	421,231	
RHD74711-04:05 UNDERSTANDING THE GENETIC RISK UNDERLYING RAC	93.865	5 R01 HD74711-05	235,399	4,229
RHD76983-04:06 PREDICTING TREATMENT RESPONSE IN PEDI	93.865	5 R01 HD76983-06	522,486	133,641
RHD80148-02:03 PAROUS MOUSE UNIQUE MODEL TO DEFINE	93.865	5 R21 HD80148-03	142,163	
RHD81121-02:05 DETECTING BIOCHEMICAL CHANGES IN THE	93.865	5 R01 HD81121-05	500,185	199,514
RHD84461-02:03 PHARMACOGENETICS AND PERSONALIZED MEDICINE	93.865	5 R01 HD84461-03	838,904	
RHD84500-02:04 MARKERS OF DISEASE PROGRESSION IN	93.865	5 R01 HD84500-04	171,793	43,377
RHD84500-02:04 MARKERS OF DISEASE PRORGRESSION IN MECP2 DUP	93.865	5 R01 HD84500-04	152,588	23,468
RHD86792-02:04 THE IMPACT OF NONROUTINE EVENTS ON	93.865	5 R01 HD86792-04	481,132	40,094
RHD88662-01A1:02 NONINVASIVE MARKERS OF CHRONIC NAUSEA IN	93.865	5 R01 HD88662-02	208,065	36,194
RHD88830-01A1:02 IDENTIFYING SMALL MOLECULES THAT REGULATE	93.865	5 R21 HD88830-02	156,776	
RHD90061-02 DETERMINING THE CONTRIBUTION OF ZINC DEFICIEN	93.865	1 R01 HD90061-01A1	171,800	140

Accompanying notes follow this Schedule

Vanderbilt University Medical Center
Schedule of Expenditures of Federal Awards and State Financial Assistance
For the Year Ended June 30, 2018

Federal Grant/Pass-through Grantor/Project Name/Program or Cluster Title	CFDA Number	Federal/Pass-Through Award Number	Federal Expenditures	Passed to Sub-Recipients
Research and Development Cluster				
Department Of Health And Human Services				
THD060554-09 CONDUCTING CHILD HEALTH CARE RESEARCH IN VULNER	93.865	5 T32 HD060554-09	92,581	
THD60554-07L CONDUCTING CHILD HEALTH CARE RESEARCH IN VULNER	93.865	6 T32 HD60554-07	(5,662)	28,588
THD60554-08 CONDUCTING CHILD HEALTH CARE RESEARCH IN VULNERA	93.865	5 T32 HD60554-08	384,956	5,793
THD68256-06 PREVENTING PREMATURITY AND POOR PREGNANC	93.865	6 T32 HD68256-06	21,034	
UHD083211-05 EUNICE KENNEDY SHRIVER INTELLECTUAL AND DEVELOP	93.865	5 U54 HD083211-05	83,756	
UHD76733-04 TIMING OF INGUINAL HERNIA REPAIR IN PREMATURE	93.865	5 U01 HD76733-04	344,272	136,714
UHD83211-03 EUNICE KENNEDY SHRIVER INTELLECTUAL AND DEVEL	93.865	5 U54 HD83211-03	470,527	478,753
UHD83211-04 EUNICE KENNEDY SHRIVER INTELLECTUAL AND DEVELOPM	93.865	5 U54 HD83211-04	1,258,418	367,826
PASS-THROUGH ALABAMA-UHD061222-12:NATURAL HISTORY OF RETT SYNDROME, M	93.865	5 U54 HD61222-12	(2,294)	
PASS-THROUGH ALABAMA-UHD061222-13:RETT SYNDROME, MECP2 DUPLICATIONS A	93.865	5 U54 HD61222-13	(5,978)	
PASS-THROUGH ALABAMA-UHS061222-13:RETT SYNDROME, MECP2 DUPLICATIONS A	93.865	5 U54 HS61222-13	61,375	
PASS-THROUGH BAYLOR COLLEGE-RHD083181-02:NEUROBEHAVIORAL AND BIOCHEMICAL OUT	93.865	5 R01 HD083181-02	202,233	
PASS-THROUGH BOSTON CHILDREN'S-RHD089521-02:HEALTH CARE PROVIDER RESPONSES TO RECEIVING	93.865	5 R01 HD089521-02	4,191	
PASS-THROUGH DUKE-HHSN275201000003I:HHSN275000047:PROTOCOL DEVELOPMENT V	93.865	HHSN275201000003I	9,345	
PASS-THROUGH DUKE-HHSN27520120000003I:ANTIBIOTIC SAFETY IN INFANTS	93.865	HHSN27520120000031	17,826	
PASS-THROUGH DUKE-RHD081044-02:FUNGAL BIOMARKERS FOR DIAGNOSIS AND	93.865	5 R01 HD81044-02	753	
PASS-THROUGH DUKE-UHD073984-06:STUDY OF OXYTOCIN IN AUTISM TO IMPR	93.865	5 U01 HD73984-06 DUKE	46,208	
PASS-THROUGH IOWA-RHD087864-01:NEWBORN METABOLIC SCREENING FOR PRE	93.865	1 R21 HD87864-01	53,143	
PASS-THROUGH KANSAS-RHD082127-04:BEHAVIORAL INFLEXIBILITY IN IDD OUTCOME(BIDD)	93.865	5 R01 HD082127-04	100,463	400
PASS-THROUGH MARYLAND-RHD067126-05:AZITHROMYCIN TO PREVENT BPD IN UREA	93.865	5 R01 HD67126-05	245	
PASS-THROUGH MARYLAND-RHD076126-06A1:AZITHROMYCIN TO PREVENT BPD IN UR	93.865	2 R01 HD067126-06A1	17,317	
PASS-THROUGH NATIONWIDE-RHD081120-03:EARLY CHILDHOOD CONSTRAINT THERAPY	93.865	1 R01 HD81120-03	21,704	
PASS-THROUGH NATIONWIDE-RHD081120-04:EARLY CHILDHOOD CONSTRAINT THERAPY FOR SENSORY	93.865	5 R01 HD081120-04	4,309	
PASS-THROUGH NORTH CAROLINA-RHD082127-02:BEHAVIORAL INFLEXIBILITY IN IDD OUT	93.865	5 R01 HD82127-02	50,670	600
PASS-THROUGH NORTH CAROLINA-RHD082187-04:BEHAVIROAL INFLEXIBILITY IN IDD OUT	93.865	5 R01 HD082187-04	8,250	400
PASS-THROUGH STANFORD-RHD084679-02:WEBINAR IMPLEMENTATION FOR THE SCIE	93.865	1 R01 HD84679-02	523	
PASS-THROUGH STANFORD-RHD084679-03:THE WISER STUDY	93.865	5 R01 HD084679-03	12,469	
PASS-THROUGH STANFORD-RHD084679-04:THE WISER STUDY	93.865	5 R01 HD084679-04	1,718	
PASS-THROUGH TEXAS-RHD079625-02:ROLE OF MIR15A AND MIR34C IN PGE2 S	93.865	1 R01 HD79625-02	42	
PASS-THROUGH TEXAS-RHD079625-03:ROLE OF MIR15A AND MIR34C IN PGE2 S	93.865	1 R01 HD79625-03	42,315	
PASS-THROUGH VANDERBILT UNIVERSITY-RHD044073-13:COGNITIVE AND NEURAL PROCESSES IN R	93.865	5 R01 HD044073-13	2,471	
PASS-THROUGH VANDERBILT UNIVERSITY-RHD044073-14S1:COGNITIVE AND NEURAL PROCESSES IN	93.865	3 R01 HD044073-14S1	71,172	
PASS-THROUGH VANDERBILT UNIVERSITY-RHD053714-09:PREVENTING & UNDERSTANDING MATHEMAT	93.865	5 R01 HD53714-09	5,238	
PASS-THROUGH VANDERBILT UNIVERSITY-RHD075005-01A1:STRESS,PARENTING AND COGNITIVE FU	93.865	1 R21 HD075005-01A1	(319)	
PASS-THROUGH VANDERBILT UNIVERSITY-RHD089474-02:NEUROBIOLOGY AND TREATMENT OF READI	93.865	5 R01 HD089474-02	2,068	
PASS-THROUGH VANDERBILT UNIVERSITY-RHD84500-01A1 MARKERS OF DISEASE PROGRESSION IN MECP2 DUPLIC	93.865	1 R01 HD84500-01A1	338	
PASS-THROUGH VANDERBILT UNIVERSITY-RHD89474-01:NEUROBIOLOGY AND TREATMENT OF READIN	93.865	1 R01 HD89474-01	402	
PASS-THROUGH WAKE FOREST-RHD084606-01A1:BUILDING SOCIAL NETWORKS TO IMPRO	93.865	1 R01 HD84606	11,925	

