



NORTHWESTERN UNIVERSITY

Single Audit Report

Year ended August 31, 2019

(With Independent Auditors' Report Thereon)

NORTHWESTERN UNIVERSITY

Single Audit Report

Year ended August 31, 2019

TABLE OF CONTENTS

	Page
Independent Auditors' Report	1
Consolidated Financial Statements:	
Consolidated Statements of Financial Position	3
Consolidated Statements of Activities	4
Consolidated Statements of Cash Flows	6
Notes to Consolidated Financial Statements	7
Supplementary Schedule of Expenditures of Federal Awards	30
Notes to Supplementary Schedule of Expenditures of Federal Awards	92
Independent Auditors' Report on Internal Control Over Financial Reporting and on Compliance and Other Matters Based on an Audit of Financial Statements Performed in Accordance with <i>Government Auditing Standards</i>	94
Independent Auditors' Report on Compliance for Major Federal Program; Report on Internal Control Over Compliance; and Report on Supplementary Schedule of in Expenditures of Federal Awards Required by the Uniform Guidance	96
Schedule of Findings and Questioned Costs	99



KPMG LLP
Aon Center
Suite 5500
200 E. Randolph Street
Chicago, IL 60601-6436

Independent Auditors' Report

The Board of Trustees
Northwestern University:

Report on the Consolidated Financial Statements

We have audited the accompanying consolidated financial statements of Northwestern University (the University), which comprise the consolidated statements of financial position as of August 31, 2019 and 2018, the related consolidated statements of activities and cash flows for the years then ended, and the related notes to the consolidated financial statements.

Management's Responsibility for the Consolidated Financial Statements

Management is responsible for the preparation and fair presentation of these consolidated financial statements in accordance with U.S. generally accepted accounting principles; this includes the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of consolidated financial statements that are free from material misstatement, whether due to fraud or error.

Auditors' Responsibility

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

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the consolidated financial statements. The procedures selected depend on the auditors' judgment, including the assessment of the risks of material misstatement of the consolidated financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the consolidated financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Opinion

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of Northwestern University as of August 31, 2019 and 2018, and the changes in its net assets and its cash flows for the years then ended, in accordance with U.S. generally accepted accounting principles.



Emphasis of Matters

As discussed in note 1 to the consolidated financial statements, in 2019, the University adopted Financial Accounting Standards Board Accounting Standards Update (ASU) No. 2018-08, *Clarifying the Scope and the Accounting Guidance for Contributions Received and Contributions Made*; ASU No. 2016-14, *Not-for-Profit Entities (Topic 958): Presentation of Financial Statements of Not-for-Profit Entities*; and ASU No. 2014-09, *Revenue from Contracts with Customers (Topic 606)*, as amended. Our opinion is not modified with respect to these matters.

Other Reporting Required by Government Auditing Standards

In accordance with *Government Auditing Standards*, we have also issued our report dated December 20, 2019 on our consideration of the University's internal control over financial reporting and on our tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements and other matters. The purpose of that report is solely to describe the scope of our testing of internal control over financial reporting and compliance and the results of that testing, and not to provide an opinion on the effectiveness of the University's internal control over financial reporting or on compliance. That report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering the University's internal control over financial reporting and compliance.

KPMG LLP

Chicago, Illinois
December 20, 2019

Consolidated Statements of Financial Position

As of August 31, 2019 and 2018

<i>(in thousands of dollars)</i>	2019	2018
Assets		
Cash and cash equivalents	\$155,469	\$185,535
Accounts receivable, <i>net</i>	199,535	273,954
Contributions receivable, <i>net</i>	293,705	311,458
Notes receivable, <i>net</i>	143,976	151,666
Investments	11,079,424	11,287,087
Land, buildings, and equipment, <i>net</i>	3,320,363	3,258,035
Other assets	11,703	12,051
Total assets	15,204,175	15,479,786
Liabilities		
Accounts payable and accrued liabilities	206,020	204,237
Deferred revenue	231,456	302,709
Deposits payable and actuarial liability of annuities payable	168,564	154,743
Government advances for student loans	19,064	19,077
Bonds, notes, and other debt payable, <i>net</i>	2,551,564	2,555,136
Total liabilities	3,176,668	3,235,902
Net assets		
Without donor restrictions	7,470,942	7,654,758
With donor restrictions	4,556,565	4,589,126
Total net assets	12,027,507	12,243,884
Total liabilities and net assets	\$15,204,175	\$15,479,786

See Notes to the Consolidated Financial Statements, beginning on page 7.

Consolidated Statements of Activities

For the fiscal years ended August 31, 2019 and 2018

(in thousands of dollars)

2019

2018

Net assets without donor restrictions

Operating revenues

Tuition and fees (net of aid, \$472,537 in 2019 and \$451,121 in 2018)	\$651,678	\$620,281
Auxiliary services	92,131	83,907
Grants and contracts	696,552	648,008
Private gifts	236,308	216,935
Investment return designated for operations	446,447	482,747
Sales and services	215,629	209,690
Professional fees	41,795	38,448
Net assets released from restrictions	199,383	207,762
Total operating revenues	2,579,923	2,507,778

Operating expenses

Salaries, wages, and benefits	1,439,159	1,420,531
Services, supplies, maintenance, and other	820,166	819,272
Depreciation	165,142	150,732
Interest on indebtedness	86,724	68,648
Total operating expenses	2,511,191	2,459,183
Excess of operating revenues over expenses	\$68,732	\$48,595

Consolidated Statements of Activities continued on next page.
See Notes to the Consolidated Financial Statements, beginning on page 7.

Consolidated Statements of Activities (continued)

For the fiscal years ended August 31, 2019 and 2018

<i>(in thousands of dollars)</i>	2019	2018
Nonoperating revenues and expenses		
Private gifts and grants for buildings and equipment	\$4,430	\$2,853
Investment return, reduced by operating distribution	(263,655)	258,375
Change in value of derivative instruments	(3,072)	7,419
Other revenues (expenses), net	9,794	(1,386)
(Deficit) excess of nonoperating revenues over expenses	(252,503)	267,261
Change in net assets without donor restrictions	(183,771)	315,856
Net assets with donor restrictions		
Private gifts and grants for buildings and equipment	1,800	40
Restricted private gifts	82,535	120,283
Net loss on annuity obligation	(2,993)	(552)
Investment return	85,435	332,636
Net assets released from restrictions	(199,383)	(207,762)
Change in net assets with donor restrictions	(32,606)	244,645
Change in total net assets	(216,377)	560,501
Beginning net assets	12,243,884	11,683,383
Ending net assets	\$12,027,507	\$12,243,884

See Notes to the Consolidated Financial Statements, beginning on page 7.

Consolidated Statements of Cash Flows

For the fiscal years ended August 31, 2019 and 2018

<i>(in thousands of dollars)</i>	2019	2018
Cash flows from operating activities		
Change in net assets	(\$216,377)	\$560,501
Adjustments to reconcile change in net assets to net cash used in operating activities		
Depreciation	165,142	150,732
Losses on disposals, retirements, and sales of buildings and equipment, <i>net</i>	11,411	41,907
Accretion of issuance costs, premiums, and discounts, <i>net</i>	(637)	(174)
Change in allowance for student loans receivable and bad debt expense	11,107	467
Realized and unrealized gains on investments, <i>net</i>	(233,130)	(1,036,599)
Gifts of contributed securities	(21,836)	(35,376)
Proceeds from sale of unrestricted contributed securities	16,421	19,053
Change in value of derivative instruments	3,072	(7,419)
Restricted contributions received for long-term investment and capital projects	(41,601)	(61,873)
Changes in assets and liabilities		
Accounts receivable	74,431	(10,347)
Contributions receivable	6,224	1,282
Other assets	348	(2,719)
Accounts payable and accrued liabilities	18,565	(47,424)
Deposits and annuities payable	13,821	(1,436)
Deferred revenue	(71,253)	24,856
Government advances for student loans	(13)	(11,482)
Net cash used in operating activities	(264,305)	(416,051)
Cash flows from investing activities		
Purchases of investments	(1,570,009)	(1,647,796)
Proceeds from sales of investments	2,021,288	2,127,728
Acquisitions of land, buildings, and equipment	(264,256)	(556,940)
Proceeds from sale of buildings or equipment	521	297
Student loans disbursed	(29,006)	(23,157)
Principal collected on student loans	23,109	23,317
Other	(3,018)	(13,430)
Net cash provided by (used in) investing activities	178,629	(89,981)
Cash flows from financing activities		
Proceeds from issuance of notes, bonds, and other debt payable	40,000	615,000
Payments for debt issuance costs	—	(2,522)
Principal payments on notes, bonds, and other debt payable	(42,935)	(97,770)
Proceeds from sale of restricted contributed securities	5,415	16,323
Restricted contributions received for long-term investment and capital projects	53,130	67,913
Net cash provided by financing activities	55,610	598,944
(Decrease) increase in cash and cash equivalents	(30,066)	92,912
Cash and cash equivalents at beginning of year	185,535	92,623
Cash and cash equivalents at end of year	\$155,469	\$185,535
Supplemental disclosure of cash flow information		
Change in accrued liabilities for construction in progress	(\$24,854)	(\$39,648)
Capitalized interest	7,035	20,889
Cash paid for interest	93,757	85,382

See Notes to the Consolidated Financial Statements, beginning on page 7.

Notes to the Consolidated Financial Statements

For the fiscal years ended August 31, 2019 and 2018

1. Summary of Significant Accounting Policies

University Activities

Northwestern University (Northwestern or the University) is a major private research university with more than 21,000 students enrolled in 12 academic divisions on two lakefront campuses in Evanston and Chicago and an international campus in Doha, Qatar.

Northwestern's mission is to provide the highest-quality education for its students, to develop innovative programs in research, and to sustain an academic community that embraces these enterprises.

Basis of Accounting

General

The University maintains its accounts and prepares its consolidated financial statements on the accrual basis of accounting in conformity with US generally accepted accounting principles (GAAP). The Financial Accounting Standards Board (FASB) Accounting Standards Codification (ASC) is the source of authoritative GAAP. The University prepares its consolidated financial statements in accordance with the Not-for-Profit Entities Topic of the FASB ASC. These statements include all wholly owned subsidiaries. All significant interentity transactions and accounts have been eliminated in consolidation.

Net Asset Classifications

Net assets and related changes therein are classified into two categories based on the existence or absence of donor-imposed restrictions. For further discussion of the classification of donor-restricted endowment funds and disclosures about both donor-restricted and

institution-designated endowment funds, see notes 4 and 9, respectively.

The category *Net Assets without Donor Restrictions* describes funds that have no donor-imposed restrictions. All revenues, expenses, gains, and losses that are not restricted by donors are included in this classification. Certain net assets without donor restrictions are institution-designated for specific uses under the internal operating budget.

The category *Net Assets with Donor Restrictions* describes funds that are subject to donor-imposed restrictions that will be met either by actions of the University, the passage of time, or which may be perpetual. These net assets include gifts for which donor-imposed restrictions have not been met in the year of receipt (these may include future capital projects), as well as trust activity and pledges receivable. Net assets with perpetual restrictions consist of donor-restricted endowment funds, contributions receivable for such funds, and certain trusts.

Revenue from donor-restricted sources is reclassified as an increase to net assets without donor restrictions when the circumstances of the restrictions have been fulfilled or the restrictions expire. Donor-restricted contributions whose restrictions are met within the same fiscal year in which they are received are reported as revenue without donor restrictions. All expenses are reported in net assets without donor restrictions. Absent explicit donor stipulations indicating otherwise, the University reports expiration of donor restrictions on long-lived assets as net assets without donor restrictions when the assets are placed in service.

Net assets as of August 31 are as follows:

(in thousands of dollars) 2019

Nature of specific net assets	Without donor restrictions	With donor restrictions	Total net assets
Teaching, research, and program support	\$2,368,537	\$2,771,527	\$5,140,064
Student financial aid	659,387	808,523	1,467,910
Capital and operations	1,097,581	539,263	1,636,844
Endowment net assets subtotal	4,125,505	4,119,313	8,244,818
Pledges	—	293,705	293,705
Unexpended gifts	—	46,665	46,665
Annuity and other split-interest agreements	—	61,718	61,718
Student loan funds	89,216	35,164	124,380
Operating and plant	3,256,221	—	3,256,221
Total	\$7,470,942	\$4,556,565	\$12,027,507

(in thousands of dollars) 2018

Nature of specific net assets	Without donor restrictions	With donor restrictions	Total net assets
Teaching, research, and program support	\$2,426,241	\$2,793,142	\$5,219,383
Student financial aid	675,028	810,692	1,485,720
Capital and operations	1,128,441	553,374	1,681,815
Endowment net assets subtotal	4,229,710	4,157,208	8,386,918
Pledges	—	311,458	311,458
Unexpended gifts	—	23,025	23,025
Annuity and other split-interest agreements	—	59,523	59,523
Student loan funds	96,232	37,912	134,144
Operating and plant	3,328,816	—	3,328,816
Total	\$7,654,758	\$4,589,126	\$12,243,884

Operating Activities

Operating activities in the consolidated statements of activities reflect all transactions increasing or decreasing net assets without donor restrictions, except for private gifts and grants for buildings and equipment; restricted private gifts; investment return net of operating distributions; gains (losses) from annuity obligations and derivative instruments; and certain other nonrecurring items.

Fair Value Measurements

The University makes fair value measurements and related disclosures thereon as required by the Fair Value Measurements and Disclosures Topic of the FASB ASC. For further discussion, see note 4.

Cash and Cash Equivalents

Cash reflects currency and deposits or other accounts with financial institutions that may be deposited or withdrawn without restriction or penalty. Cash equivalents represent short-term and highly liquid investments with original maturities of three months or less.

Contributions

Contributions received, including unconditional promises to give (contributions receivable), are recognized by the University as revenues at their fair values at the date of gift. Private gifts, including unconditional promises to give, are recognized as revenues in the period received. Conditional promises to give are not recognized until all barriers to entitlement of the assets are overcome and the promisor's rights of return or release have elapsed.

Investments

Investments in financial instruments are recorded at fair value. The University values its investments using a hierarchy of valuation inputs based on the extent to which the inputs are observable in the marketplace. Observable inputs reflect market data obtained from sources independent of the reporting entity, whereas unobservable inputs reflect the entity's own assumptions about how market participants would value an asset or a liability based on the best information available. Valuation techniques used to measure fair value must maximize the use of observable inputs and minimize the use of unobservable inputs.

The following describes the fair value hierarchy and the primary valuation methodologies used by the University for assets and liabilities measured at fair value on a recurring basis:

Level 1: Quoted prices in active markets for identical assets or liabilities. Market-price data are generally obtained from relevant exchanges or dealer markets.

Level 2: Inputs other than Level 1 that are observable either directly or indirectly, such as quoted prices in markets that are not active, or other inputs that are observable or can be corroborated by observable market data for substantially all of the same terms of the assets or liabilities. Inputs may be obtained from various sources, including market participants, dealers, and brokers.

Level 3: Unobservable inputs that are supported by little or no market activity and are significant to the fair value of the assets or liabilities.

An investment's categorization within the valuation hierarchy is based on the lowest level of input significant to the fair value measurement. In the event that changes in the inputs used in the fair value measurement of an asset or liability result in a transfer of the fair value measurement to a different categorization, such transfers between fair value categories are determined and recognized at the end of the reporting period. The categorization of an investment is based upon its pricing transparency and liquidity and does not necessarily correspond to the University's perceived risk of that investment. As a practical expedient as permitted under GAAP, the reported net asset value (NAV) of investments with external managers is used to estimate their fair value. Such investments for which NAV is used as a practical expedient are

not categorized in and are shown separately from the valuation hierarchy. For further discussion, see note 4.

Equity securities with readily determinable fair values are valued at the last sale price (if quotations are readily available) or at the closing bid price in the principal market in which such securities are normally traded (if no sale price is available). The fair values for these securities are classified as Level 1 because the securities have observable market inputs. Most fixed income securities and debt securities are valued based on dealer-supplied valuations; since these securities have significant other observable inputs, they are classified as Level 2.

The estimated fair values of equity securities without readily determinable fair values and of other generally less liquid investments are based on valuation information received on the relevant entities and may include last sale information or independent appraisals of value. In addition, standard valuation techniques, including discounted cash flow models or valuation multiples based on comparable investments, may be used. Because the fair values for these assets are based predominantly on unobservable inputs, they are classified as Level 3.

Investments in certain real assets and other investments are recorded at acquisition or construction cost or, if received as a contribution, at fair value as of donation date. The University periodically assesses these assets for impairment by comparing their expected future cash flows with their carrying value. An impairment loss is recognized for the difference between estimated fair value and carrying value. In management's opinion, no impairment of investments held at cost existed as of August 31, 2019 and 2018. For further discussion of such investments, see note 4.

The methods described above may produce a fair value that may not be indicative of net realizable value or of future fair values. Furthermore, while the University believes its valuation methods are appropriate and consistent with those of other market participants, the use of different methodologies or assumptions to determine the fair value of certain investments could result in a different estimate of fair value at the reporting date.

Investment income is recorded on the accrual basis, and purchases and sales of investment securities are reflected on a trade-date basis.

Derivative Financial Instruments

The University uses various financial instruments to obtain equity market exposure (e.g., equity price risk) of an underlying investment strategy; if applicable, these have a reference index (e.g., S&P 500) that is the same as, or highly correlated with, the reference index of the investment strategy. Such instruments are not designated as hedges for accounting purposes and are recorded at fair value.

The University enters into swap agreements to hedge future interest-rate movements. It may also add various interest-rate options to hedge the overall portfolio and use an interest-rate swap agreement to hedge variable interest-rate exposure. Interest-rate swaps are valued using observable inputs, such as quotations received from the counterparty, dealers, or brokers, whenever they are available and considered reliable. If and when models are used, the value of the interest-rate swap depends on the contractual terms of and specific risks inherent in the instrument, as well as the availability and reliability of observable inputs. Such inputs include market prices for reference securities, yield curves, credit curves, measures of volatility, and prepayment rates as well as correlations of such inputs. Due to significant other observable inputs, the interest-rate swaps are classified as Level 2. For further discussion, see note 4.

Accounts and Notes Receivable

Accounts receivable are recorded at net realizable value. Those generally expected to be collected within one year are carried without an allowance. Accounts receivable deemed to be uncollectible are written off at that time.

Notes receivable are recorded at net realizable value and are predominantly student loans with varying maturities. Notes receivable deemed to be uncollectible are written off.

Contributions Receivable

Contributions receivable that represent unconditional promises to give are recognized at fair value as contributions with donor restrictions in the period such promises are made by donors. Contributions are discounted at a risk-adjusted rate commensurate with the duration of the donor's payment plan. Amortization of the discounts is recorded as additional contribution revenue. Allowance is made for uncollectible contributions based on management's

expectations regarding collection of outstanding promises to give and past collection experience. There were no significant conditional promises to give as of August 31, 2019 and 2018.

Land, Buildings, and Equipment

Land, buildings, and equipment are recorded at cost or, if received as gifts, at fair value at the date of gift. Significant renewals and replacements are capitalized. The cost of repairs and maintenance is expensed as incurred. Purchases of library books and works of art are also expensed.

Depreciation is calculated using the straight-line method over the useful lives of the equipment, which are estimated to be 3 to 20 years; of the buildings, building improvements, and land improvements, which are estimated to be 10 to 40 years; and of the leasehold improvements, which are estimated to be the shorter of the useful life or the lease term.

The University reviews long-lived assets for impairment by comparing the future cash flows expected from the asset to the carrying value of the asset. If the carrying value of an asset exceeds the sum of estimated undiscounted future cash flows, an impairment loss is recognized for the difference between estimated fair value and carrying value.

Charitable Remainder Trusts

Charitable remainder trusts are classified as net assets with donor restrictions and recognized at fair value.

Annuities Payable

Annuities payable consist of annuity payments currently due and the actuarial amount of annuities payable. The actuarial amount of annuities payable is the present value of the aggregate liability for annuity payments over the expected lives of the beneficiaries.

Self-Insurance Reserves

The University maintains a self-insurance program for general liability, professional liability, automobile liability, property damage, educators' liability, cyber liability, and certain employee and student insurance coverages. This program is supplemented with commercial excess insurance above the University's self-insurance retention. The reserves for self-insurance, postemployment benefits, and postretirement medical and life insurance benefits are based on actuarial studies and management estimates. See notes 10 and 12 for additional discussion.

Revenue Recognition

Revenues from tuition and fees are reflected net of reductions from institutional student aid and are recognized as the services are provided over the academic year, including pro-rata adjustments for educational programs crossing over fiscal years. Institutional student aid includes amounts funded by endowment earnings, gifts, and other sources and reduces the published price of tuition for students receiving such aid. Fiscal year 2020 noncancelable fall-quarter tuition and fees, billed and received in fiscal year 2019, are reported as deferred revenue in fiscal year 2019. Fiscal year 2019 fall-quarter tuition and fees, billed but not earned in fiscal year 2018, are reported as deferred revenue in fiscal year 2018. (For further discussion of deferred revenues, see note 6.) Of the \$651.7 million and \$620.3 million in revenue recognized for the years ended August 31, 2019 and 2018, respectively, \$600.9 million and \$577.2 million, respectively, was from academic credit programs, and \$50.8 million and \$43.1 million, respectively, was from nonacademic credit programs.

Revenues from auxiliary services, such as residence and food services, represent fees for goods and services furnished to University students, faculty, and staff; these revenues are recognized in the fiscal year in which the goods and services are provided. Of the \$92.1 million and \$83.9 million in revenue recognized for the years ended August 31, 2019 and 2018, respectively, \$82.6 million and \$78.6 million, respectively, was from room and board, while the remaining revenue was from other miscellaneous residence and food services.

Grants and contracts revenue is received from federal and other sponsors. It may represent either an exchange transaction for an equivalent benefit in return or a nonexchange transaction in which the resources provided are for the benefit of the University, the funding organization's mission, or the public at large. Revenues from exchange transactions are recognized as performance obligations are satisfied, which in most cases are as related costs are incurred. Revenues from nonexchange transactions are recognized as revenue when qualifying expenditures are incurred and applicable conditions and restrictions under the agreements are met. Conditional awards from federal sponsors outstanding as of August 31, 2019, were \$552.4 million.

Sales and services revenues represent fees for services and goods provided to external parties in the course of educational activities, revenues from the provision of physical plant services and goods to external institutions contiguous to the University campuses, and trademark and royalty revenues arising from licensing of innovative technologies, copyrights, and other intellectual property. These revenues are recognized in the fiscal year in which goods and services are provided.

Professional fees arise from faculty and department services provided to external institutions such as hospitals. Revenues are recognized in the fiscal year in which the services are provided.

Income Taxes

The Internal Revenue Service has determined that the University is exempt from income taxes under Section 501(c)(3) of the US Internal Revenue Code, except with regard to unrelated business taxable income (UBTI), which is taxed at corporate income tax rates. The University files federal and various state and local tax returns. The statute of limitations on the University's federal tax returns remains open for fiscal years 2016 through 2019.

The University makes an assessment of individual tax positions and follows a process for recognition and measurement of uncertain tax positions. Tax positions are evaluated on whether they meet the "more likely than not" standard for sustainability on examination by tax authorities.

The Tax Cuts and Jobs Act (the Act) was enacted on December 22, 2017. The Act's impact on the University includes new excise taxes on executive compensation and net investment income, as well as new rules for calculating UBTI. The overall impact of the Act remains uncertain, and its full impact will not be known until further regulatory guidance is provided. For the year ended August 31, 2019, the University is subject to the federal excise tax of 1.4 percent on net investment income, which includes interest, dividends, and net realized gains on investments.

Uses of Estimates in the Preparation of the Consolidated Financial Statements

The preparation of the consolidated financial statements in conformity with GAAP requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities; the

disclosure of contingent assets and liabilities at the date of the consolidated financial statements; and the reported amounts of revenues and expenses during the relevant period. Actual results could differ from those estimates.

Newly Adopted Accounting Pronouncements

In June 2018, the FASB issued Accounting Standards Update (ASU) 2018-08, *Clarifying the Scope and the Accounting Guidance for Contributions Received and Contributions Made*. The new ASU is intended to assist entities in (1) evaluating whether transactions should be accounted for as contributions (nonexchange transactions) within the scope of Topic 958, *Not-for-Profit Entities*, or as exchange transactions subject to other guidance and (2) determining whether a contribution is conditional. The ASU clarifies that a contribution is conditional if the agreement includes both (a) a barrier or barriers that must be overcome for the recipient to be entitled to the assets transferred and (b) a right of return for the transferred assets or a right of release of the promisor's obligation to transfer assets. The ASU became effective for the University for the year ended August 31, 2019. The University's adoption of the ASU on a modified prospective basis did not have a material effect on its consolidated financial statements.

In March 2017, the FASB issued ASU 2017-07, *Compensation—Retirement Benefits (Topic 715): Improving the Presentation of Net Periodic Pension Cost and Net Periodic Postretirement Benefit Cost*. The ASU requires the service cost component of net periodic benefit cost for pension and other postretirement benefits to be presented as a part of employee benefit expense. The other components of net periodic benefit cost, such as interest, gains or losses, and amortization of other actuarially determined amounts, are required to be presented as a nonoperating change in net assets without donor restrictions. The ASU became effective for the University for the year ended August 31, 2019. The University's retrospective adoption of the ASU did not have a material effect on its consolidated financial statements.

In August 2016, the FASB issued ASU 2016-14, *Not-for-Profit Entities (Topic 958): Presentation of Financial Statements of Not-for-Profit Entities*. During 2019, the

University retrospectively adopted, as of September 1, 2017, the provisions of the ASU, which reduce the number of net asset categories from three to two: net assets without donor restrictions, previously reported as unrestricted net assets; and net assets with donor restrictions, previously reported as temporarily restricted net assets and permanently restricted net assets. The ASU also requires that underwater endowment funds, previously reported as reductions to unrestricted net assets, be reported instead as reductions to net assets with donor restrictions. Accordingly, the University has reclassified deficits from underwater funds of \$45 thousand and \$57 thousand, respectively, as of the beginning of fiscal year 2019 and 2018 as reductions to net assets with donor restrictions.

In January 2016, the FASB issued ASU 2016-01, *Recognition and Measurement of Financial Assets and Financial Liabilities*, affecting accounting for equity investments and financial liabilities under the fair value option and certain presentation and disclosure requirements for financial instruments. The standard is effective in fiscal year 2020. The University early adopted this ASU on a prospective basis in fiscal year 2019. The adoption of this standard did not have a material effect on the University's consolidated financial statements.

In May 2014, the FASB issued ASU 2014-09, *Revenue from Contracts with Customers*, as amended, a new revenue recognition topic in the codification that provides a principle-based framework to replace earlier industry-specific and rule-based revenue recognition standards. The University adopted this standard on a modified retrospective basis in fiscal year 2019. The adoption of this standard did not materially change the timing or amount of revenue recognized by the University. However, the standard does require that tuition and fees be presented in the consolidated statements of activities net of institutional student aid. Previously, such revenues were presented at published rates, followed by a reduction for institutional student aid. Accordingly, the University's 2018 consolidated statements of activities have been revised to conform to the 2019 presentation.

Recent Accounting Pronouncements

In August 2018, the FASB issued 2018-13, *Changes to the Disclosure Requirements for Fair Value Measurement*. These guidelines remove, modify, and add certain disclosure requirements related to transfers between levels of the value hierarchy and information about inputs used to develop fair value measurements. This standard is effective for the University in fiscal year 2021.

In November 2016, the FASB issued clarifying guidance on ASU 2016-18, *Restricted Cash (Topic 230): Statement of Cash Flows*. The amendments in the update require that a statement of cash flows explain the change during the period in the total of cash, cash equivalents, and amounts generally described as restricted cash or restricted cash equivalents. Therefore, amounts generally described as restricted cash and restricted cash equivalents should be included with cash and cash equivalents when reconciling the beginning-of-period and end-of-period total amounts shown on the statement of cash flows. The amendments in the update do not provide a definition

of restricted cash or restricted cash equivalents. The ASU is effective for the University in fiscal year 2020.

In June 2016, the FASB issued ASU 2016-13, *Financial Instruments—Credit Losses*, which amends the Board's guidance on impairment of financial instruments. This standard is effective for the University in fiscal year 2021.

In February 2016, the FASB issued ASU 2016-02, *Leases*, new guidance to increase the transparency and comparability of lease reporting by recognizing lease assets and liabilities on the consolidated statements of financial position and disclosing key information about leasing activities. The standard is effective for the University in fiscal year 2020.

The University is currently evaluating the impact of the aforementioned standards.

Reclassifications

Certain prior-year amounts have been reclassified to conform to the current-year presentation.