Accompanying notes follow this Schedule

Vanderbilt University Medical Center
Schedule of Expenditures of Federal Awards and State Financial Assistance
For the Year Ended June 30, 2018

Federal Grant/Pass-through Grantor/Project Name/Program or Cluster Title	CFDA Number	Federal/Pass-Through Award Number	Federal Expenditures	Passed to Sub-Recipients
Research and Development Cluster				
Department Of Health And Human Services				
PASS-THROUGH WASHINGTON ST. LOUIS-RHD095628-01:SLO3 K CHANNEL A NOVEL TARGET FOR C	93.865	1 R01 HD095628-01	105,785	
PASS-THROUGH WISCONSIN-RHD071089-05:SOCIAL PERCEPTION AND SOCIAL COMMUN	93.865	4 R01 HD71089-05	30,991	9,741
Total Child Health and Human Development Extramural Research			**9,513,151**	**1,850,880**
FAG058395-01 CEREBRAL HEMODYNAMICS, NEURODEGENERATION, & COG	93.866	1 F32 AG058395-01	33,072	
HHSN271201700397P:PROVIDE NOVEL ANALYSES OF SEX DIFFERENCES	93.866	HHSN271201700397P	17,136	
HHSN311201600276P:PROVIDE NOVEL ANALYSES OF SEX DIFFERENCES	93.866	HHSN311201600276P	10,064	
K23AG45966-05 COGNITIVE COMPLAINTS IN AGING ADULTS	93.866	5 K23 AG45966-05	163,371	
KAG058700-01 QUALITY OF CARE FOR DUAL-ELIGIBLE BENEFICIARIES	93.866	1 K01 AG058700-01	24,704	
KAG46373-04:06 RISK FACTORS & PREVENTION TARGETGE	93.866	5 K24 AG46373-06	164,258	
KAG49164-02:04 GENETIC RESILENSE TO THE CLINICAL MANIFESTA	93.866	5 K01 AG49164-04	119,406	
KAG54864-01:03 LONG TERM OUTCOMES OF PHYSICAL ACTIVITY IN OL	93.866	5 K76 AG54864-03	175,350	
RAG34962-06S1:07S1 MAP ADMINISTRATIVE SUPPLEMENT	93.866	3 R01 AG34962-07S1	10,460	
RAG34962-07 MAP YEAR 6	93.866	6 R01 AG34962-07	536,693	
RAG35117-06 THE MIND USA STUDY	93.866	6 R01 AG35117-06	638,603	219,134
RAG41177-06 FOXO PHOSPHORYLATION IN THE CONTROL OF C. ELEGAN	93.866	7 R01 AG41177-06	146,262	
RAG43471-05:06 OPIOD SELECTIONS & THE RISK OF SERI	93.866	5 R01 AG43471-06	326,454	2,231
RAG47992-03 LONG-TERM NICOTINE TREATMENT OF MILD COGNITIVE	93.866	5 R01 AG47992-03	301,874	302,685
RAG47992-04 LONG-TERM NICOTINE TREATMENT OF MILD COGNITIVE I	93.866	5 R01 AG47992-04	2,005,857	1,624,896
RAG47992-05 LONG-TERM NICOTINE TREATMENT OF MILD COGNITIVE	93.866	5 R01 AG47992-05	32,666	
RAG48915-01A1:02 PSYCHOSOCIAL AND OXIDATIVE STRESS MECHANISM	93.866	5 R01 AG48915-02	348,265	
RAG53264-02:04 RADNDOMIZED CONTROLLED TRIAL TO DEPRESCRIBE F	93.866	6 R01 AG53264-02	750,084	73,868
RAG56534-02 WHITE MATTER AND SMALL VESSEL DISEASE	93.866	5 R01 AG56534-02	313,412	
PASS-THROUGH AVATAR-AG059371-02: UNIVERSAL FLU VACCINE BASED ON CONFORMATION	93.866	9 R44 AG59371-02	10,192	
PASS-THROUGH BROWN-RAG027296-09:EFFECTS OF COST-SHARING FOR POST AC	93.866	5 P01 AG027296-09	33,308	
PASS-THROUGH BWH-AG54366-01A1:PRITAVASTATIN TO REDUCE PHYSICAL FUNCTION IMPAI	93.866	1 RO1 AG54366-01A1	831	
PASS-THROUGH CALIFORNIA-UAG024904-11:ALZHEIMER'S DISEASE NEUROIMAGING IN	93.866	2 U19 AG024904-11 REVI	47,107	
PASS-THROUGH HARVARD-RAG054259-02:NETWORK FOR INVESTIGATION OF DELIRI	93.866	1 R24 AG054259-02	22,477	
PASS-THROUGH HARVARD-RAG54259-01:NETWORK FOR INVESTIGATION OF DELIRIU	93.866	1 R24 AG54259-01	10,798	
PASS-THROUGH MARYLAND-RAG037120-04:NON-INVASIVE TREATMENT OF ABDOMINAL	93.866	5 R01 AG37120-04	(27,847)	
PASS-THROUGH MARYLAND-RAG037120-05:NON-INVASIVE TREATMENT OF ABDOMINAL	93.866	5 R01 AG37120-05	159,141	
PASS-THROUGH NBER ECONOMIC-RAG041794-04:ESTIMATING THE RETURNS TO MEDICAL C	93.866	2 R01 AG41794-04	106,797	
PASS-THROUGH NEBRASKA-RAG037120-04:NON-INVASIVE TREATMENT OF ABDOMINAL	93.866	4 R01 AG37120-04	(11,569)	
PASS-THROUGH NEBRASKA-RAG037120-05:NON-INVASIVE TREATMENT OF ABDOMINAL	93.866	4 R01 AG37120-05	2,070	
PASS-THROUGH UNIVERSITY OF VERMONT-RAG050716-01A1:THE NICOTINIC CHOLINERGIC SYSTEM	93.866	1 R01 AG50716-01A1	14,132	
PASS-THROUGH UTAH-RAG055606-01:THE SPRINT-ALZHEIMER'S, SENIORS, AN	93.866	1 R01 AG055606-01	4,768	
PASS-THROUGH VANDERBILT UNIVERSITY-RAG043458-03:DOPAMINERGIC NEUROMODULATION OF DEC	93.866	1 R01 AG43458-03	123,966	
PASS-THROUGH VANDERBILT UNIVERSITY-RAG049332-01A1:DIFFERENCES IN PAIN BETWEEN ALZHE	93.866	1 R21 AG49332-01A1	64,329	
PASS-THROUGH VANDERBILT UNIVERSITY-RAG055184-01:2-HYDROXYBENZYLAMINE FOR THE PREVEN	93.866	1 R44 AG55184-01	187,326	

Accompanying notes follow this Schedule

Vanderbilt University Medical Center
Schedule of Expenditures of Federal Awards and State Financial Assistance
For the Year Ended June 30, 2018