2. Accounts Receivable and Notes Receivable

Accounts receivable as of August 31 are summarized on the consolidated statements of financial position as follows:

<i>(in thousands of dollars)</i>	2019	2018
Research and other sponsored programs support	\$98,545	\$84,711
Student receivables	15,811	120,393
Other receivables	85,835	69,510
Accounts receivable subtotal	200,191	274,614
Less allowances for student uncollectible amounts	(656)	(660)
Total accounts receivable, net	\$199,535	\$273,954

Notes receivable as of August 31 are summarized on the consolidated statements of financial position as follows:

<i>(in thousands of dollars)</i>	2019	2018
Notes receivable	\$145,373	\$155,939
Less allowances for student uncollectible amounts	(1,397)	(4,273)
Total notes receivable, net	\$143,976	\$151,666

3. Contributions Receivable

Contributions receivable as of August 31 consisted of the following:

<i>(in thousands of dollars)</i>	2019	2018
Unconditional promises expected to be collected in		
Less than one year	\$57,392	\$53,615
One to five years	173,712	185,228
More than five years	98,503	114,416
Contributions receivable subtotal	329,607	353,259
Less unamortized discounts	(35,148)	(41,345)
Less allowances for uncollectible amounts	(754)	(456)
Total contributions receivable, net	\$293,705	\$311,458

Contributions receivable are discounted at rates ranging from 1.4 to 6.5 percent.

4. Investments

The University's investments are overseen by the Investments Committee of the Board of Trustees. Guided by the policies established by the Investments Committee, the University's Investment Office or external equity investment managers, external and internal fixed income and cash managers, and various limited partnership managers direct the investment of endowment and trust assets, certain working capital,

expendable funds with donor restrictions temporarily invested, and commercial real estate.

Substantially all of these assets are merged into internally managed investment pools on a market value basis. Each holder of units in the investment pools subscribes to or disposes of units on the basis of the market value per unit at the beginning of each month.

Fair Value Disclosures

The following tables show the estimated fair value of investments and derivatives, grouped by the valuation hierarchy as defined in note 1, as of August 31:

(in thousands of dollars) 2019

	Quoted prices in active markets (Level 1)	Significant other observable inputs (Level 2)	Significant unobservable inputs (Level 3)	NAV as Practical Expedient (NAV)	Total fair value
Cash and cash equivalents	\$79,213	—	—	—	\$79,213
US equity	442,952	\$71	—	\$1,009,592	1,452,615
International equity	318,103	—	\$64	1,428,147	1,746,314
Fixed income	91,753	518,758	—	276,963	887,474
High-yield credit	—	—	—	266,648	266,648
Absolute return	—	—	—	1,939,874	1,939,874
Private investments	34,597	321	10,403	2,842,382	2,887,703
Real assets	189,907	11,582	51,087	1,496,073	1,748,649
Other investments	30,835	590	25,411	—	56,836
Interest-rate derivatives	736	(370)	—	—	366
Subtotal investment assets at fair value	1,188,096	530,952	86,965	9,259,679	11,065,692^(a)
Interest-rate swaps	—	(16,482)	—	—	(16,482)
Total	\$1,188,096	\$514,470	\$86,965	\$9,259,679	\$11,049,210

^(a) Investments held at cost totaling \$26,493 thousand should be added to the subtotal investment assets at fair value, and beneficial interest in charitable remainder trusts totaling \$12,761 thousand should be subtracted from the subtotal investment assets at fair value to reconcile to total investment assets of \$11,079,424 thousand as of August 31, 2019.

(in thousands of dollars) 2018

	Quoted prices in active markets (Level 1)	Significant other observable inputs (Level 2)	Significant unobservable inputs (Level 3)	NAV as Practical Expedient (NAV)	Total fair value
Cash and cash equivalents	\$84,520	—	—	—	\$84,520
US equity	628,791	\$93	—	\$1,026,835	1,655,719
International equity	275,595	—	\$66	1,635,779	1,911,440
Fixed income	88,522	548,631	—	266,423	903,576
High-yield credit	—	—	—	301,826	301,826
Absolute return	—	—	—	2,123,246	2,123,246
Private investments	24,086	321	17,633	2,409,604	2,451,644
Real assets	252,877	9,786	91,052	1,429,307	1,783,022
Other investments	30,628	—	25,799	—	56,427
Interest-rate derivatives	2,500	(1,742)	—	—	758
Subtotal investment assets at fair value	1,387,518	557,089	134,550	9,193,020	11,272,178^(a)
Interest-rate swaps	—	(13,410)	—	—	(13,410)
Total	\$1,387,518	\$543,678	\$134,550	\$9,193,020	\$11,258,768

^(a) Investments held at cost totaling \$27,657 thousand should be added to the subtotal investment assets at fair value, and beneficial interest in charitable remainder trusts totaling \$12,748 thousand should be subtracted from the subtotal investment assets at fair value to reconcile to total investment assets of \$11,287,087 thousand as of August 31, 2018.

Investments included as NAV as Practical Expedient consist primarily of the University's ownership in investments (principally limited partnership interests in long-only equity and credit, hedge, private equity, real estate, and other similar funds). As a practical expedient, when quoted market prices are not available, the estimated fair values of these investments are generally based on reported partners' capital or NAV provided by the associated external investment managers. In cases where the practical expedient threshold is not met, such as an investment not being in compliance with GAAP, or where a statement of partners' capital is not provided, the investment is reported as Level 3. Since a range of possible values exists for these partnership investments, the

estimated values may be materially different from the values that would have been used had a ready market for these partnerships existed. The University exercises diligence in assessing the policies, procedures, and controls of external investment managers; management's assessment includes a valuation review process of the most recent available audited and unaudited financial statements and discussions with the majority of external investment managers about the aggregate carrying value of the respective investments at August 31, 2019. The assessment may result in adjustment to the external managers' valuations of the securities' fair value if those valuations are not in accordance with GAAP.

The following tables summarize changes in the investments and derivatives classified by the University in Level 3 of the fair value hierarchy for the fiscal years ended August 31, 2019 and 2018:

<i>(in thousands of dollars)</i>	2018					2019
	Fair value	Purchases	Sales and settlements	Realized and unrealized gains (losses)	Transfers into and out of Level 3	Fair value
International equity	\$66	—	—	(\$2)	—	\$64
Private investments	17,633	\$830	(\$211)	(1,468)	(\$6,381)	10,403
Real assets	91,052	62	(9,165)	(6,562)	(24,300)	51,087
Other investments	25,799	—	—	(388)	—	25,411
Total investments	\$134,550	\$892	(\$9,376)	(\$8,420)	(\$30,681)	\$86,965

<i>(in thousands of dollars)</i>	2017					2018
	Fair value	Purchases	Sales and settlements	Realized and unrealized gains (losses)	Transfers into and out of Level 3	Fair value
International equity	\$19	\$55	—	(\$8)	—	\$66
Private investments	17,310	5,271	(\$7)	(4,941)	—	17,633
Real assets	112,719	—	(8,367)	5,199	(\$18,499)	91,052
Other investments	24,966	—	—	833	—	25,799
Total investments	\$155,014	\$5,326	(\$8,374)	\$1,083	(\$18,499)	\$134,550

There were no significant transfers or reclassifications between Levels 1 and 2 during fiscal years 2019 and 2018. In fiscal year 2019, there were two transfers out of Level 3 into Level 1. One occurred as a subordinated equity security converted to publicly traded common shares, while the other was reclassified since the underlying securities have readily available market prices. There was one transfer out of Level 3 in fiscal year 2018.

As of August 31, 2019 and 2018, investments held at cost included real estate totaling \$19.4 million. Investments held at cost also included property co-ownerships, mortgages, and other investments totaling \$7.1 million and \$8.3 million as of August 31, 2019 and 2018, respectively.

The table below presents funding obligations and redemption terms of investments by asset class. The University is required under certain partnership agreements to advance additional funding up to specified levels over a period of several years. These uncalled commitments have fixed expiration dates and other termination clauses. At August 31, 2019, the University was committed to making future capital contributions in the amount of \$2.1 billion, primarily in the next five years, as detailed in the table. Certain agreements also contain notice periods, lock-ups, and gates that limit the University's ability to initiate redemptions.

(in thousands of dollars)

	Fair value	Remaining life	Uncalled commitments	Redemption terms	Redemption restrictions
US equity	\$1,452,615	No limit	—	Daily to annually, with 1- to 90-day notice periods	Lock-up provisions ranging from none to 3 years
International equity	1,746,314	No limit	\$45,697	Daily to annually, with 1- to 180-day notice periods	Lock-up provisions ranging from none to 3 years
Fixed income	887,474	No limit	—	Daily to quarterly, with 1- to 90-day notice periods	No lock-up provisions
High-yield credit	266,648	No limit to 12 years	105,054	Certain partnerships ineligible for redemption; other funds semiannually to annually, with 90-day notice periods	Certain partnerships not redeemable; other partnerships include side pockets subject to general partner discretion
Absolute return	1,939,874	No limit	57,706	Daily to greater than annually, with 1- to 120-day notice periods; private partnership ineligible for redemption	Lock-up provisions ranging from none to 3 years; side pockets on many funds; one partnership not redeemable
Private investments	2,887,703	No limit to 12 years	956,116	Partnerships ineligible for redemption; equity securities daily, with 1-day notice period	Private partnerships not redeemable; equity securities have no lock-up provisions
Real assets	1,748,649	No limit to 14 years	920,286	Partnerships ineligible for redemption; commodity and equity funds weekly to quarterly, with 1- to 3-day notice periods	Drawdown partnerships not redeemable; no restriction on commodity and equity funds

Cash and cash equivalents for investment purposes include bank accounts holding cash and money market funds consisting of short-term US Treasury securities. Cash and cash equivalents are highly liquid and are carried at amortized cost, which approximates fair value.

The University's marketable securities categories include investments in US equities, international equity, and fixed income strategies via separately managed accounts, partnerships, and commingled funds. US equity strategies include large-, mid-, and small-cap public equities. One investment in this category currently may not be redeemed over the next year.

International equities include developed market (ex-US public equities) and emerging market strategies. Three investments in this category currently may not be redeemed over the next year, while one other may only be partially redeemed over the next year.

Fixed income strategies include US government securities, agency securities, inflation-linked bonds (TIPS), corporate bonds, global bonds, and short-term cash investments.

The high-yield credit portfolio includes investments in distressed debt and other credit instruments with fixed income characteristics but more specific risk tied to the securities and their underlying cash flows.

The absolute return portfolio is weighted toward long-short equity managers, uncorrelated strategies, and diversifying event-driven or hedged tactical credit strategies. One investment in this portfolio currently may not be redeemed over the next year due to lock-up provisions. As of August 31, 2019, the remaining investments have either full or partial liquidity over the next year, with the exception of those having side pockets. As of August 31, 2019 and 2018, the University posted \$137.9 million and \$143.7 million, respectively,

of public equity as a source of collateral for an alternative investment strategy.

The private investments portfolio includes investments in global buyout and venture capital funds. The real assets portfolio includes the University's investments in energy, timber, real estate, and public investments in some commodity and equity funds.

Lives of the specific funds could vary significantly, depending on the investment decisions of the external fund managers, changes in the University's portfolio, and other circumstances. Furthermore, the University's obligation to fund these commitments may be waived by the fund managers for a variety of reasons, including changes in the market environment and/or investment strategy.

Investment Return

Investment return designated for operations is defined as the investment payout, according to the spending guideline for the Long-Term Balanced Pool and the actual investment income for all other investments. In 2019 and 2018, respectively, additional amounts of \$50 million and \$100 million were authorized in excess of the spending rule to support strategic investment and are included in the investment return designated for operations line of the consolidated statements of activities. Gross investment income from specific investments held at cost totaled \$15.4 million and \$15.9 million for the fiscal years ended August 31, 2019 and 2018, respectively. Investment expenses related to specific investments held at cost totaled \$4.8 million and \$6 million for the fiscal years ended August 31, 2019 and 2018, respectively. All other investment returns are categorized as nonoperating.

Certain direct expenses paid by the University for investment management and custody services have been netted against investment earnings.

Derivative Financial Instruments

The University has entered into hedging transactions via various interest-rate swaps and swaptions and has maintained those positions since fiscal year 2010. These instruments are presented net in the fixed income asset class of investments within Level 2.

Credit exposure represents the University's potential loss if counterparties fail to perform under the terms of the contracts, or collateral, if any, does not fully support amounts obligated. This exposure is measured by the fair value of the cash collateral held at the counterparties at the reporting date. The University manages its exposure to credit risk by using highly rated counterparties, establishing risk-control limits, and obtaining collateral where appropriate, and on a net basis had obligations to counterparties as of August 31, 2019 and 2018. As a result, the University has limited credit risk. The University has entered into margin collateral

agreements with major investment banks that impose a \$1 million threshold on both parties. As of August 31, 2019 and 2018, the University posted collateral of \$0.7 million and \$2.5 million, respectively, to one counterparty. To date, the University has not incurred any losses on derivative financial instruments due to counterparty nonperformance.

The University regularly reviews the use of derivative financial instruments by each of the managers of alternative investment funds in which it participates. While these outside managers generally use such instruments for hedging purposes, derivative financial instruments are employed for trading purposes by numerous independent asset managers of the University.

The following tables summarize the derivative financial instruments held by the University as of August 31:

(in thousands of dollars)

	2019					
	Notional amount	Assets	Liabilities	Fiscal year net gain (loss)	Interest rates	Maturity date
Investment-related derivatives						
Interest-rate swaptions	\$200,000	\$736	(\$368)	(\$106)	5%	12/2/2019
Total investment-related	200,000	736	(368)	(106)	5%	12/2/2019
Credit-related derivatives						
Interest-rate swaps	125,000	—	(16,482)	(3,072)	4.12–4.38%	8/31/2023
Total credit-related	125,000	—	(16,482)	(3,072)	4.12–4.38%	8/31/2023
Total derivative financial instruments	\$325,000	\$736	(\$16,850)	(\$3,178)		

(in thousands of dollars)

	2018					
	Notional amount	Assets	Liabilities	Fiscal year net gain (loss)	Interest rates	Maturity date
Investment-related derivatives						
Interest-rate swaptions	\$200,000	\$2,500	(\$1,742)	—	5%	12/2/2019
Total investment-related	200,000	2,500	(1,742)	—	5%	12/2/2019
Credit-related derivatives						
Interest-rate swaps	125,002	—	(13,410)	\$7,419	4.12–4.38%	8/31/2023
Total credit-related	125,002	—	(13,410)	7,419	4.12–4.38%	8/31/2023
Total derivative financial instruments	\$325,002	\$2,500	(\$15,152)	\$7,419		

5. Land, Buildings, and Equipment

Land, buildings, and equipment as of August 31 consisted of the following:

<i>(in thousands of dollars)</i>	2019	2018
Land	\$31,036	\$31,036
Construction-in-progress	117,474	563,507
Buildings and leasehold improvements	4,455,482	3,828,036
Equipment	663,544	651,033
Accumulated depreciation	(1,947,173)	(1,815,577)
Total land, buildings, and equipment, net	\$3,320,363	\$3,258,035

Included in construction-in-progress costs are building and leasehold improvement capitalizations. Building costs are funded by bonds, gifts (received or pledged), grants, and funds without donor restrictions.