Federal Grant/Pass-through Grantor/Project Name/Program or Cluster Title	CFDA Number	Federal/Pass-Through Award Number	Federal Expenditures	Passed to Sub-Recipients
Research and Development Cluster				
Department Of Health And Human Services				
Total Aging Research			**6,865,816**	**2,222,814**
KEY27464-01 DEVELOPING ALTERNATIVE APPROACHES TO REDUCE RETI	93.867	5 K08 EY27464-02	197,012	
PEY08126-29 CORE GRANT IN VISION RESEARCH	93.867	5 P30 EY08126-29	56,672	50,409
PEY08126-30 CORE GRANT IN VISION RESEARCH	93.867	5 P30 EY08126-30	787,124	400,084
REY07533-28:29 MOLECULAR MECHANISMS OF RETINAL VASCULAR DIS	93.867	5 R01 EY07533-29	355,736	
REY13760-12:13 REGULATION OF RETINAL PROGENITOR CE	93.867	5 R01 EY13760-13	334,629	
REY17427-09A1 NOVEL MECHANISMS OF ENDOGENOUS NEURONAL ENHANC	93.867	2 R01 EY17427-09A1	418,216	
REY20496-06 INTERIEUKIN-6 AND RETINAL GANGLION CE	93.867	2 R01 EY20496-06A1	435,234	2,879
REY20894-06:09 MICROFIBRIL DEFICIENCY IN GLAUCOMA	93.867	5 R01 EY20894-09	586,899	
REY22349-07 NOVEL THERAPY AND MECHANISMS IN GLAUC	93.867	6 R01 EY22349-07	70,492	
REY22618-05:06 METABOLOMIC AND GENETIC INTERACTION	93.867	5 R01 EY22618-06	413,350	68,843
REY23240-04:05 MICROSTRUCTURAL CHARACTERIZATION	93.867	5 R01 EY23240-05	120,506	4,500
REY23397-05:06 IN VIVO MOLECULAR IMAGING OF - CHEMIS	93.867	5 R01 EY23397-06	30,449	3,982
REY23639-04:05 CALCINEURIN/NFAT SIGNALING AXIS IN BIABETIC R	93.867	5 R01 EY23639-05	715,277	800
REY24373-02:05 REGULATION OF EYE MORPHOGENESIS	93.867	5 R01 EY24373-05	416,357	
REY24997-03:05 MECHANISMS OF SYNAPTIC REMODELING AND	93.867	6 R01 EY24997-05	352,498	
REY27746-01:02 INVESTIGATION OF ADAMTS IN GLAUCOMA PATHOGENE	93.867	5 R01 EY27746-02	365,478	2,823
UEY27265-01 NOVEL ACTIVATORS OF REGENERATION IN MULLER GLIA	93.867	1 U01 EY27265-01	209,224	155,591
UEY27265-02 NOVEL ACTIVATORS OF REGENERATION IN MULLER	93.867	5 U01 EY27265-02	488,498	159,573
PASS-THROUGH CHILDRENS PHILADELPHIA-ERY021137-05:POSTNATAL GROWTH AND RETINOPATHY OF	93.867	4 R01 EY21137-05	954	
PASS-THROUGH EMORY-UEY025553-01:INFANT APHAKIA TREATMENT STUDY - CL	93.867	1 UG1 EY25553-01	(215)	
PASS-THROUGH EMORY-UEY025553-03:INFANT APHAKIA TREATMENT STUDY	93.867	5 UG1 EY25553-03	395	
PASS-THROUGH JCHR-UEY011751-03:JAEB CENTER FOR HEALTH RSCH EY11751	93.867	5 U10 EY11751-03	32,325	
PASS-THROUGH JCHR-UEY011751-20:JAEB CENTER FOR HEALTH RESEARCH FOU	93.867	5 U01 EY11751-20	16,660	
PASS-THROUGH JCHR-UEY011751-20:PEDIATRIC EYE DISEASE INVESTIGATOR	93.867	5 U10 EY11751-20	8,142	
PASS-THROUGH NEW YORK-EY026869-01:LONG-TERM SUPPRESSIVE VALACYCLOVIR T	93.867	1 U10 EY26869-01	15,564	
PASS-THROUGH PENNSYLVANIA-UEY023533-01:SCORE2 COMPARATIVE TRIAL (SCT)	93.867	1 U01 EY23533	1,696	
PASS-THROUGH VANDERBILT UNIVERSITY-REY024036-02:QUANTITATIVE IMAGE ANALYSIS TECHNIQ	93.867	5 R21 EY24036-02	(1)	
PASS-THROUGH VANDERBILT UNIVERSITY-REY026176-01:GRAPHENE OPTOELECTRONIC PROBES FOR	93.867	1 R21 EY26176-01	109,062	
PASS-THROUGH VANDERBILT UNIVERSITY-REY027729-01A1:MAPPING BRAIN ACTIVITY WITH HIGH	93.867	1 R01 EY27729	85,492	
PASS-THROUGH VANDERBILT UNIVERSITY-TEY007135-21:TRAINING GRANT IN VISION RESEARCH	93.867	2 T32 EY07135-21	1,000	
Total Vision Research			**6,624,724**	**849,485**
RLM012178-04 ETHICAL APPROACHES TO RESEARCH USE OF CLINICAL	93.879	7 R01 LM012178-04	212,381	
RLM09989-07 TECHNOLOGIES TO ENABLE PRIVACY IN BIO	93.879	6 R01 LM09989-07	39,934	37,809
RLM10207-07:09 AUTOMATED DETECTION OF ANOMALOUS	93.879	5 R01 LM10207-09	255,483	24,066
RLM10685-07:08 FROM GWAS TO PHEWAS: SCANNIN THE EMR	93.879	5 R01 LM10685-08	464,607	27,824
RLM11933-02:04 LEARNING PATTERNS OF COLLABORATION TO OPTIMIZ	93.879	5 R00 LM11933-04	287,043	
PASS-THROUGH PURDUE-RLM011999-01: DETECTION OF POTENTIAL DRUG EFFECT	93.879	1 R15 LM011999-01	7,734	

Accompanying notes follow this Schedule

Vanderbilt University Medical Center
Schedule of Expenditures of Federal Awards and State Financial Assistance
For the Year Ended June 30, 2018

Federal Grant/Pass-through Grantor/Project Name/Program or Cluster Title	CFDA Number	Federal/Pass-Through Award Number	Federal Expenditures	Passed to Sub-Recipients
Research and Development Cluster				
Department Of Health And Human Services				
PASS-THROUGH TEXAS HEALTH SCIENCE HOUSTON-RLM12806-01:PREDICTING PHENOTYPE BY USING TRANSC	93.879	1 R01 LM012806-01	19,374	
PASS-THROUGH VANDERBILT UNIVERSITY-TLM0007450-16:VANDERBILT BIOMEDICAL INFORMATICS T	93.879	2 T15 LM0007450-16	13,974	
PASS-THROUGH VANDERBILT UNIVERSITY-TLM0007450-16S1:VANDERBILT BIOMEDICAL INFORMATIC	93.879	3 T15 LM0007450-16S1	47,198	
Total Medical Library Assistance			**1,347,728**	**89,699**
DTW09337-07 VANDERBILT-EMORY-CORNELL-DUKE CONSORTIUM FOR GLO	93.989	2 D43 TW09337-07	695,930	367,926
DTW09744-03 UNZA-VANDERBILT PARTNERSHIP FOR HIV-NUTRITIO	93.989	5 D43 TW09744-03	1,840	
DTW09744-04 UNZA-VANDERBILT PARTNERSHIP FOR HIV-NUTRITION R	93.989	5 D43 TW09744-04	476,559	172,234
DTW09744-05 UNZA-VANDERBILT PARTNERSHIP FOR HIV-NUTRITION	93.989	5 D43 TW09744-05	13,450	
DTW09745-03 UEM PARTNERSHIP FOR RESERACH IN IMPLEMENTATIO	93.989	5 D43 TW09745-03	9,103	9,603
DTW09745-04 UEM PARTNERSHIP FOR RESEARCH IN IMPLEMENTATION S	93.989	5 D43 TW09745-04	308,833	57,569
DTW09745-05 UEM PARTNERSHIP FOR RESEARCH IN IMPLEMENTATION	93.989	5 D43 TW09745-05	16,932	
DTW10411-01 RESEARCH CAPACITY BUILDING IN POST EBOLA COUNTRI	93.989	1 D71 TW10411-01	20,372	8,263
RTW09337-06 VANDERBILT-EMORY-CORNELL-DUKE CONSORTIUM FOR GLO	93.989	5 R25 TW09337-06	278,173	269,976
RTW09722-05 VU-MOZAMBIQUE COLLABORATIVE RESEARCH ETHICS EDUC	93.989	5 R25 TW09722-05	124,554	56,220
RTW09722-06 VU-MOZAMBIQUE COLLABORATIVE RESEARCH ETHICS ED	93.989	5 R25 TW09722-06	95,135	20,175
RTW10899-01 BRIDGING THE CHILDHOOD EPILEPSY TREATMENT GAP	93.989	1 R21 TW10899-01	109,361	24,756
PASS-THROUGH CAPE TOWN-DTW010559-01:HIV ASSOCIATED TUBERCULOSIS TRAININ	93.989	1 D43 TW010559-01	8,420	
PASS-THROUGH PURDUE-RTW010620-01:COMPLETE BLOOD COUNT-COMPARABLE PHO	93.989	1 R21 TW010620-01	49,416	
PASS-THROUGH UNIVERSITY OF ZAMBIA-RTW010471-01:ASSESSMENT OF CAPACITY TO PREVENT A	93.989	1 R21 TW010471-01	15,827	
PASS-THROUGH VANDERBILT UNIVERSITY-DTW009348-05:VU:ZAMBIA NETWORK FOR INNOVATION IN	93.989	4 D43 TW009348-05	1,460	
PASS-THROUGH VANDERBILT UNIVERSITY-RTW010635-01:MOBILE HEALTH AND TREAT (MHAT) FOR	93.989	1 R21 TW010635-01	3,979	
Total International Research and Research Training			**2,229,344**	**986,722**
Total Department Of Health And Human Services			**311,347,554**	**63,069,520**
Department Of Veterans Affairs				
PASS-THROUGH NAVREF-JPA	64.054	VA-MTRI	14,491	
Total Research and Development			**14,491**	
Total Department Of Veterans Affairs			**14,491**	
Environmental Protection Agency				
PASS-THROUGH VANDERBILT UNIVERSITY-83573601:VU:RESOURCE FOR ORANOTYPIC MODELS FOR P	66.509	83573601	163,148	
PASS-THROUGH VANDERBILT UNIVERSITY-83573601:VU:RESOURCE FOR ORGANOTYPIC MODELS FOR PREDICTIVE	66.509	83573601	7,737	
Total Science To Achieve Results (STAR) Research Program			**170,885**	
Total Environmental Protection Agency			**170,885**	
National Aeronautics And Space Administration				
PASS-THROUGH WYLE-NNJ15HK11B:FAST:AUTONOMOUS DIAGNOSTIC IMAGING PERFORMED BY	43.001	NNJ15HK11B	1,080	
Total Science			**1,080**	
Total National Aeronautics And Space Administration			**1,080**	
National Endowment For The Arts				
1884433-38-C-18 SOCIAL-EMOTIONAL DEVELOPMENT AND COMMUNITY	45.024	1884433-38-C-18	6,633	

Accompanying notes follow this Schedule

Vanderbilt University Medical Center
Schedule of Expenditures of Federal Awards and State Financial Assistance
For the Year Ended June 30, 2018

Federal Grant/Pass-through Grantor/Project Name/Program or Cluster Title	CFDA Number	Federal/Pass-Through Award Number	Federal Expenditures	Passed to Sub-Recipients
Research and Development Cluster				
National Endowment For The Arts				
Total Promotion of the Arts_Grants to Organizations and Individuals			**6,633**	
Total National Endowment For The Arts			**6,633**	
National Science Foundation				
PASS-THROUGH VANDERBILT UNIVERSITY-1537659:VU:CREM:CONTINUUM ROBOTS WITH EQUILBRIUM MODULATION	47.041	1537659	25,422	
PASS-THROUGH VANDERBILT UNIVERSITY-CBET-1264462:INDIVIDUALIZED ADAPTIVE ROBOT-MEDIATED INTERVEN	47.041	CBET-1264462	493	
PASS-THROUGH VANDERBILT UNIVERSITY-CBET-160520:LEVERAGING TOE DYNAMICS TO IMPROVE PROSTHETIC FE	47.041	CBET-1605200	6,359	
PASS-THROUGH VANDERBILT UNIVERSITY-CBET-1705714: BIO-INSPIRED ANKLE-KNEE COUPLING TO ENHANCE	47.041	CBET-1705714	4,771	
PASS-THROUGH VANDERBILT UNIVERSITY-IIP1542996:EXTERNAL STENTS TO PREVENT VEIN FAILU	47.041	IIP1542996	(8,744)	
Total Engineering Grants			**28,301**	
NSF 1416268 PROPOSAL INTERNATIONAL COLLABORATION IN CHE	47.049	NSF CHE-1416268	89,812	
Total Mathematical and Physical Sciences			**89,812**	
CNS-1526014 TWC: SMALL: ANALYSIS AND TOOLS FOR AUD	47.070	NSF CNS-1526014	215,917	280
CNS-1536871 MANAGING INFORMATION RISK AND BREACH	47.070	NSF CNS-1536871	75,866	2,424
CNS-1757644 REU SITE: PROGRAM FOR ACCESS TO TRAINING IN HEALT	47.070	NSF CNS-1757644	101,951	
NSF IIS-1418504 SCH:INT:COLLABORATIVE RESEARCH:	47.070	NSF IIS-1418504	90,356	140
PASS-THROUGH JOHNS HOPKINS-1329737:TWC:FRONTIER: COLLABORATIVE: ENABLING TRUSTWORTHY	47.070	1329737	35,035	
PASS-THROUGH VANDERBILT UNIVERSITY-1327566:NRI:COLLABORATIVE RESEARCH:UROLOGY SUBCENTER	47.070	1327566	9,819	
Total Computer and Information Science and Engineering			**528,945**	**2,844**
NSF IOS-1557634 COLLABORATIVE RESEARCH: HOST AND PATHOGEN IN	47.074	NSF IOS-1557634	191,416	
PASS-THROUGH PITTSBURGH-1649443:PITTSBURGH:CAREER: AN INTEGRATIVE APPROACH TO PR	47.074	1649443	12,847	
PASS-THROUGH VANDERBILT UNIVERSITY-NSF IOS-1121758 IMMUNE MECHANISMS OF DISEASE RESISTANCE I	47.074	NSF IOS-1121758	(2,940)	
Total Biological Sciences			**201,324**	
PASS-THROUGH CRDF-OISE-9531011:IDENTIFYING INNOVATIVE BACTERIAL AND HOST MEDIA	47.079	OISE-9531011	25,950	
PASS-THROUGH CRDF-OISE-9531011:RHINOVIRUS GENOTYPING IN AMMAN,JORDAN	47.079	OISE-9531011	2,203	
Total Office of International Science and Engineering			**28,153**	
Total National Science Foundation			**876,534**	**2,844**
Total Research and Development Cluster			**327,509,846**	**65,701,350**
Medicaid Cluster				
Department Of Health And Human Services				
PASS-THROUGH MICHIGAN-M15ADM-17:IMPACT OF HEALTHY MICHIGAN PLAN ON UNCOMPENSATED	93.778	05 U05 M15ADM-17	29,746	
PASS-THROUGH TN CHILDRENS SERVICES-53068:CENTER OF EXCELLENCE QUALITY AND SAFETY PROJECTS	93.778	53068:ST TN	2,804,960	31,303
PASS-THROUGH TN FINANCE ADMINISTRATION-39861:BEHAVIOR HEALTH SERVICES COE CONTRACT	93.778	39861:ST TN	17,176	14,093
PASS-THROUGH TN FINANCE ADMINISTRATION-39862:QUALITY AND SAFETY PROJECTS (CANS)	93.778	39862:ST TN	18,523	13,932
PASS-THROUGH TN FINANCE ADMINISTRATION-52379:BEHAVIORAL HEALTH SCIENCES COE CONTRACT	93.778	52379:ST TN	1,049,951	16,076
PASS-THROUGH TN HEALTH-42680:TIPQC-TN INITIATIVE PERINATAL QUALITY CARE	93.778	42680:ST TN	8,800	
PASS-THROUGH TN HEALTH-54867:TENNESSEE INITIATIVE FOR PERINATAL QUALITY CARE	93.778	54867:ST TN	351,681	39,277
PASS-THROUGH TN TENNCARE-46264:CLINICAL CENTER - PERINATAL NEWBORN AND OB/GYN	93.778	46264:ST TN	45,050	
PASS-THROUGH TN TENNCARE-46264:CLINICAL CENTER - PERINATAL NEWBORN AND OBGYN	93.778	46264:ST TN	1,137,643	