Under the University's interest capitalization policy, actual interest costs incurred during the period of construction of an asset for University use are capitalized until that asset is substantially completed and ready for use. The capitalized cost is reflected in the asset's total cost and depreciated over the asset's useful life. Assets qualifying for interest capitalization may include buildings and major equipment.

In fiscal year 2019, the Simpson Querrey Biomedical Research Center was completed and placed into service. The sale of four floors to Ann & Robert H. Lurie Children's Hospital of Chicago was consummated upon completion of the building.

Lease Obligations

The University is obligated as lessee under numerous operating leases to pay base rent through the lease expiration dates. Operating leases consist primarily of leases for the use of real property and have terms expiring through fiscal year 2031. Real estate lease expenses totaled \$15.9 million and \$14.1 million for the fiscal years ended August 31, 2019 and 2018, respectively. Sublease rental income totaled \$3 million and \$2.9 million for the fiscal years ended August 31, 2019 and 2018, respectively. At August 31, 2018, there were no subleases that are noncancelable for one year or more. The future minimum lease payments under noncancelable operating leases through August 31 of each period are shown at right.

(in thousands of dollars)

2020	\$15,871
2021	14,272
2022	13,321
2023	12,304
2024	12,698
2025 and thereafter	55,058
Total	\$123,524

Rentals under Leases

The University is entitled as lessor under numerous operating leases to receive rental payments. Operating leases consist primarily of leases for the use of real property and have terms expiring through fiscal year 2041. The future minimum rental payments under noncancelable operating leases through August 31 of each period are shown at right.

(in thousands of dollars)

2020	\$2,016
2021	1,905
2022	1,910
2023	1,956
2024	1,863
2025 and thereafter	9,412
Total	\$19,062

6. Deferred Revenue

Deferred revenue as of August 31 is summarized on the consolidated statements of financial position as follows:

<i>(in thousands of dollars)</i>	2019	2018
Tuition and housing	\$121,359	\$222,990
Sponsored contracts (exchange)	68,899	49,055
Conditional contributions and grants	22,360	9,110
Other deferred revenue	18,838	21,554
Total deferred revenue	\$231,456	\$302,709

7. Deposits Payable and Actuarial Liability of Annuities Payable

Deposits payable and actuarial liability of annuities payable as of August 31 are summarized on the consolidated statements of financial position as follows:

<i>(in thousands of dollars)</i>	2019	2018
Agency deposits payable	\$133,591	\$123,468
Actuarial liability of annuities payable	20,689	19,939
Student loan deposits payable	4,823	5,537
Other deposits payable	9,461	5,799
Total deposits payable and actuarial liability of annuities payable	\$168,564	\$154,743

8. Bonds, Notes, and Other Debt Payable

Bonds, notes, and other debt payable as of August 31 are as follows:

<i>(in thousands of dollars)</i>	Interest-rate mode	Fiscal year maturity	Interest rate	2019	2018
Illinois Finance Authority (IFA)–Series 2004	Variable	2034	1.34% ^(a)	\$135,800	\$135,800
IFA–Series 2008	Variable	2046	1.30% ^(a)	125,000	125,000
Taxable–Series 2012	Fixed	2039–2047	4.20%	200,000	200,000
Taxable–Series 2013	Fixed	2015–2044	4.60% ^(b)	563,240	568,175
Taxable–Series 2015	Fixed	2038–2048	3.78% ^(b)	500,000	500,000
IFA–Series 2015	Fixed	2022–2028	4.24% ^(b)	128,545	128,545
Taxable–Series 2017	Fixed	2047–2057	3.72% ^(a)	500,000	500,000
Commercial paper (\$300,000 available)	Variable	2019	2.16% ^(b)	300,000	260,000
Promissory note	Fixed	2021	1.72% ^(c)	16,000	24,000
Lines of credit (\$750,000 available)	Variable	2019	2.55% ^(b)	85,000	115,000
Bonds, notes, and other debt payable subtotal				2,553,585	2,556,520
Unamortized issuance costs, premiums, and discounts, <i>net</i>				(2,021)	(1,384)
Total bonds, notes, and other debt payable, <i>net</i>				\$2,551,564	\$2,555,136

^(a) Interest rate reset weekly

^(b) Weighted average interest rate at August 31, 2019

^(c) Imputed rate on non-interest-bearing note

Total obligations including bonds, notes, and other debt payable at August 31, 2019, are scheduled to mature through August 31 of each period as noted at right. The schedule has been prepared based on the contractual maturities of the debt outstanding at August 31, 2019. Accordingly, if remarketings of variable rate debt offerings fail in future periods, debt repayments may become more accelerated than presented here. The potential failed remarketings coincide with the interest rate reset dates and amounts noted above.

Bonds Payable

During the year ended August 31, 2019, the University did not enter into the sale of any additional long-term municipal bonds or increase its long-term debt position. During the year ended August 31, 2018, the Taxable-Series 2017 Fixed Rate Bonds were issued to acquire, construct, and equip certain educational facilities of the University and to pay certain costs relating to the issuance of the bonds, subject to conditions set forth in a trust indenture between the University and Wells Fargo Bank, NA.

9. Endowments

Donor-restricted endowment funds are subject to Illinois's enacted version of the Uniform Prudent Management of Institutional Funds Act (UPMIFA). The University interprets UPMIFA as requiring that the fair value of the original donor-restricted endowment gift be preserved as of the gift date unless there are explicit donor stipulations to the contrary. Therefore, the University classifies the following as part of net assets with donor restrictions: the original value of gifts donated to the permanent endowment, the original value of subsequent gifts, and accumulations to the permanent endowment made in accordance with the applicable donor gift instrument at the time the accumulation was added to the fund. The remaining portion of the donor-restricted endowment fund is classified as net assets with donor restrictions until those amounts are appropriated for University

(in thousands of dollars)

2020	\$398,085
2021	13,450
2022	4,790
2023	6,660
2024	7,710
2025 and thereafter	2,122,890
Total	\$2,553,585

expenditure in a manner consistent with UPMIFA's standard of prudence. In accordance with UPMIFA, the University considers the following factors in determining whether to appropriate or accumulate donor-restricted endowment funds:

- The duration and preservation of the endowment fund
- The purposes of the institution and of the endowment fund
- General economic conditions
- Possible effects of inflation or deflation
- Expected total return from income and appreciation of investments
- Other resources of the institution
- The institutional investment policy

The University's endowment consists of about 2,800 individual donor-restricted endowment funds and about 1,000 funds it designates to function as endowments. The net assets associated with endowment funds, including funds designated by the University to function as endowments, are classified and reported based on whether there are donor-imposed restrictions. Institution-designated endowment funds include quasi-endowments established by specific Board of Trustees approval as well as endowments created by management under general guidelines and policies approved by the Board of Trustees.

The following tables present the endowment net asset composition by type of fund at fair value as of August 31:

<i>(in thousands of dollars)</i>	With donor restrictions				2019
	Without donor restrictions	Funds held in perpetuity	Accumulated gains (losses)	Total	
Institution-designated endowment funds	\$4,125,505				\$4,125,505
With donor restrictions					
Underwater funds		\$91,626	(\$2,891)	\$88,735	88,735
All other funds		1,587,979	2,442,599	4,030,578	4,030,578
Endowment assets at end of year	\$4,125,505	\$1,679,605	\$2,439,708	\$4,119,313	\$8,244,818

<i>(in thousands of dollars)</i>	With donor restrictions				2018
	Without donor restrictions	Funds held in perpetuity	Accumulated gains (losses)	Total	
Institution-designated endowment funds	\$4,229,710				\$4,229,710
With donor restrictions					
Underwater funds		\$4,706	(\$45)	\$4,661	4,661
All other funds		1,594,474	2,558,073	4,152,547	4,152,547
Endowment assets at end of year	\$4,229,710	\$1,599,180	\$2,558,028	\$4,157,208	\$8,386,918

Investment and Spending Policies

The University's endowment is primarily invested in the Long-Term Balanced Pool. The Investments Committee of the Board of Trustees annually reviews the asset allocation policy for the pool.

The principal objective for the Long-Term Balanced Pool is to preserve purchasing power and to provide a growing stream of income to fund University programs. On average, the pool seeks to achieve an annual total rate of return (i.e., actual income plus appreciation) equal to inflation plus actual spending. This objective of preserving purchasing power emphasizes the need for a long-term perspective in formulating both spending and investment policies.

The Board of Trustees has adopted a guideline for the annual spending rate from the University's Long-Term Balanced Pool. The calculation blends market and spending elements for the total annual spending rate.

The market element is an amount equal to 4.35 percent of the market value of a unit in the pool, averaged for the 12 months ended October 31 of the prior fiscal year. It is weighted at 30 percent in determining the total. The spending element is an amount equal to the current fiscal year's spending amount increased by 1.5 percent plus the actual rate of inflation. It is weighted at 70 percent in determining the total.

If investment income received is not sufficient to support the total-return objective, the balance is provided from realized and unrealized gains. If the income received is in excess of the objective, the balance is reinvested in the Long-Term Balanced Pool on behalf of the unit holders.

The University's policy is to reinvest the current income of all other investment pools.

Changes in Endowment Net Assets

The following tables represent changes in endowment net assets for the fiscal years ended August 31:

<i>(in thousands of dollars)</i>		2019		
	Without donor restrictions	With donor restrictions	Total	
Endowment net assets, beginning of year	\$4,229,710	\$4,157,208	\$8,386,918	
Net investment loss	(1,726)	(2,467)	(4,193)	
Net appreciation, realized and unrealized	61,129	87,396	148,525	
Total investment return	59,403	84,929	144,332	
Contributions	—	46,705	46,705	
Appropriation of endowment assets for expenditure	(173,127)	(173,387)	(346,514)	
Other changes				
Transfers to create institutional funds	34,589	—	34,589	
Transfers of institutional funds per donor requirement	—	4,046	4,046	
Spending of institution-designated endowment fund	(21,801)	—	(21,801)	
Other reclassifications	(3,269)	(188)	(3,457)	
Endowment net assets, end of year	\$4,125,505	\$4,119,313	\$8,244,818	

<i>(in thousands of dollars)</i>		2018		
	Without donor restrictions	With donor restrictions	Total	
Endowment net assets, beginning of year	\$4,041,786	\$3,905,788	\$7,947,574	
Net investment loss	(3,143)	(3,119)	(6,262)	
Net appreciation, realized and unrealized	337,549	334,864	672,413	
Total investment return	334,406	331,745	666,151	
Contributions	—	82,645	82,645	
Appropriation of endowment assets for expenditure	(167,459)	(165,526)	(332,985)	
Other changes				
Transfers to create institutional funds	49,811	—	49,811	
Transfers of institutional funds per donor requirement	—	9,874	9,874	
Spending of institution-designated endowment fund	(36,152)	—	(36,152)	
Other reclassifications	7,318	(7,318)	—	
Endowment net assets, end of year	\$4,229,710	\$4,157,208	\$8,386,918	

Underwater Endowment Funds

The University monitors endowment funds to identify those for which historical cost was more than fair value. As of August 31, 2019 and 2018, the historical cost of such accounts was approximately \$91.6 million and \$4.7 million, and the market value totaled \$88.7 million and \$4.7 million, respectively. Associated

unrealized losses of \$2.9 million and \$45 thousand as of August 31, 2019 and 2018, respectively, are recorded in the net assets with donor restrictions classification; subsequent gains increase net assets with donor restrictions.

10. Retirement Plans

The University maintains two contributory retirement plans for its eligible faculty and staff. The plans offer employees two investment company options, Teachers Insurance and Annuity Association (TIAA) and College Retirement Equities Fund (CREF), and certain mutual funds offered by Fidelity Investments. Participating employee and University contributions are immediately vested. The University contributed \$82.5 million and \$81.5 million to the two plans in 2019 and 2018, respectively.

The University currently sponsors a healthcare plan permitting retirees to continue participation on a “pay-all” basis; it has no liability for participants past age 65. The retiree contribution is based on the average per-capita cost of coverage for the plan’s entire group of active employees and retirees rather than the per-capita cost for retirees only. Retirees are also eligible to participate in certain tuition reimbursement plans and may receive a payment for sick days accumulated at retirement. Certain postemployment benefit plans are also sponsored.

The University funds the plan on a pay-as-you-go basis. The following table sets forth the postretirement plan’s obligations, benefits paid, contributions, net periodic postretirement benefit cost, and assets for the fiscal years ended August 31:

<i>(in thousands of dollars)</i>	2019	2018
Benefit obligation	\$13,663	\$15,924
Benefits paid	1,742	1,473
Employer contributions	1,059	816
Contributions from participants	683	656
Net periodic postretirement benefit cost	1,307	1,299
Fair value of plan assets	—	—

Service costs included in net periodic postretirement benefit cost above totaled \$806 thousand and \$891 thousand as of August 31, 2019 and 2018, respectively.

The changes in other than periodic benefit cost included in net assets without donor restrictions on the consolidated statements of activities totaled net gains of \$3.7 million and \$1.2 million as of August 31, 2019 and 2018, respectively, for an increase of \$2.5 million due to net gains during the fiscal year.

The University recognizes an asset or a liability in the consolidated statements of financial position for the plans’ overfunded or underfunded status. The asset or liability is the difference between the fair value of plan assets and the related benefit obligation, defined as the projected benefit obligation for post-employment benefit programs and the accumulated postretirement benefit obligation (APBO) for post-retirement benefit programs, such as a retiree health-care plan. In the consolidated statements of activities, the University recognizes actuarial gains or losses and prior service costs or credits that arise during the period but are not components of net periodic benefit cost. The University measures plan assets and obligations as of the date of its fiscal year end and makes specified disclosures for the upcoming fiscal year.

The accrued cost for postemployment benefits was \$8.5 million and \$9.8 million at August 31, 2019 and 2018, respectively, and is included in accounts payable and accrued liabilities on the consolidated statements of financial position.

The APBO was \$13.7 million and \$15.9 million at August 31, 2019 and 2018, respectively, and is included in accounts payable and accrued liabilities on the consolidated statements of financial position.

The following tables present key actuarial assumptions used in determining APBO as of August 31, 2019 and 2018. For both fiscal years 2019 and 2018, the ultimate healthcare cost trend rate was 5 percent, and the year when the trend rate will reach the ultimate trend rate was 2025.

Additional assumptions used to determine benefit obligations for the fiscal years ended August 31 were as follows:

	2019	2018
Weighted average settlement (discount) rate	2.6%	3.8%
Weighted average rate of increase in future compensation levels	2.5%	2.5%
Healthcare cost trend rate	6.5%	6.75%

Next, the assumptions used to determine net periodic benefit cost for the fiscal years ended August 31:

	2019	2018
Discount rate	3.8%	3.3%
Weighted average rate of increase in future compensation levels	2.5%	3.0%
Healthcare cost trend rate	6.75%	7.0%

A one-percentage-point change in assumed healthcare cost trend rates would have had these effects in fiscal year 2019:

<i>(in thousands of dollars)</i>	1% point decrease	1% point increase
(Decrease) increase in total of service and interest cost	(\$86)	(\$99)
(Decrease) increase in postretirement benefit obligation	(621)	699

Estimated future benefit payments reflecting anticipated service, as appropriate, are expected to be paid as shown below:

<i>(in thousands of dollars)</i>	
2020	\$822
2021	653
2022	751
2023	775
2024	792
2025–2028	4,443
Total	\$8,236

11. Related Parties

Members of the University's Board of Trustees, senior management, and faculty may on occasion be associated either directly or indirectly with entities doing business with the University. The University bylaws and conflict of interest policies establish guidelines for disclosure and regulation of such activities as circumstances warrant. When such associations exist, measures are taken, in the best interests of the University, to mitigate any actual or perceived conflict. Transactions with related parties may include investment management, common membership in

The University offers a deferred compensation plan under Internal Revenue Code 457(b) to a select group of management and highly compensated employees. There is no University contribution related to this deferred compensation plan. The University has recorded both an asset and a liability related to the deferred compensation plan that totaled \$94.8 million and \$89.3 million as of August 31, 2019 and 2018, respectively; these are included in investments and deposits payable and actuarial liability of annuities payable on the consolidated statements of financial position.

investment partnerships or other investment vehicles, and the purchase of goods or services.

Northwestern Medical Group (NMG) is a not-for-profit, multispecialty physician organization committed to providing clinical care to patients and to supporting the research and academic endeavors of Northwestern's Feinberg School of Medicine (Feinberg). NMG is governed by a board of directors, and its physicians are full-time faculty members or researchers at Feinberg. It is a subsidiary of Northwestern Memorial Healthcare Corporation

(NMHC), the not-for-profit parent corporation of Northwestern Memorial Hospital (NMH), which is the primary teaching hospital of Feinberg. As such, NMHC and NMG are related parties of the University. Under terms of agreements effective in fiscal year 2014 between the University, NMG, and NMHC, the University receives recurring contributions from NMHC to support the Feinberg research and education programs, basic and applied biomedical research facilities and programs, and research and educational support services.

As of August 31, 2019 and 2018, accounts receivable arising from support and operational activities with NMHC totaled \$15.7 million and \$19.3 million, respectively, and are included in accounts receivable on the consolidated statements of financial position. For the fiscal years ended August 31, 2019 and 2018, contributions totaling \$116 million and \$109.3 million, respectively, have been made from NMHC to the University and are included in private gifts on the consolidated statements of activities. For the fiscal years ended August 31, 2019 and 2018, revenues arising from operational activities with NMHC totaled \$32.4 million and \$24.4 million, respectively, and are included in professional fees and sales and services on the consolidated statements of activities.

12. Self-Insurance Reserves and Other Contingencies

Reserves for losses under the University's self-insurance program, aggregating \$11.5 million and \$8.3 million at August 31, 2019 and 2018, respectively, include reserves for probable known losses and for losses incurred but not yet reported. The reserves are presented on a discounted basis. The discount rate was 7.5 percent in fiscal years 2019 and 2018. Self-insurance reserves are based on estimates of historical loss experience, and while management believes that the reserves are adequate, the ultimate liabilities may be more or less than the amounts provided. These reserves are included in accounts payable and accrued liabilities on the consolidated statements of financial position.

Under an agreement in effect through fiscal year 2013 between the University and NMG, a proportionate share of primary medical professional liability costs that arise out of events prior to November 1,

2004, was borne by NMG. As a part of the clinical integration agreement between NMG, NMHC, and the University, signed September 1, 2013, any remaining liabilities related to the period prior to November 1, 2004, are the obligations of the University and included in the reserves, beginning in fiscal year 2014, for losses noted above.

In August 2009, the University, as originating lender, began participation in a student loan securitization program. It sold student loans to a school trust totaling \$65 million in 2009, \$19.8 million in 2010, and \$22.5 million in 2012; the University issued University-guaranteed notes, which were purchased by a funding trust that procures financing to support the lending program. The programs are managed to break even and generate no servicing assets or liabilities. Guaranteed notes under these programs totaled \$8.3 million and \$13.2 million as of August 31, 2019 and 2018, respectively. These loans, net of reserves, are included in notes receivable and deposits payable on the consolidated statements of financial position.

In October 2013, the University purchased a \$61 million portfolio of private education loans from a lending agency; these loans were purchased by the lending agency from the University prior to 2009 and were serviced by the University. As of August 31, 2019 and 2018, respectively, these loans totaled \$11.7 million and \$18.9 million, and are included in notes receivable, net of reserves, on the consolidated statements of financial position. The University continues to service the repurchased loans.

From time to time, various claims and suits generally incidental to the conduct of normal business are pending or may arise against the University. It is the opinion of management of the University, after taking into account insurance coverage, that any losses from the resolution of pending litigation should not have a material effect on the University's financial position or results of operations.

All funds expended in connection with government grants and contracts are subject to audit by government agencies. While any ultimate liability from audits of government grants and contracts by government agencies cannot be determined at present, management believes that it should not have a material effect on the University's consolidated financial position or results of operations.

13. Grants and Contracts

Grants and contracts for the fiscal years ended August 31 are summarized on the consolidated statements of activities as follows:

<i>(in thousands of dollars)</i>	2019	2018
Federal grants	\$518,244	\$484,398
Private grants and contracts	174,477	159,565
State grants	3,831	4,045
Total grants and contracts	\$696,552	\$648,008

Indirect cost recovery on federal grants and contracts is based on an institutional rate negotiated with its cognizant federal agency, the United States Department of Health and Human Services.

14. Liquidity and Availability

Financial assets and resources available within one year of August 31, 2019, for general expenditure are as follows:

<i>(in thousands of dollars)</i>	2019
Financial assets	
Cash and cash equivalents	\$155,469
Accounts receivable, net	199,535
Notes receivable	23,109
Contributions receivable	57,392
Investment return for operations	471,000
Financial assets available within one year	906,505
Liquidity resources	
Commercial paper	—
Bank lines of credit	665,000
Total financial assets and liquidity resources available within one year for general expenditure	\$1,571,505

The University manages liquidity by structuring its financial assets to be available as its operating expenses, liabilities, and other obligations come due. Working capital funds, which are generated through the temporary differences between operating receipts and disbursements, are held in a variety of money market instruments or, if not needed within 90 days, are invested in the Long-Term Balanced Pool. The income from investing them is used for general operating purposes.

In addition, the University may place commercial paper under a \$300 million Taxable Commercial Paper Note. There were outstanding borrowings of \$300 million under this agreement as of August 31, 2019.

The University also may draw \$750 million in standby lines of credit to supplement working capital requirements. There were outstanding borrowings of \$85 million under this agreement as of August 31, 2019.

Lastly, the University holds institution-designated endowments of \$4,126 million as of August 31, 2019. Although the University does not intend to spend from its institution-designated endowment funds—other than amounts appropriated for spending through its annual budget approval and appropriation process—amounts from its institution-designated endowment could be made available if necessary, subject to liquidity of the underlying investments.

15. Functional Classification of Expenses

Expenses by functional categories reflect salaries, wages, benefits, goods, and services used for those specific purposes. The University has allocated functional expenses for depreciation and interest on indebtedness to other functional categories based on the functional use of space on the University's campuses.

Operating expenses incurred in the fiscal years ended August 31 were as follows:

<i>(in thousands of dollars)</i>				<i>2019</i>
	Academic	Research	Support	Total
Salaries, wages, and benefits	\$914,581	\$278,335	\$246,243	\$1,439,159
Services, supplies, maintenance, and other	566,670	193,503	59,993	820,166
Depreciation	111,854	40,342	12,946	165,142
Interest on indebtedness	58,740	21,185	6,799	86,724
Total	\$1,651,845	\$533,365	\$325,981	\$2,511,191

<i>(in thousands of dollars)</i>				<i>2018</i>
	Academic	Research	Support	Total
Salaries, wages, and benefits	\$890,686	\$268,132	\$261,713	\$1,420,531
Services, supplies, maintenance, and other	552,254	179,423	87,595	819,272
Depreciation	101,442	39,356	9,934	150,732
Interest on indebtedness	46,201	17,923	4,524	68,648
Total	\$1,590,583	\$504,834	\$363,766	\$2,459,183

16. Subsequent Events

The University has evaluated subsequent events in accordance with the FASB ASC Subsequent Event Topic through December 20, 2019, the date when the consolidated financial statements were issued. The University did not identify any events to be disclosed.



Northwestern University is committed to providing a safe environment free from discrimination, harassment, sexual misconduct, and retaliation. To view Northwestern's complete nondiscrimination statement, see www.northwestern.edu/hr/equopp-access/equal-employment-opportunity, and for crime and safety data, see www.northwestern.edu/up/safety/annual-report. © 2020 Northwestern University. All rights reserved. Produced by Global Marketing and Communications.

NORTHWESTERN UNIVERSITY
 Supplementary Schedule of Expenditures of Federal Awards
 Year ended August 31, 2019

Cluster title/Federal grantor/Subagency/Project title	Pass-through ID number	CFDA	Sponsor award number	Federal expenditures	Passed-through to subrecipient
Research and Development Cluster:					
Department of Agriculture:					
The Effect of the Opioid Crisis on the Farm Sector: Implications from the Rural Economy	225	10.310	SUB00001814//2019-67023-29347	\$ 7,264	—
Research Strategy to understand the impacts and impact pathways of food, agricultural and nutrition policies in Feed the Future (FIF) countries	176	10.960	PO#639288/6156//TA-CA-15-008-06	8,493	—
National Institute of Food and Agriculture					
The Family Check-Up 4 Health: A Family-Centered Health Maintenance Approach to Improve Nutrition and Prevent Obesity in Early Childhood	18	10.310	ASUB22//2018-68001-27550	51,144	—
A defensible, next generation approach to quantifying and characterizing land use change		10.312	2018-10008-28530	69,508	—
Department of Agriculture Total				136,409	—
Department of Commerce:					
National Institute of Standards and Technology					
National Institute of Standards and Technology		11.609	70NANB14H012 Amd 6	2,655,722	554,653
Advanced Materials Center for Excellence: Center for Hierarchical Materials Design (CHiMaD)		11.609	70NANB19H005	1,692,992	169,891
Comprehensive Survey of Federal Government Conformity Assessment Activities		11.609	70NANB18H286	131,032	—
High-fidelity and reduced order models to investigate the thermal history and residual stress for powder bed fusion processes		11.609	70NANB17H283	34,114	—
				4,513,860	724,544
NIST SURF Gaithersburg		11.620	70NANB18H075-1	(2,552)	—
United States Patent and Trademark Office:					
A 4D Nanoprinter for Making and Manipulating Macroscopic Materials	12.800		FA9550-16-1-0150-P00005	1,467,423	345,231
A Biophysical Approach to Uncover the Role of Cell Membrane Mechanics in Sensing Mechanical Force	12.800		FA9550-19-1-0039	39,535	—
Biomimetic Lipid Nanoparticles: Bio-Sensing and Bio-Functional Applications	12.800		FA9550-13-1-0192	35,160	—
Colloidal Metal Chalcogenide Quantum Dots as Photo-Redox Catalysts for Model Reactions Relevant to the Formation of Liquid Fuel	12.800		FA9550-17-1-0271-P00002	195,031	—
Composite Soft Materials with Decentralized and Distributed Actuation	12.800		FA9550-18-1-0493	473,108	235,471
Convergent Evolution to Engineering: Multiscale Structures and Mechanics in Damage Tolerant Functional Bio-composite and Biomimetic Materials	215	12.800	S-000700 Amd 07 // USAF FA9550-15-1-0009	95,655	—
Discovering the Extent of Estimable Prediction in Science and Technology (DEEP)	219	12.800	FP059116-B // FA9550-15-1-0162	41,013	—
DURIP: Four-Dimensional Electronic Raman Spectroscopy for Elucidating Coupled Energy Transfer Processes in Nanomaterials		12.800	FA9550-18-1-0418	156,197	—
Electrochemical Imaging and Mechanistic Studies on the Nanometer Scale		12.800	FA9550-14-1-0003-P00006	1,401,803	626,705
Electronic Structure Theory for Spin-Forbidden Reaction Dynamics		12.800	FA9550-18-1-0252	51,575	—
Fundamental Dynamics, Predictability, and Uncertainty of Scientific Discovery & Advance		12.800	FA9550-19-1-0354	36,344	—
Investigation of Experimental and Theoretical Challenges for Developing Superluminal Sensors		12.800	FA9550-18-1-0401	196,958	—
Low-dimensional materials for high-efficiency/high-power nonlinear optical applications at infrared		12.800	FA9550-19-1-0243	28,874	—
Merging reactivity and properties: photocontrolled synthesis of π -conjugated polymers		12.800	FA9550-18-1-0159	93,689	—
Modeling and Predicting Individual Scientific Impact		12.800	FA9550-17-1-0089 P00002	263,259	—
Molecular Ion Quantum Control		12.800	FA9550-17-1-0352-P00002	240,372	—
MURI Center for Dynamic Magneto-optics	242	12.800	23003023213 // FA9550-14-1-0040 05	193,100	—
MURI: Unraveling the Biology, Chemistry and Nanoscience of Natural and Synthetic Melanins	216	12.800	104170196//FA9550-18-1-0142	226,686	—
Novel Materials for Transverse Peltier Refrigeration		12.800	FA9550-15-1-0377 P00005	317,379	—
PECASE: Multi-dimensional Vibrational-Electronic Spectroscopy to Probe Electronic-to-Vibrational Energy Transfer in Hybrid Nanomaterials		12.800	FA9550-16-1-0379-P00003	215,779	—
Reconfigurable Matter from Programmable Atom Equivalents		12.800	FA9550-17-1-0348-P00002	964,514	—
Rotation, Shift and Scale Invariant Ultrafast Automatic Image Recognition Using an Opto-Electronic Correlator		12.800	FA9550-18-1-0359 P00001	232,507	—
Soft Chemical Approaches to the Synthesis of Metastable Materials		12.800	FA9550-17-1-0247-P00001	191,660	—
Soft Materials for Flexible, Stretchable Hybrid Electronics		12.800	FA9550-18-1-0320-P00001	219,152	—
Stochastic Self-Consistent Clustering Theory for Composite Performance Prediction: from extreme value microstructure attributes to design of interphase for toughness	66	12.800	313-0866 // FA9550-18-1-0381	78,825	—
The Production and Study of Antiprotons and Cold Antihydrogen	93	12.800	134078-5111564//FA9550-15-1-0275	149,324	—
Towards Software Apprentices that Learn in Dynamic Domains		12.800	FA9550-16-1-0138-P00003	316,175	—
				7,921,097	1,207,407
Chip-Scale Superluminal IMU Using Rubidium Atoms and Integrated Photonics	64	12.RD	FA9550-18-P-0003	43,267	—
Department of Commerce Total				12,475,672	1,931,951
Department of Defense:					
Enhancing Quality of Orthotic Services with Process and Outcome Information	166	12.420	Agmt 12/19/16//W81XWH-16-1-0788	51,923	—
"Rational design and implementation of novel polymer adsorbents for selective uptake of per- and polyfluoroalkyl substances from groundwater"	58	12.RD	82296-11070//W312HQ18C052	123,824	—
Drinking Water Treatment Residuals as Material for in-situ Capping of Metal Contaminated Sediments	225	12.RD	UFDSP00012338//W912HQ18C0039	21,236	—
GDIT's Defense and Veterans Brain Injury Center (DVBIC) contract No. W91Y1TZ-13-C-015	242	12.RD	W91Y1TZ-13-C-0015//3004730431	40,631	—
iGRAB: Innovative Glove for Rehabilitation and Assistance using Biomimicry	127	12.RD	W81XWH-16-C-0012	66,758	21,549
Scientific Autonomous Reasoning Agent (SARA) integrating Materials Theory, Experiment and Computation	58	12.RD	80776-11044-01//FA9550-18-1-0136	296,573	—