Accompanying notes follow this Schedule

Vanderbilt University Medical Center
Schedule of Expenditures of Federal Awards and State Financial Assistance
For the Year Ended June 30, 2018

Federal Grant/Pass-through Grantor/Project Name/Program or Cluster Title	CFDA Number	Federal/Pass-Through Award Number	Federal Expenditures	Passed to Sub-Recipients
Medicaid Cluster				
Department Of Health And Human Services				
Total Medical Assistance Program			**5,463,530**	**114,681**
Total Department Of Health And Human Services			**5,463,530**	**114,681**
Total Medicaid Cluster			**5,463,530**	**114,681**
Special Education Cluster (IDEA)				
Department Of Education				
PASS-THROUGH TN EDUCATION-45026:PROVIDE ACCESS THE VISUAL ENVIRONMENT PAVE 2015-2020	84.027	45026:ST TN	317,311	
PASS-THROUGH TN EDUCATION-45237:TRIAD:TREATMENT AND RESEARCH INSTITUTE FOR AUTISM SPEC	84.027	45237:ST TN	2,005,977	25,790
PASS-THROUGH VANDERBILT UNIVERSITY-33136-00718:VU:TENNESSEE BLUEPRINT	84.027	33136-00718	2,700	
PASS-THROUGH VANDERBILT UNIVERSITY-H027A140052-14A:VU:POSITIVE BEHAVIORAL INTERVENTIONS AND SUP	84.027	HO27A140052-14A	55,384	
PASS-THROUGH VANDERBILT UNIVERSITY-H027A50052:SUPPORTING STRONG TRANSITIONS:PROFESSIONAL DEVELOPM	84.027	H027A50052	6,949	
Total Special Education_Grants to States			**2,388,321**	**25,790**
PASS-THROUGH TN EDUCATION-49454:TRIAD FAMILY EDUCATION AND CONSULTATION SERV-WEST TN	84.173	49454:ST TN	190,108	
Total Special Education_Preschool Grants			**190,108**	
Total Department Of Education			**2,578,429**	**25,790**
Total Special Education Cluster (IDEA)			**2,578,429**	**25,790**
Other Awards				
Agency For International Development				
PASS-THROUGH CHEMONICS-720-656-18-C-00001:INTEGRATED MALARIA PROGRAM(IMAP)MOZAMBIQU	98.001	720-656-18-C-00001	13,901	
PASS-THROUGH FAMILY HEALTH INTERNATIONAL-AID-OAA-LA-13-00001:MOZAMBIQUE ASPIRES/SCIP EVAL	98.001	AID-OAA-LA-13-00001	6,606	
Total USAID Foreign Assistance for Programs Overseas			**20,506**	
Total Agency For International Development			**20,506**	
Department Of Education				
PASS-THROUGH TN HUMAN SERVICES-49497:EVALUATION WORK ADJUSTMENT AND OR EMPLOYMENT RELATED S	84.126	49497:ST TN	57,471	
Total Rehabilitation Services_Vocational Rehabilitation Grants to States			**57,471**	
PASS-THROUGH TN EDUCATION-49954:TRIAD FAMILTY EDUCATION AND CONSULTATION SERV -WEST TN	84.181	49954:ST TN	358	
PASS-THROUGH TN EDUCATION-49965:TRIAD:TEIS DIRECT FAMILY EDUCATION SERVICE	84.181	49965:ST TN	558,819	
PASS-THROUGH TN EDUCATION-49965:TRIAD:TEIS DIRECT FAMILY EDUCATION SERVICES MIDDLE TN	84.181	49965:ST TN	(3,530)	
PASS-THROUGH TN EDUCATION-54078:TRIAD FAMILY EDUCATION AND CONSULTATION SE	84.181	54078:ST TN	339,229	
Total Special Education-Grants for Infants and Families			**894,876**	
H325K160370 PREPARATION OF AUDIOLOGISTS, SPEECH-LAN	84.325	H 325 K160370	126,161	36,624
H325K160371 PROJECT GIFT-D-GRADUATE INSTRUCTION FOR	84.325	H 325 K160371	320,343	36,268
PASS-THROUGH VANDERBILT UNIVERSITY-H325D140087-17:TRILL: TRAINING EXEMPLARY PREDOCT	84.325	H32 5D14087-17	46,738	
Total Special Education - Personnel Development to Improve Services and Results for Children with Disabilities			**493,242**	**72,892**
H326T150002 TENNESSEE DEAF-BLIND PROJECT (TNDB)	84.326	H 326 T150002	223,187	
Total Special Education_Technical Assistance and Dissemination to Improve Services and Results for Children with Disabilities			**223,187**	
Total Department Of Education			**1,668,776**	**72,892**
Department Of Energy				
PASS-THROUGH SANDIA-DE-NA0003525:RADIOLOGICAL SECURITY PROGRAM FOR VUMC	81.123	DE-NA0003525	21,675	

Accompanying notes follow this Schedule

Vanderbilt University Medical Center
Schedule of Expenditures of Federal Awards and State Financial Assistance
For the Year Ended June 30, 2018