NORTHWESTERN UNIVERSITY
 Supplementary Schedule of Expenditures of Federal Awards
 Year ended August 31, 2019

Cluster title/Federal grantor/Subagency/Project title	Pass-through ID number	CFDA	Sponsor award number	Federal expenditures	Passed-through to subrecipient
Department of Defense (continued):					
Air Force Research Laboratory:					
Center of Excellence for Advanced Bioprogrammable Nanomaterials (C-ABN)		12.800	FA8650-15-2-5518 P00014/P00015/P00016	\$ 1,149,576	27,336
Development of a Targeted Intravascular Therapy to Stop Non-Compressible Torso Hemorrhage	221	12.800	010635-005/FA8650-17-2-6G19 Mod 3	414,939	—
Managing the Mosaic of Microstructure	37	12.800	1150119-294722-P00007//FA9550-12-1-0458	3,199	—
				<u>1,567,714</u>	<u>27,336</u>
High-speed Low-noise Short-wavelength Infrared Type-II Superlattice Heterojunction Phototransistor		12.910	FA8650-18-1-7810 P00001	237,750	—
Enterprise APT Detection and Forensics with Provenance Graphs	113	12.RD	PO 5005278420 00001 // FA8650-15-C-7561	156,961	—
Ptychography-based Rapid Imaging of Nano-Structures with Multi-layer Assemblies (PRISMA)	253	12.RD	No. 86101156 Amd 1 // FA8650-17-C-9112	39,004	—
Army:					
A novel serum and tissue immunoglycomic biomarker panel to distinguish progressive Prostate Cancer		12.420	W81XWH-17-1-0642	121,898	—
Assessing high affinity anti-latent TGFbeta binding protein-4 antibodies in combination with steroid treatment for DMG		12.420	W81XWH1810244	170,367	—
Autism-Associated Mutations in L-Type Ca2+ Channels		12.420	W81XWH1810777	85,001	—
Autism-Associated Mutations in L-Type Ca2+ Channels		12.420	W81XWH1810778	50,489	—
Beta-Blockers for the Prevention of Acute Exacerbations of COPD		12.420	000507860-008//W81XWH-15-1-0705	140,196	—
Characterization of clustered CTCs to eliminate breast cancer metastasis	206	12.420	W81XWH-16-1-0021	223,172	—
Combination of IL13Ralpha2 CAR T cell therapy with PD-1 immune checkpoint blockade for treatment of glioblastoma		12.420	W81XWH-17-1-0411	112,929	—
Combinational Targeting EZH2 and PARP1 in Prostate Cancer		12.420	W81XWH-17-1-0357	144,234	—
Comprehensive Molecular Profiling of African-American Prostate Cancer to Inform on Prognosis and Disease Biology	242	12.420	3003962014/W81XWH-15-1-0661	6,131	—
Connecting Mechanical to Biomechanical Performance of Prosthetic Feet to Design Customized, Passive Devices that Provide Improved Mobility	130	12.420	123775/W81XWH-17-1-0427	53,709	23,621
Creation and validation of a pre-biopsy nomogram for predicting high-risk prostate cancer in African American men		12.420	W81XWH-17-1-0608	208,584	43,735
D-Cycloserine for the Treatment of Chronic, Refractory Low Back Pain		12.420	W81XWH-17-1-0426	816,112	—
Development of an Engaging Training Tool to Provide Superior Muscle Computer Interfaces for Rehabilitation of Neuromusculoskeletal Injuries	166	12.420	Sub No. 4471 CC81932/W81XWH-15-2-0035	41,327	—
Discovery of Novel Therapeutics for Disordered Sleep in Fragile X Syndrome		12.420	W81XWH1810594	140,833	—
Effect of a Novel Intervention using Daily Intermittent Hypoxia and High-Intensity Training on Upper Limb Function in Individual with Spina Cord Injury	166	12.420	SC160072//W81XWH-17-1-0340	22,614	—
Enhancing Anti-CTLA4 Immunology Therapy for Prostate Cancer with Cotargeting Soluble NKG2D Ligand		12.420	W81XWH-15-1-0406	101,588	—
Epigenomic Priming as an Immunotherapy Enhancer in Ovarian Cancer		12.420	W81XWH-17-1-0141	316,967	—
Flexible Epidermal Electrodes for Intuitive Control of Powered Arm and Leg Prostheses	166	12.420	7242 // W81XWH1810668	117,747	—
Formulations and anti-scar-efficacy testing of topical statins in preclinical and clinical models		12.420	W81XWH1910121	23,247	—
Functional Performance Evaluation of the Northwestern University Flexible Sub-Ischial Vacuum (NU-FlexSIV) Socket for Persons with Transfemoral Amputation		12.420	W81XWH-15-1-0708	327,664	106,344
Harnessing Druggable Synthetic Lethal Interactions in Triple-Negative Breast Cancer with Elevated MYC Expressor		12.420	W81XWH1810053	412,791	—
Hyperexcitability in Sensory Circuits in Fragile X Syndrome		12.420	W81XWH-17-1-0230	264,830	—
Immune control of triple negative breast cancer by WEE1 inhibition		12.420	W81XWH1910106	36,875	—
Increasing Bone Mass and Bone Strength in Individuals with Chronic Spinal Cord Injury: Maximizing Response to Therapy		12.420	W81XWH-16-1-0763	165,051	93,438
Inhibiting Prostate Cancer Cell Motility	158	12.420	1007494_NWU Amd 2 // W81XWH-15-1-0527	(186)	—
Investigating Long Noncoding RNAs as Biomarkers and Mediators of Prostate Cancer Progression in African American Men	217	12.420	10358sc//W81XWH-17-1-0302	46,161	—
Investigation of Genetic and Immune Mechanisms of Response to BCG for Non-Muscle Invasive Bladder Cancer: a Translational Study of S1602		12.420	W81XWH1810257	102,406	10,432
In-vivo functional muscle regeneration utilizing an implantable modular bioreactor	277	12.420	WFUHS 441082 CF-12//W81XWH-14-2-0004	128,802	760
Locally applied statins to reduce scarring	277	12.420	WFUHS441012 SR-02//W81XWH-13-2-0054	4,256	—
Longitudinal Observation of Myoelectric Upper Limb Orthosis Use among Veterans with Upper Limb Impairment		12.420	W81XWH-16-1-0733	158,080	132,309
Loss of ZDHHC-mediated Scribble palmitoylation disrupts cell polarity and promotes prostate cancer progression		12.420	W81XWH-17-1-0362	176,788	—
Macrophage Responses to Epithelial Dysfunction Promote Lung Fibrosis in Aging		12.420	W81XWH-15-1-0214	225,135	52,833
Macrophage Responses to Epithelial Dysfunction Promote Lung Fibrosis in Aging		12.420	W81XWH-15-1-0215	51,320	—
Neuromodulation and Neurorehabilitation for Treatment of Functional Deficits after mTBI + PTSD	44	12.420	Pape-0024//W81XWH-15-1-0516	20,431	—
No Longer Smooth: Introducing Striations into Prosthetic Socket Construction to Improve Suspension, Rotation, Fit and Comfort		12.420	W81XWH-16-1-0485	253,649	93,434
Patient-Centered Treatment Decision-Making in Advanced Prostate Cancer		12.420	W81XWH-16-1-0554	104,916	—
Peer-led Suicide Prevention: Promoting Healthy Family Role Transitions for Military Personnel	252	12.420	416496-G//W81XWH-14-1-0322	159,977	—
Personalized Mobility Interventions Using Smart Sensor Resources for Lower-Limb Prosthesis Users	166	12.420	7197 cc82196//W81XWH1820057	10,199	—
Prevention of Bone Loss after Acute SCI by Zoledronic Acid: Durability, Effect on Bone Strength and Use of Biomarkers to Guide Therapy		12.420	W81XWH-14-2-0193	315,893	51,351
Protein Aggregation Inhibitors for ALS Therapy		12.420	W81XWH-10-1-0536	(358)	(358)
Restoring pancreatic endocrine function via autologous islet transplantation to the omentum		12.420	W81XWH1910230	3,722	—
Role of C10orf112 in Prostate Cancer		12.420	W81XWH-17-1-0578	226,159	—
rTMS: A Treatment to Restore Function after Severe TBI	44	12.420	Pape 0020//W81XWH-14-1-0568	(8,812)	—
SERS Nanosensors for in vivo Glucose Sensing		12.420	W81XWH-16-1-0375	230,140	—
SERS Nanosensors for in vivo Glucose Sensing		12.420	W81XWH-16-1-0376	132,730	—
Sleep homeostasis and synaptic plasticity		12.420	W81XWH-16-1-0169	(9,151)	—
Stem Cell Regeneration of Human Spiral Ganglion Neurons toward Hearing Restoration		12.420	W81XWH1810752	190,072	34,964
T Cell Receptor Repertoire Analysis as a Biomarker for Predicting Graft Rejection in Transplant Recipients		12.420	W81XWH-17-1-0679	338,406	—
Targeted reinnervation as a means to treat neuromas associated with major limb amputation		12.420	W81XWH-13-2-0100	615,434	27,376

NORTHWESTERN UNIVERSITY
 Supplementary Schedule of Expenditures of Federal Awards
 Year ended August 31, 2019