Federal Grant/Pass-through Grantor/Project Name/Program or Cluster Title	CFDA Number	Federal/Pass-Through Award Number	Federal Expenditures	Passed to Sub-Recipients
Other Awards				
Department Of Energy				
Total National Nuclear Security Administration (NNSA) Minority Serving Institutions (MSI) Program			**21,675**	
Total Department Of Energy			**21,675**	
Department Of Health And Human Services				
NU2GGH01943-01 SUPPORTING SUSTAINABLE IMPLEMENTATION OF HIV	93.067	1 NU2 GGH01943-01	2,454,093	
NU2GGH01943-02 SUPPORTING SUSTAINABLE IMPLEMENTATION OF HI	93.067	5 NU2 GGH01943-02-00	16,697,320	
NU2GGH02071-01 AVANTE ZAMB ZIA: TECHNICAL ASSISTANCE T	93.067	6 NU2 GGH02071-01-02	12,059,709	
PASS-THROUGH FGHIN-UGH000922-04:ENGAGING INDIGENOUS ORGANIZATIONS T	93.067	5 U2G GH000922-04	11,703	
Total Global AIDS			**31,222,825**	
NU53DD000001-02-02 ENHANCING PUBLIC HEALTH SURVEILLANCE OF	93.073	6 NU53 DD00001-02-02	130,846	
NU53DD000001-03-00 ENHANCING PUBLIC HEALTH SURVEILLANCE	93.073	5 NU53 DD000001-03-00	249,601	3,088
Total Birth Defects and Developmental Disabilities - Prevention and Surveillance			**380,447**	**3,088**
PASS-THROUGH TN HEALTH-54788:POISON CONTROL CHEMICAL AND ALL HAZARDS INCIDENT TRACK	93.074	54788:ST TN	249,932	
Total Hospital Preparedness Program (HPP) and Public Health Emergency Preparedness (PHEP) Aligned Cooperative Agreements			**249,932**	
PASS-THROUGH TENNESSEE-8500038035:TRAINING AND IMPLEMENTATION OF TOP IN TENNESSEE	93.092	8500038035:ST TN	10,563	
Total Affordable Care Act (ACA) Personal Responsibility Education Program			**10,563**	
TMC30767-01-00 RURAL LEADERSHIP ED FOR NDRP FAMILIES BASE	93.110	7 T73 MC30767-01-00	57,812	55,832
TMC30767-02-00 VANDERBILT CONSORTIUM LEND	93.110	5 T73 MC30767-02-00	643,782	49,176
PASS-THROUGH MASSACHUSETTS-UMC011054-08:(AIR-P) AUTISM INTERVENTION RESEARC	93.110	6 UA3 MC11054-08	454	
PASS-THROUGH MASSACHUSETTS-UMC011054-09:AIR-P ATISM INTERVENTION RESEARCH N	93.110	6 UA3 MC11054-09	20,251	
Total Maternal and Child Health Federal Consolidated Programs			**722,298**	**105,008**
HHA30750-01 RYAN WHITE PART D WICY COMPETING CONTINU	93.153	6 H12 HA30750-01	43,081	
HHA30750-02 RYAN WHITE PART D WICY COMPETING CONTINUATION	93.153	2 H12 HA30750-02	419,984	
Total Coordinated Services and Access to Research for Women, Infants, Children, and Youth			**463,065**	
PASS-THROUGH TENNESSEE-TI-15-008:SAMSHA NCTSI CATEGORY III GRANT	93.243	TI-15-008	4,860	
Total Substance Abuse and Mental Health Services_Projects of Regional and National Significance			**4,860**	
H4BHS15599A0 POISON CONTROL STABILIZATION & EN	93.253	5 H4B HS15599-05-00	49,512	
H4BHS30752 POISON CONTROL STABILIZATION & ENHANCEMENT PROG	93.253	5 H4B HS30752-02-00	276,218	
Total Poison Center Support and Enhancement Grant Program			**325,730**	
PASS-THROUGH TN MENTAL HEALTH DEVELOPMENTAL-31614-80217:PATHFINDER: DISABILITY AND REFERRAL - FED	93.630	31614-80217:ST TN	(8,468)	
PASS-THROUGH TN MENTAL HEALTH DEVELOPMENTAL-54634:PATHFINDER:COMMUNITY SUPPORTS THROUGH INFORMATION AND	93.630	54634:ST TN	168,171	
Total Developmental Disabilities Basic Support and Advocacy Grants			**159,704**	
PASS-THROUGH VANDERBILT UNIVERSITY-90DN0294-04:TENNESSEEWORKS PARTNERSHIP:CHANGING THE EMPLOYME	93.631	90DN0294-04	(190)	
PASS-THROUGH VANDERBILT UNIVERSITY-90DN0294-05:TENNESSEEWORKS PARTNERSHIP: CHANGING THE EMPLOYM	93.631	90DN0294-05	18,694	
Total Developmental Disabilities Projects of National Significance			**18,504**	
90DD00825-01-00 UNIVERSITY CENTERS FOR EXCELLENCE IN DEVELOP	93.632	90 DD00825-01-00	108,033	150,738
90DD00825-02-01 VANDERBILT KENNEDY CENTER FOR EXCELLENCE IN	93.632	90 DD00825-02-01	532,522	110,700
PASS-THROUGH VANDERBILT UNIVERSITY-90DD0666-05 VANDERBILT KENNEDY CENTER FOR EXCELLENCE IN	93.632	90 DD0666-05-00	(20)	
Total University Centers for Excellence in Developmental Disabilities Education, Research, and Service			**640,534**	**261,439**

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Vanderbilt University Medical Center
Schedule of Expenditures of Federal Awards and State Financial Assistance
For the Year Ended June 30, 2018

Federal Grant/Pass-through Grantor/Project Name/Program or Cluster Title	CFDA Number	Federal/Pass-Through Award Number	Federal Expenditures	Passed to Sub-Recipients
Other Awards				
Department Of Health And Human Services				
PASS-THROUGH TN CHILDRENS SERVICES-42852:CPS ASSESSMENT TRACK TRAINING ACADEMY	93.658	42852:ST TN	398,003	24,763
PASS-THROUGH TN CHILDRENS SERVICES-42852:CPS ASSESSMENT TRACKING ACADEMY	93.658	42852:ST TN	14,118	13,967
Total Foster Care_Title IV-E			**412,121**	**38,730**
PASS-THROUGH TN HEALTH-50808:VANDERBILT DIABETES PREVENTION PROGRAM PILOT	93.757	50808:ST TN	1	
PASS-THROUGH TN HEALTH-54724:VANDERBILT DIABETES PREVENTION PROGRAM PILOT	93.757	54724:ST TN	20,888	
Total State and Local Public Health Actions to Prevent Obesity, Diabetes, Heart Disease and Stroke (PPHF)			**20,889**	
PASS-THROUGH TN HEALTH-51223:POISON CONTROL SERVICES-EMERGENCY PREPAREDNESS PROGRAM	93.758	51223:ST TN	377,951	
Total Preventive Health and Health Services Block Grant funded solely with Prevention and Public Health Funds (PPHF)			**377,951**	
PASS-THROUGH TN HEALTH-52637:DESIGNATED COORDINATION CENTER FOR EMS RADIO COMMUNICA	93.889	52637:ST TN	30,000	
Total National Bioterrorism Hospital Preparedness Program			**30,000**	
PASS-THROUGH NASHVILLE-RYAN WHITE PART A PROGRAM OUTPATIENT	93.914	METRO HEALTH SERVICES	377,805	
PASS-THROUGH NASHVILLE-RYAN WHITE PART A PROGRAM OUTPATIENT AMBULATORY CARE	93.914	METRO HEALTH SERVICES	61	
PASS-THROUGH UNITED WAY-RYAN WHITE PART A MEDICAL CASE MANAGEMENT (MCM)	93.914	METRO HEALTH SERVICES	(24)	
Total HIV Emergency Relief Project Grants			**377,841**	
PASS-THROUGH TN HEALTH-53111:RYAN WHITE PART B:HIV-AIDS CENTER OF EXCELLENCE PROGRA	93.917	53111:ST TN	662,092	
PASS-THROUGH TN HEALTH-56026:RYAN WHITE PART B - SUPPORT SERVICES	93.917	56026:ST TN	825	
PASS-THROUGH TN HEALTH-56562:TRANSIENT ELASTOGRAPHY/FIBROSCAN PROJECT	93.917	56562:ST TN	2,384	
PASS-THROUGH TN HEALTH-58112:RYAN WHITE PART B:HIV-AIDS CENTER OF EXCELLENCE	93.917	58112:ST TN	224,777	
Total HIV Care Formula Grants			**890,078**	
HHA30761-01 HIV EARLY INTERVENTION SERVICES -EIS-	93.918	7 H76 HA30761-01	49,802	
HHA30761-02 HIV EARLY INTERVENTION SERVICES (EIS) PROGRAM	93.918	6 H76 HA30761-02	616,761	
HHA30761-03 RYAN WHITE HIV/AIDS PROGRAM PART C HIV EARLY IN	93.918	6 H76 HA30761-03	92,496	
Total Grants to Provide Outpatient Early Intervention Services with Respect to HIV Disease			**759,059**	
PASS-THROUGH TN HEALTH-54451: DATA LINKAGE INTERGRATION SERVICES	93.944	54451:ST TN	18,625	
Total Human Immunodeficiency Virus (HIV)/Acquired Immunodeficiency Virus Syndrome (AIDS) Surveillance			**18,625**	
PASS-THROUGH TN HEALTH-41447:GENETIC SCREENING TESTING COUNSELING EDUCATION AND FOL	93.994	41447:ST TN	83	
PASS-THROUGH TN HEALTH-49293:CHILDREN AND YOUTH WITH SPECIAL HEALTH CARE NEEDS-FED	93.994	49293:ST TN	(497)	
PASS-THROUGH TN HEALTH-54083:GENETIC SCREENING TESTING COUNSELING-FED FUNDS	93.994	54083:ST TN	236,997	
PASS-THROUGH TN MENTAL HEALTH DEVELOPMENTAL-49293:CHILDREN AND YOUTH WITH SPECIAL HEALTH CARE NEEDS-FED	93.994	49293:ST TN	33,795	
Total Maternal and Child Health Services Block Grant to the States			**270,378**	
Total Department Of Health And Human Services			**37,355,404**	**408,265**
Total Other Awards			**39,066,361**	**481,157**

Accompanying notes follow this Schedule

Vanderbilt University Medical Center
Schedule of Expenditures of Federal Awards and State Financial Assistance
For the Year Ended June 30, 2018

Federal Grant/Pass-through Grantor/Project Name/Program or Cluster Title	CFDA Number	Federal/Pass-Through Award Number	Federal Expenditures	Passed to Sub-Recipients
Total Expenditures of Federal Awards			**374,618,166**	**66,322,977**
State Financial Assistance				
31614-80217:PATHFINDER: DISABILITY AND REFERRAL - STATE		31614-80217 ST TN	(849)	
35910-01975 COUNTER RESPONSE TRAINING TO JUVENILE		35910-01975	(3,118)	(2,417)
35910-02476:COUNTER RESPONSE TRAINING TO JUVENILE JUSTICE		35910-02476 ST TN	44,503	
42139:COMPREHENSIVE CARE CLINIC FOR STATE APPROVED CLIENTS		42139:ST TN	118,887	
49293:CHILDREN AND YOUTH WITH SPECIAL HEALTH CARE NEEDS TN		49293:ST TN	25,563	
49497:EVALUATION WORK ADJUSTMENT AND OR EMPLOYMENT RELATED S		49497:ST TN	15,254	
51223:POISON CONTROL SERVICES-EMERGENCY PREPAREDNESS PROGRAM		51223:ST TN	374,782	
51777:MITIGATING ACES IN PEDIATRIC PRIMARY CARE		51777:ST TN	19,592	1,007
53384:COMMUNITY FORENSIC - JUV CT EVALUATIONS		53384:ST TN CFJCE	117,553	
53384:DOC (BOP) RISK ASSESSMENTS		53384:ST TN BOP	50,524	
54083:ST TN:GENETIC SCREENING,TESTING, COUNSELING-STATE FUND		54083:ST TN	751,898	
54540:CLOVER BOTTOM NEUROLOGY SPASTICITY CLINICS		54540:ST TN	12,264	
54854:MITIGATING ACES IN PEDIATRIC PRIMARY CARE		54854:ST TN	62,534	2,305
54955:COMMUNITY SUPPORTS THROUGH INFORMATION AND REFERRAL		54955:ST TN	39,999	
55077:TENNESSEE INTEGRATED COURT SCREENING AND REFERRAL PROJ		55077:ST TN	56,854	
56562:RYAN WHITE PART B TRANSIENT ELASTROGRAPHY/FIBROSCAN PR		56562:ST TN	145,321	
INTERNAL CAR SEAT PROGRAM		STATE OF TENNESSEE	9,307	
Total State Financial Assistance			**1,840,870**	**895**
Total Expenditures of Federal Awards and State Financial Assistance			**$376,459,036**	**$66,323,872**

Accompanying notes follow this Schedule

Vanderbilt University Medical Center
Notes to the Schedule of Expenditures of Federal Awards and State Financial Assistance
For the Year Ended June 30, 2018

1. Basis of Presentation

The accompanying Schedule of Expenditures of Federal Awards and State Financial Assistance (the "Schedule") includes the activity of Vanderbilt University Medical Center ("VUMC") under programs of the federal government and of the state of Tennessee for the year ended June 30, 2018. The information in the Schedule is presented in accordance with the 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") and State of Tennessee Audit Manual.

For purposes of the Schedule, federal and state awards include all grants, contracts, and similar agreements entered into directly between VUMC and agencies and departments of the federal government and all sub-awards to VUMC by organizations pursuant to federal grants, contracts and similar agreements, and agencies and departments of the Tennessee state government, including federal awards passed through by the state.

2. Summary of Significant Accounting Policies for the Schedule

For purposes of the Schedule, expenditures for federal and state programs are recognized on the accrual basis, which is consistent with generally accepted accounting principles.

Expenditures for federal and state awards of VUMC are determined using the cost accounting principles and procedures set forth in the Uniform Guidance and State of Tennessee Audit Manual. Under these cost principles, certain expenditures are not allowable or are limited as to reimbursement.

Negative amounts represent adjustments or credits made in the normal course of business to amounts reported as expenditures in prior years.

3. Facilities and Administrative Costs

VUMC has elected not to use the 10% de minimis indirect cost rate allowed under the Uniform Guidance.

Expenditures for certain federal and state awards of VUMC include facilities and administrative costs (indirect costs). Facilities and administrative costs allocated to such awards were based on predetermined fixed rates negotiated with VUMC's cognizant federal agency, the U.S. Department of Health and Human Services.

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Report of Independent Auditors on Internal Control Over Financial Reporting and on Compliance and Other Matters Based on an Audit of Financial Statements Performed in Accordance with *Government Auditing Standards*

Senior Management and the Board of Directors
Vanderbilt University Medical Center

We have audited, in accordance with auditing standards generally accepted in the United States and the standards applicable to financial audits contained in *Government Auditing Standards,* issued by the Comptroller General of the United States, the financial statements of Vanderbilt University Medical Center, which comprise the consolidated balance sheet as of June 30, 2018, and the related consolidated statements of operations, changes in net assets 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 26, 2018.

Internal Control Over Financial Reporting

In planning and performing our audit of the consolidated financial statements, we considered Vanderbilt University Medical Center'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 Vanderbilt University Medical Center's internal control. Accordingly, we do not express an opinion on the effectiveness of Vanderbilt University Medical Center's internal control.

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

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

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Compliance and Other Matters

As part of obtaining reasonable assurance about whether Vanderbilt University Medical Center's consolidated financial statements are free of 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 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 result of that testing, and not to provide an opinion on the effectiveness of the entity's internal control or on compliance. This report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering the entity's internal control and compliance. Accordingly, this communication is not suitable for any other purpose.

Ernst & Young LLP

October 26, 2018

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Report of Independent Auditors on Compliance for the Major Federal Program and Report on Internal Control Over Compliance Required by the Uniform Guidance

Senior Management and the Board of Directors
Vanderbilt University Medical Center

Report on Compliance for the Major Federal Program

We have audited Vanderbilt University Medical Center's compliance with the types of compliance requirements described in the U.S. Office of Management and Budget ("OMB") *Compliance Supplement* that could have a direct and material effect on Vanderbilt University Medical Center's major federal program for the year ended June 30, 2018. Vanderbilt University Medical Center's major federal program is identified in the summary of auditor's results section of the accompanying schedule of findings and questioned costs.

Management's Responsibility

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

Auditor's Responsibility

Our responsibility is to express an opinion on compliance for Vanderbilt University Medical Center's major federal program 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; 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 Vanderbilt University Medical Center'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 Vanderbilt University Medical Center's compliance.