Cluster title/Federal grantor/Subagency/Project title	Pass-through ID number	CFDA	Sponsor award number	Federal expenditures	Passed-through to subrecipient
Department of Defense (continued):					
Targeting Balance Confidence as a Strategy to Increase Integration and Improve Outcomes in Users of Lower-limb Prostheses	174	12.420	322801NWU/W81XWH-17-1-0697	\$ 48,030	—
Targeting EZH2 in castration-resistant prostate cancer	12.420	12.420	W81XWH-17-1-0405	206,819	—
Targeting EZH2 in castration-resistant prostate cancer	12.420	12.420	W81XWH-17-1-0406	269,776	—
The Impact of a Gene Expression Profile on Treatment Choice and Outcome Among Minority Men Newly Diagnosed with Prostate Cancer: A Randomized Trial	12.420	12.420	W81XWH-15-1-0534	19,690	—
The Role of mDia1 in the Aberrant Innate Immune Signaling in del(5q) Myelodysplastic Syndromes	12.420	12.420	W81XWH-15-1-0335	(8,949)	—
Therapeutic Sleep for Traumatic Brain Injury	12.420	12.420	W81XWH-16-1-0166	(9,027)	—
TOWARDS CHIMERIC ANTIGEN RECEPTOR TRANSGENIC T CELL THERAPY FOR TUBEROUS SCLEROSIS COMPLEX	12.420	12.420	W81XWH1810479	259,298	—
Transient implantable nerve stimulator for enhancing regeneration across long segmental peripheral nerve defects	278	12.420	WU-19-170 // W81XWH1810170	145,365	—
Ubiquitin pathway activation: A new strategy for treating ALS	12.420	12.420	W81XWH-17-1-0086	319,324	—
Uncovering the circulating factor in FSGS	12.420	12.420	W81XWH1810748	39,110	—
Understanding and Supporting Public Information Needs about VCA Donator	12.420	12.420	W81XWH1810780	126,579	—
Why does acute post whiplash injury pain transform into chronic pain? Multi-modal assessment of risk factors and predictors of pain chronicity	192	12.420	2018883-NWU/W81XWH-15-1-0603	7,778	—
Women's-Specific Footwear with Prosthetic Feet	96	12.420	4182/W81XWH-17-2-0072 / PO 930293	30,223	—
				9,034,441	670,239
10.4: Properties Controlling Synchronization in Networks of Dynamical Systems		12.431	W911NF-15-1-0272-P00003	48,830	—
3D Mesostructures as Active Interfaces to Individual Neurons in 3D Neural Networks		12.431	W911NF-19-2-0169	19,109	—
3D Printing SBIR Ph II	74	12.431	PO 12909/W912HZ17C0028	125,801	—
7.4 Reactive Chemical Systems: Assembly and Dynamics of Soft Matter Observed by Liquid Cell TEM		12.431	W911NF-17-1-0326 P00002	200,742	11,541
7.4 Reactive Chemical Systems: New Principles for Targeting and Triggering based on Molecular Self-Assembly in Topological Defects of Liquid Crystals	266	12.431	776K031 // W911NF-17-1-0575	29,341	—
7.4 Reactive Chemical Systems: New Principles for Targeting and Triggering based on Molecular Self-Assembly in Topological Defects of Liquid Crystals	58	12.431	88469-11208/W911NF190071	46,096	—
Ab initio design of noncentrosymmetric metals: crystal engineering in oxide heterostructures. f. Research Area 6: Physics	12.431	12.431	W911NF-15-1-0017 P00006	153,457	—
Autonomous Error Protection in Superconducting Circuits	162	12.431	SUB0000078 Amd. 5 // W911NF1510421	52,836	—
Bridging Dynamic Particle Fracture and High-Strain Rate Communion of Granular Continuum	12.431	12.431	W911NF-18-1-0035 P00002	90,578	—
Center for Advanced 2D Organic Networks	58	12.431	76091-11011/W911NF-15-1-0447	485,901	—
Collective impact and common goals: Planned vs. emergent networks as tools for leveraging community outcomes	12.431	12.431	W911NF-16-1-0464-P00005	142,770	—
Directed Rational Synthesis of Kagome Lattices for the Discovery of Emergent Materials	9.3 Physical Properties of Materials	12.431	W911NF-18-1-0006	77,362	—
Dynamics of Nanoscale Self-Assembled Porous Materials	216	12.431	109714421/W911NF1810359 S9002254	55,259	—
Energy Conversion from Flowing Salinity Gradients over Nanoscale Metal Layers	12.431	12.431	W911NF1910361	167,896	—
Engineering nanoscale protein containers	12.431	12.431	W911NF-16-1-0169 P00004	(69)	—
Engineering the translation apparatus for the synthesis of electronically active sequence-defined polymers	12.431	12.431	W911NF-16-1-0372	2,140,525	1,421,253
Exploring Sketching as a Modality for Intelligent Tutoring Systems: Adaptive and Intelligent Training Technologies, Paragraph 4.2.1, page 6f	12.431	12.431	W911NF-17-2-0054-P00002	224,276	—
Failure Probability and Safety Gain of Super-Strong Biomimetic Nacreous Materials	12.431	12.431	W911NF-19-1-0039-P00001	78,724	—
Forecasting Emergent Phenomena with Human Computer Collaboration	169	12.431	A12789 001 // W911NF-16-1-0524	14,001	—
Handling Adverse Visual Conditions for Target Tracking and Recognition	12.431	12.431	W911NF-16-1-0138 P00006	123,159	—
i1i : Interfacial synthesis of 2D copolymers directed by noncovalent interactions	12.431	12.431	W911NF1910154	17,071	—
II.A.1.b.ii.2: Engineering Nanocellulose Materials for High Ballistic Impact Performance	12.431	12.431	W911NF-17-1-0430 P00001	114,521	—
II.A.1.b.iii.3: Coupling Magnetic and Ferroelectric Phenomena in Designed 2D Thio- and Selenophosphate Crystals	12.431	12.431	W911NF1910335	30,807	—
Material Synthesis Toward Design Rules for Capture and Sensing of Toxic Chemicals	12.431	12.431	W911NF-18-2-0074	42,535	—
Mechanisms of Extracellular Matrix-Mediated Electrochemical Signaling	12.431	12.431	W911NF-19-1-0136-P00001	49,320	—
MOCVD growth of LWIR InAs/InAsSb Type-II superlattices for focal plane array applications	12.431	12.431	W911NF1810402	128,136	—
Multisensory Integration by Circadian Clocks - Area 3 Mathematics (Biomathematics) and Area 8 Life Sciences (Neurophysiology)	244	12.431	W911NF-16-1-0584 P00008	167,589	35,956
New Theoretical and Experimental Methods for Predicting Fundamental Mechanisms of Complex Chemical Processes	12.431	12.431	C00045065-5/W911NF-14-1-0359	152,628	—
Physically-based tempered fractional-order operators for efficient multiscale simulations	12.431	12.431	W911NF-15-1-0569 P00001	101,235	—
Precision Chemical Dynamics and Quantum Control of Ultracold Molecular Ion Reactions	214	12.431	1000 G SA978 Amd 4 // W911NF-14-1-0378	37,091	—
Predicting and Controlling the Response of Particulate Systems through Grain-Scale Engineering	34	12.431	S428657/W911NF1910245	32,095	—
QUANTA: Quantitative Network-based Models of Adaptive Team Behavior	218	12.431	KK1623-08/W911NF-15-10577-P00009	107,500	—
Quantum Disc-based Focal Plane Arrays for Low-cost High-performance Uncooled LWIR Imaging	12.431	12.431	W911NF-16-1-0410 P00005	355,394	—
Real Time Terahertz Heterodyne Imaging System	193	12.431	Agmt 11/21/2017 // W911NF-17-P-0017	503	—
Realizing High-Fidelity Gates in Protected Qubits	162	12.431	SUB0000298/W911NF1910016	36,298	—
Sea Urochin Spicules: Assembly of a Fracture-Toughened Material at the Nano- and Mesoscales	147	12.431	F8595-01-03/W911NF-16-1-0262	21,206	—
Selective Laser Melting of Ni-based superalloys with combined precipitation- and oxide-dispersion-strengthening	12.431	12.431	W911NF-18-1-0129/P00002	357,521	147,747
Sensitivity and Non-Normality in Network Control and Failure Propagation	12.431	12.431	W911NF1910383	30,571	—
Specifically Triggerable Multi-Scale Responses in Organized Assemblies	236	12.431	16 008956 E 00/W911NF-15-1-0568-P00008	175,851	—
Stabilization of Reactive Chemical Species and Fundamental Studies of Small-Molecule Reactivity in Metal-Organic Frameworks	12.431	12.431	W911NF-14-1-0168/P00010	178,090	—
Stimuli-Responsive Control of Protein-Based Molecular Structure	12.431	12.431	W911NF-18-1-0200-P00002	936,223	40,123
Strong Electron-Photon Coupling using Plasmonic Light Compressors	12.431	12.431	W911NF-11-1-0390 P00011	13,799	—
The impact of organizational strategy on performance of in vitro biosynthesis reactions	12.431	12.431	W911NF-19-1-0298	34,786	—
Towards the Synthesis of Zirconium-based Metal-Organic Frameworks in Water at Room Temperature	12.431	12.431	W911NF-18-1-0050	36,446	—

NORTHWESTERN UNIVERSITY
 Supplementary Schedule of Expenditures of Federal Awards
 Year ended August 31, 2019

Cluster title/Federal grantor/Subagency/Project title	Pass-through ID number	CFDA	Sponsor award number	Federal expenditures	Passed-through to subrecipient
Department of Defense (continued):					
Tribological and Manufacturing Technologies for Unmanned Aerial Systems		12.431	W911NF1920092	\$ 39,261	—
Ultra-low Energy Receivers based on Electron-Injection Detectors on a CMOS Unified Photonic Integration Platform		12.431	W911NF1810429-P00003	162,972	—
Wireless, bioresorbable neural stimulators for discovery in neuroscience		12.431	W911NF1810394	95,253	—
				<u>7,731,296</u>	<u>1,656,620</u>
Coevolution of Dynamic Multi-genre Networks and Information Streams	24	12.630	9500012803/Job13765353/W911NF-09-2-0053 Mod. 16	104,414	—
OSCM: An Operating System for Cyberphysical Manufacturing	230	12.630	082621-16134 AE887 00 // W31P4Q1420001	60,715	—
Rate Effects in the Deformation of Microscale Metallic Samples – Experiments and Simulations	118	12.630	PO #2004091092/W911NF1220022	115,143	—
The Signatures of Success in Human-Agent Teams		12.630	W911NF1920140	2,618	—
				<u>282,890</u>	<u>—</u>
Syntaurus: An intelligent machine for chemical synthetic planning	92	12.910	W911NF-16-1-0384	376,709	—
Industrial Production Methods for Ultra-High-Strength Fibers Based on Double-Walled Carbon Nanotubes	131	12.RD	Agmt 12/4/15 Amd 1//W912HZ-15-C-0004	13	—
LDPM SBIR Ph III	74	12.RD	PO 12749//W912HZ17C0027	73,443	—
Network Sciences Collaborative Technology Alliance	24	12.RD	PO# LBN9510212-0034 // W911NF-09-2-005	100,374	—
Realization of a High Power MWIR Laser Using Coherent Combination of Emitters	64	12.RD	Agmt 10/10/2017 // W56KGY-17-C-0010	1,080	—
Response to RFP for the US Army Research Laboratory Assessing Human Variability in Real-World Environments in support of the DCS Prime Contract W911NF-10-D-0002-0028, Task 28	61	12.RD	PO# 190035 APX03-S026 // W911NF-10-D-0002	103,665	—
RFQ for Silver Bullet Program	150	12.RD	PO 8200206547 01 // W911NF-17-C-0024	86,303	—
Scaling & Supramolecular Engineering of Metal-Organic Frameworks (MOFs)	154	12.RD	A15A-T014/W911SR18C0031	129,845	—
Assistant Secretary of Defense for Health Affairs:					
Top Down Proteomics of Laser Capture Microdissected Samples for the Cancer Moonshot	96	12.750	4834, PO 963971//HU0001-18-2-0032	14,944	—
Defense Advanced Research Projects Agency:					
Flexible Asynchronous Space-Time (FAST) Imaging		12.910	HR0011-17-2-0044-P00004	297,669	—
Generation of Mouse-Based Bioelectronic Noses - Phase 2	148	12.910	15-AO-00-005162-01//HR0011-16-2-0007	82,858	—
Information Storage and Processing Using Time-Ordered Strings of Molecules, and Molecular Processes	93	12.910	130368-511189/W911NF-18-2-0030	86,260	—
Programmable Multiplexed Droplets and Arrays Containing Reaction Networks	266	12.910	798K081/W911NF-18-2-0036	379,302	—
Targeted Neuroplasticity Training to Accelerate Complex Skill Learning	256	12.910	1604551 // N66001-17-2-4011	143,189	—
				<u>989,278</u>	<u>—</u>
ACCESS – Agent-based Causal simulator with Cognitive, Environmental, and Social System factors	24	12.RD	PO#4201766990 14811 // HR001118C0022	42,420	—
AlGaN for Solar-Blind Avalanche Photo Detectors	152	12.RD	Agmt 6/18/19/W911NF-19-C-0025	1,632	—
Nano Engineered Thermoelectric Systems (NETS) for Lightweight Portable Primary/Secondary Power Sources	276	12.RD	450391-19980-09//HR0011-16-C-0035	(34,035)	—
Obtaining Multipath & Non-line-of-sight Information by Sensing Coherence & Intensity with Emerging Novel Techniques	187	12.RD	G001534-7505 // HR0011-16-C-0028	155,860	—
Stable neural interfaces through artificial intelligence-based manifold discovery	73	12.RD	A167579//HR00111990045	79,091	—
The MIT-Broad Foundry: TA-2 (Phase III)	130	12.RD	P.O. # 203522 S4600-001//HR0011-15-C-0084	360,590	—
Defense Logistics Agency:					
Integration of ICME Tools in Casting Design and Process Optimization for Intelligent Manufacturing	10	12.RD	AGMT 1/3/19//SP4701-17-D-1134	12,411	—
Defense Security Cooperation Agency:					
Novel Light Sources Based On Nonlinearity Enhanced By Nano-Antennas	89	12.RD	PO#4440432059 (1) 0620	693	—
Defense Threat Reduction Agency:					
A novel toolbox for rapid, on demand, in vitro glycoprotein synthesis		12.351	HDTRA1-15-1-0052 P00009	823,581	262,861
Highly Stable and Bifunctional Bio-inspired Catalytic MOFs for Destruction of Chemical Threats		12.351	HDTRA11810003	726,445	112,380
Novel Reactive, Porous, and Processable Polymers for Chem-Bio Defense		12.351	HDTRA1-19-1-0010	149,874	—
Topology-Enhanced Diffusion of Chemical Warfare Agents in Metal-Organic Frameworks for Detoxification		12.351	HDTRA11910007-P00001	71,772	—
				<u>1,771,672</u>	<u>375,241</u>
National Reconnaissance Office:					
DOMInATE (Deployable Optical Membrane Telescope)		12.RD	NRO000-18-C-0098	306,484	186,724
Navy:					
A Materials Genome Approach to Understanding Biofilm Mechanics		12.300	N00014-15-1-2701-P00005	34,387	—
A New Method for Compact, High-Performance Atom Interferometric Sensors		12.300	N00014-19-1-2181	87,678	—
Active Nanophotonics in the Flatland with Novel Hybrid Metasurfaces		12.300	N00014-17-1-2425 P00004	179,318	—
Air photoelectron spectroscopy of 2D perovskites for rational design of stable solar cells with >15% efficiency		12.300	N00014-18-1-2102 A00001	8,299	—
An Analogical Approach to Autonomy and Social Inference in a Cognitive Architecture		12.300	N00014-16-1-2613-P00002/N00014-13-1-047C	423,723	—
Automated Alignment Engine for Photonics Integration		12.300	N00014-18-1-2089-P00001	(782)	—
Blackbody Thermometry with Quantum-State-Prepared Molecular Ions		12.300	N00014-17-1-2258 P00004	169,295	—
Bulk Nanostructured Materials with Two-Dimensional Building Blocks		12.300	N00014-16-1-2838 P00003	273,721	—
Cognitive Expertise by Repetition Enhanced Simulation-based (CERES) Training		12.300	N00014-18-1-2316 P00003	645,852	—
Consensus-Based Distributed Information Fusion		12.300	N00014-16-1-2106-P00001	36,761	—
Cutset Sampling Topologies for Intelligence, Surveillance, and Reconnaissance		12.300	N00014-17-1-2707 P00002	154,297	105,129
Cyberalloys 2020: Naval Materials by Design		12.300	N00014-16-1-2400 P00003	275,697	—
Design of stable solar cells with > 15% efficiency based on 2D perovskites		12.300	N00014-17-1-2231 P00005	167,230	—

NORTHWESTERN UNIVERSITY
 Supplementary Schedule of Expenditures of Federal Awards
 Year ended August 31, 2019