Opinion on the Major Federal Program

In our opinion, Vanderbilt University Medical Center complied, in all material respects, with the types of compliance requirements referred to above that could have a direct and material effect on its major federal program for the year ended June 30, 2018.

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Report on Internal Control Over Compliance

Management of Vanderbilt University Medical Center 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 Vanderbilt University Medical Center's internal control over compliance with the types of requirements that could have a direct and material effect on the major federal program to determine the auditing procedures that are appropriate in the circumstances for the purpose of expressing an opinion on compliance for the major federal program and to test and report on internal control over compliance in accordance with the Uniform Guidance, but not for the purpose of expressing an opinion on the effectiveness of internal control over compliance. Accordingly, we do not express an opinion on the effectiveness of Vanderbilt University Medical Center'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 a combination of deficiencies, in internal control over compliance, such that there is a reasonable possibility that material noncompliance with a type of compliance requirement of a federal program will not be prevented, or detected and corrected, on a timely basis. A *significant deficiency in internal control over compliance* is a deficiency, or a combination of deficiencies, in internal control over compliance with a type of compliance requirement of a federal program that is less severe than a material weakness in internal control over compliance, yet important enough to merit attention by those charged with governance.

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

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

Ernst & Young LLP

October 26, 2018

Vanderbilt University Medical Center
Schedule of Findings and Questioned Costs
For the Year Ended June 30, 2018

Section I—Summary of Auditor's Results

Financial Statements

Type of report the auditor issued on whether the financial statements audited were prepared in accordance with GAAP:	Unmodified	
Internal control over financial reporting:		
Material weakness(es) identified?	____ **yes**	**X** **no**
Significant deficiency(ies) identified?	____ **yes**	**X** **none reported**
Noncompliance material to financial statements noted?	____ **yes**	**X** **no**

Federal Awards

Internal control over major federal programs:		
Material weakness(es) identified?	____ **yes**	**X** **no**
Significant deficiency(ies) identified?	____ **yes**	**X** **none reported**
Type of auditor's report issued on compliance for major federal programs:	Unmodified	
Any audit findings disclosed that are required to be reported in accordance with 2 CFR 200.516(a)?	____ **yes**	**X** **no**

Identification of major federal programs:

CFDA number(s)	**Name of federal program or cluster**
Various	Research and Development Cluster

Dollar threshold used to distinguish between Type A and Type B programs:	$3,000,000
Auditee qualified as low-risk auditee?	____ **yes** **X** **no**

VUMC does not meet the criteria in CFR 200.520 to be a low risk auditee as this is the second year that a single audit of VUMC has been performed. VUMC was a newly established legal entity in the prior year.

Vanderbilt University Medical Center
Schedule of Findings and Questioned Costs
For the Year Ended June 30, 2018

Section II—Financial Statement Findings

None noted.

Section III—Federal Award Findings and Questioned Costs

None noted.

Vanderbilt University Medical Center

Summary Schedule of Prior Audit Findings

Federal Award Findings and Questioned Costs – Fourteen Months Ended June 30, 2017

Finding 2017-01 – Fixed Asset Identification

Finding: Four (4) of the forty (40) assets that the auditor selected to be observed were not properly tagged in accordance with VUMC's internal controls over the Equipment and Real Property Management Compliance Requirement.

Current Year Status: During the prior year, Management agreed that there were limited instances of missing fixed asset tags on equipment acquired under a Federal award. Management acknowledged that missing tags may lead to instances of noncompliance in the nature of use, condition, safeguarding, or disposition of assets acquired under Federal awards, as those assets may not be identifiable as being acquired with Federal funding.

To strengthen this control, during Fiscal 2018, VUMC conducted a physical inventory of materially all fixed assets acquired under a Federal award, replacing any identified missing fixed asset tags. In addition, VUMC documented communication protocols between fixed asset physical inventory dates to ensure that, in the future, any missing or destroyed tags are replaced.

Financial Statement Findings – Year Ended June 30, 2017

None identified.

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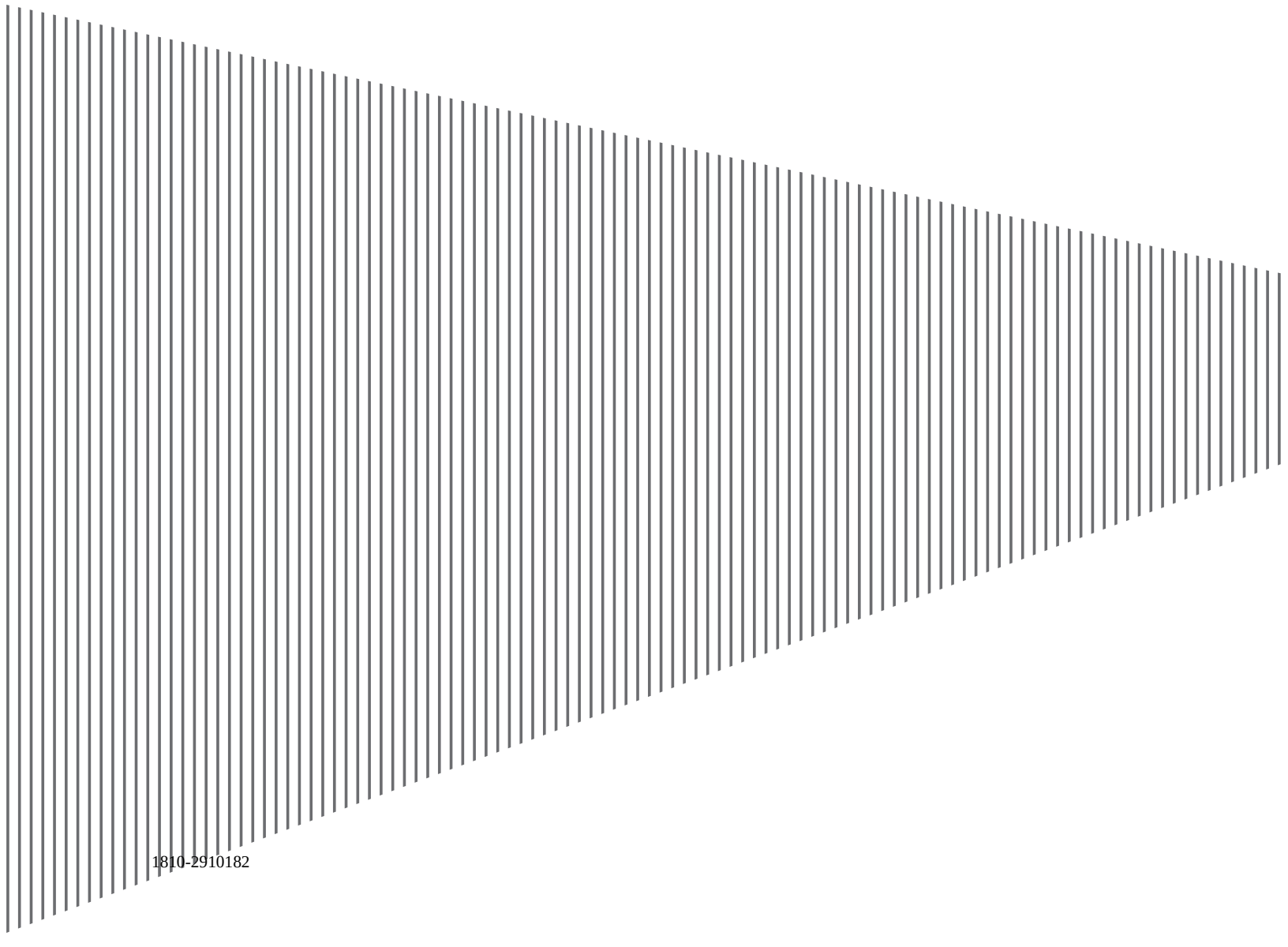

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