Cluster title/Federal grantor/Subagency/Project title	Pass-through ID number	CFDA	Sponsor award number	Federal expenditures	Passed-through to subrecipient:
Department of Defense (continued):					
Designing Hierarchical Three-dimensional Surfaces by Controlling Strain		12.300	N00014-17-1-2482 P00003	\$ 197,208	—
Drugs to Stimulate Neurite Regeneration from Damaged Cochlear Neurons		12.300	N00014-15-1-2130//N00014-16-1-2508	94,261	—
Dynamic Allocation of Autonomy for Limited-Bandwidth Human-Robot Teams Based on Measures of Trust in the Human	166	12.300	Agmt 05/13/19 // N00014-16-1-2247	131,100	6,523
Enhancing Intuitive Decision Making Through Implicit Learning		12.300	N00014-16-1-2251 P00005	13,638	—
Functional Crystals Through Encodable Hard and Soft Matter		12.300	N00014-16-1-3117-P00001//N00014-15-1-0043	736,871	—
Gradient Based Criteria for Sequential Experiment Design		12.300	N00244-18-2-0003	39,278	—
Hierarchical Nanoscale Metamaterials		12.300	N00014-17-1-3023 P00002	718,788	—
High power, multispectral, phased arrays based on quantum cascade lasers	211	12.300	A18-0471-S001//N00014-17-1-2836-1 Amd. 3	364,173	—
High-Strength High-Toughness 10%Ni Naval Steels		12.300	N00014-18-1-2594 P00001	180,267	—
Integrated Optics for Single-Photon Nonlinear Interactions		12.300	N00014-17-1-2409-P00003	348,685	164,979
Magneto-Optical Confocal Microscope for Exploring Opto-Electronic Nanomaterial Hybrids and Heterostructures		12.300	N00014-18-1-2131	393,392	—
Mesoscale Integrated Photonic Systems for Structural Health Monitoring		12.300	N00014-16-1-3021-p0003	12,606	—
Mesoscopic quantum science and metrology with levitated mechanical systems	252	12.300	417315//N00014-16-1-2370 AMD 2	250,097	—
Methods for High-Dimensional Nonlinear Optimization		12.300	N00014-18-1-2098 P00001	83,493	—
Multi-Dimensional Control in Laterally-Confined Atomically-Thin Nanostructures		12.300	N00014-16-1-3055	236,768	—
Multi-Dimensional Site-Specific and Correlative Studies of High-Strength High-Toughness Naval Steels		12.300	N00014-15-1-2443-P00002	4,027	—
Multiscale Fabrication via Multiphoton Direct Laser Writing		12.300	N00014-18-1-2651	166,038	—
Multiscale Modeling of Thermoplastic Elastomers for Enhanced Blast Properties through Microstructural Design		12.300	N00014-14-1-0434 P00002	(49)	—
Nanomanufacturing for Enhancing the Human-Machine Interface: Roll-to-Roll, High Speed Printing of Multifunctional, Distributed Sensor Networks on Flexible Plastic Substrates	243	12.300	A002181204//N00014-11-1-0690 9	4,337	—
Nanomaterials Inspired from the Bacterial Adhesome and Mechanome		12.300	N00014-16-1-3175 P00003	226,650	—
Narrow-Linewidth Tunable Laser Source for Probing Excitons and Polaritons in Layered Hybrid Light-Matter Devices		12.300	N00014-18-1-2135	63,603	—
Operating Microscope System for Translational Research in Regenerative and Transplant Medicine		12.300	N00014-17-1-2319	63,878	—
Optimizing Nanoscale Coherent Precipitates in Aluminum Alloys by Microalloying with Tungsten		12.300	N00014-18-1-2550-P00001	173,676	—
Optimizing nanoscale precipitates in Al alloys by microalloying with transition metals		12.300	N00014-16-1-2402 P00004	67,739	—
Plasmonic-Dielectric Metamaterials for Enhanced Spectroscopy and Controlled Chemistry		12.300	N00014-17-1-3024	406,103	18,000
Properties and Methods for Distributionally Robust Optimization with Decision Dependent Uncertainty		12.300	N00014-18-1-2097 P00001	152,989	—
Screening For and Preclinical Evaluation of Drugs for Hearing Loss		12.300	N00014-18-1-2508	224,224	—
Surface and Interface Engineering of van der Waals Nanoelectronic Heterostructures		12.300	N00014-17-1-2993 P00002	167,305	—
The microbiome and responsiveness to stress: Countermeasure strategies for improving resilience to sleep and circadian disruption.	222	12.300	1553361 Mod 4 // N00014-15-1-2809	247,854	—
The Phase Field Method: Towards a Tool for Materials Design		12.300	N00014-18-1-2787 P00002	95,434	—
Theoretical Bounds on Imaging Through Scattering Media		12.300	N00014-15-1-2735 P00003	33,090	29,751
Theoretical Foundations and Scalable Algorithms for Mixed-Integer Convex Optimization with System Choice		12.300	N00014-19-1-2321	40,544	—
Three-dimensional tomographic and electrochemical characterization of Li-ion battery performance and safety		12.300	N00014-19-1-2135	17,529	—
Three-dimensional tomographic studies supporting physically based modeling of Li-ion batteries		12.300	N00014-17-1-2688	151,621	—
Towards Intelligent Agents that Learn to Reason and Communicate		12.300	N00014-17-1-2092 P00004	156,104	—
Ultrasensitive and Rapid Multi-Dimensional Spectral Sensing at Standoff Distances by Non-Uniform Sampling and Statistical Reconstruction		12.300	N00014-19-1-2261	11,696	—
Ultrasensitive Multi-Octave and Multi-dimensional Spectral Sensing by Single Element Detection and Compressive Sensing		12.300	N00014-16-1-2715 P00003	122,088	—
Understanding Atomic Scale Structure in Four Dimensions to Design and Control Mesoscale Morphologies for Oxidation Resistant Alloys		12.300	N00014-16-1-2280-P00009	1,193,374	390,412
Understanding The Incentives For Small Businesses To Participate In The Acquisition Process For R&D-Intensive Products		12.300	HQ00341810012	100,744	—
				<u>10,146,899</u>	<u>714,794</u>
Agile Fabrication of Sheet Metal Components with Assured Properties (Agile 1)	12	12.630	0007A-6 Mod 1 // N00014-14-14-2-0002	(6,363)	—
Interaction and Perception: Multi-Source Spectral Framework for Human-Swarm Collaborator		12.910	N660011924024-P00001	80,699	—
Novel Methods for Stochastic Data-Driven Nonconvex Optimization		12.910	N660011824026-P00004	479,536	149,039
				<u>560,235</u>	<u>149,039</u>
BISC: Bioelectronic Interfacing to Sensory Cortex with massive, fully implanted, flexible, wireless CMOS surface recording and stimulating arrays	54	12.RD	5(GG012664) Amd 3 // N66001-17-C-4002	260,085	—
Development of large-area, low-dislocation seed crystals for ammonothermal growth of bulk GaN	184	12.RD	Agreement 8/22/18 //N68335-18-C-03333	36,627	—
Efficiency Optimization of MWIR and LWIR Quantum Cascade Lasers	152	12.RD	Award 07/18/2019//N00014-19-C-1049	9,932	—
Gerbasi IPA Agreement		12.RD	agreement 8/13/18	62,984	—
Improved Infrared Imaging with Variable Resolution Achieved via Post-Processing	157	12.RD	18110801-01//N6833519C0027	77,869	—
Improved Infrared Imaging with variable Resolution Achieved via Post-Processing	157	12.RD	Agmt 9/28/18 // N00253-17-C-0024	39,670	—
Widely Tunable Surface Emitting Quantum Cascade Lasers	152	12.RD	Agmt 3/7/2018 // N68936-17-C-0063	108,504	—
Department of Defense Total				<u>35,519,915</u>	<u>3,801,542</u>
Department of Education:					
Foreign Language and Area Studies Fellowships (FLAS) under Title VI Higher Education Act of 1961	230	84.015	2015-01858-01 Mod. 3 // P015B14004E	7,010	—
Proposal for Funding a Comprehensive National Resource Center and Foreign Language and Area Studies Fellowships under Title VI Higher Education Act of 1965	230	84.015	076415-15459 03 // P015A14004E	46,208	—
				<u>53,218</u>	<u>—</u>

NORTHWESTERN UNIVERSITY
 Supplementary Schedule of Expenditures of Federal Awards
 Year ended August 31, 2019

Cluster title/Federal grantor/Subagency/Project title	Pass-through ID number	CFDA	Sponsor award number	Federal expenditures	Passed-through to subrecipient
Department of Education (continued):					
Institute of Education Sciences:					
An RCT Institute for Established Researchers		84.305	R305B170016	\$ 388,260	—
Center for Interactive Knowledge Utilization	222	84.305	1551539 Mod 2//R305C140008	226,886	—
Contexts Inside and Outside of School Walls as Predictors of Differential Effectiveness in Preschool Professional Development		84.305	R305A160013 - 18	214,448	116,964
Enhancing Middle School Mathematics Achievement through Spatial Skills Instruction	221	84.305	011275-004//R305A170640-18	48,888	—
Exploring the Spatial Alignment Hypothesis in STEM Learning Environments	280	84.305	S-00014999 // R305A170165	157,317	—
Further Development of Effect Size Estimators for Single-Case Designs: Extensions to Trend and Diverse Outcome Metrics		84.305	R305D170041 - 19	117,783	—
Multidisciplinary Program in Educational Sciences		84.305	R305B140042 - 17 Mod 4	678,176	—
Proposal to Conduct Annual Workshops on Better Quasi-Experimental Design and Analysis		84.305	R305B140029 - 16	26,426	—
Sense-Making in the Disciplines: Supporting Reading and Argumentation in Literature and History		84.305	R305A180463-01	325,367	107,871
State Longitudinal Data Systems Public-Use Project	220	84.305	5897-NU//R3050140045-03	8,631	—
				<u>2,192,182</u>	<u>224,835</u>
NCSE-EIEL Goal 3: An Efficacy trial of J-EMT: Enhanced Milieu Teaching Language Intervention plus Joint Attention, Engagement and Regulation Intervention for Toddlers with Autism					
	270	84.324	3403-019297 // R324A150094-18 Amd 3	163,130	—
Training-Induced Language and Literacy Improvement in Children with Cochlear Implants	77	84.324	R01834 // R324A160193	340,423	—
				<u>503,553</u>	<u>—</u>
Department of Education Total					
				<u>2,748,953</u>	<u>224,835</u>
Department of Energy:					
A Comprehensive Web Infrastructure for Standardizing, Storing, and Launching Density Functional Calculations of Materials and Chemical Compounds	50	81.049	Agmt 8/1/16//DE-SC0015106	(3,445)	—
A Scintillating Xenon Bubble Chamber for Dark Matter Detection		81.049	DE-SC0012161 0004	105,968	—
Antiferromagnetism and Superconductivity		81.049	DE-FG02-05ER46248-0015	118,981	—
Approaches to Integrated Photochemical Systems for Solar Energy Conversion		81.049	DE-FG02-99ER14999-0019	412,501	—
Biosynthesis of bioprivileged, linear molecules via novel carboligase reactions		81.049	DE-SC0019339	145,120	—
Bose-Einstein Condensation of Magnons and Potential Device Applications		81.049	DE-SC0014424-0004	185,091	—
Center for Bio-Inspired Energy Science (CBES)		81.049	DE-SC0000989 0009	2,857,380	588,926
Center for Geologic Storage of CO2	230	81.049	074974-16734// DE-SC0012504	29,267	—
CENTER FOR LIGHT ENERGY ACTIVATED REDOX PROCESSES (LEAP) (Formerly ANSER)		81.049	DE-SC0001059/0009	1,588,708	385,910
Collaboration with Photosynthetic Antenna Research Center (PARC)	278	81.049	WU-HT-11-05-MOD-11 Amd 11 // DE-SC0001035	10,316	—
Coordination-Chemistry-Derived Materials Featuring Nanoscale Porosity and Selective Chemical Separation Capabilities		81.049	DE-FG02-08ER15967 0012	197,338	—
Creating and Interfacing Designer Chemical Qubits		81.049	DE-SC0019356	873,227	—
Dark Matter and Track Triggering with the CMS Experiment		81.049	DE-SC0015973-0003	187,969	—
Design of Next Generation Thermoelectrics		81.049	DE-SC0014520-0003	518,495	—
EFRC/UMN: Inorganometallic Catalysts	243	81.049	A004527502//DE-SC0012702 Amd 6	628,368	—
Electrolyte-Mediated Assembly of Like-Charged Colloids		81.049	DE-SC0018093	262,025	—
Electronic Structure Theories of Singlet Fission and Multiple Exciton Generation		81.049	DE-SC0010265 0004	17,378	—
Electrostatic Driven Self-Assembly Design of Functional Nanostructures		81.049	DE-FG02-08ER46539-0010	227,214	—
Employing bacterial microcompartments to create privileged redox pools for biofuel production		81.049	DE-SC0019337	308,479	—
Epitaxial Multifunctional Oxide Heterostructures		81.049	DE-FG02-06ER46346 0013	129,842	—
Establishing a Clostridia foundry for biosystems design by integrating computational modeling, systems-level analyses, and cell-free engineering technologies		81.049	DE-SC0018249-P0002	1,955,340	1,397,603
Fundamental Studies of Light-Induced Charge Transfer, Energy Transfer, and Energy Conversion with Supramolecular Systems		81.049	DE-FG02-87ER13808-0035	199,759	—
Geophysical Feedbacks between Fluid-Assisted Sediment Fracture, Compaction and Faulting		81.049	DE-SC0017615	185,280	—
Granular Constraints and Size Effects in Polycrystalline Shape Memory Alloys		81.049	DE-SC0010594 0003	(1,478)	—
Granular Constraints and Size Effects in Polycrystalline Shape Memory Alloys		81.049	DE-SC0010594 0003	41	41
High Pressure Synthesis of New Magnets, Featuring Diamagnetic Sources of Anisotropy		81.049	DE-SC0018092	36,837	—
Hybrid Metal Halides: Advancing Optoelectronic Materials	218	81.049	KK1804 // DE-SC0012541	137,220	—
Institute for Environmental Catalysis		81.049	DE-FG02-03ER15457 0017	1,409,175	—
Missing links in biological methane and ammonia oxidation		81.049	DE-SC0016284 0003	136,718	—
Nanoengineering of Complex Materials		81.049	DE-FG02-00ER45810/0020	(37,100)	—
Nanoporous Materials Genome: Methods and Software to Optimize Gas Storage, Separations, and Catalysis	243	81.049	A003127002 Amd 7//DE-SC0008688	306,386	—
New Methods for Atomic Structure Determination of Nanoscale Materials		81.049	DE-FG02-01ER45945 0018	120,245	—
Nonlinear Optimization and Applications		81.049	DE-FG02-87ER25047/0030	12,312	—
Permanent Magnets Featuring Heavy Main Group Elements for Magnetic Anisotropy		81.049	DE-SC0020176	429	—
PGM-free Engineered Framework Nano-Structure Catalysts	91	81.049	DE-E0008077	(45,114)	—
Probing Coherent States of Light and Matter in Two-Dimensional Semiconductors		81.049	DE-SC0012130-0004	71,765	—
Properties, Electrochemical Activity, and Stability of Solid Oxide Cell Materials Under Extreme Conditions		81.049	DE-SC0016965	149,559	—

NORTHWESTERN UNIVERSITY
 Supplementary Schedule of Expenditures of Federal Awards
 Year ended August 31, 2019

Cluster title/Federal grantor/Subagency/Project title	Pass-through ID number	CFDA	Sponsor award number	Federal expenditures	Passed-through to subrecipient
Department of Energy (continued):					
PROTEUS: Machine Learning Driven Resilience for Extreme-scale Systems		81.049	DE-SC0019358//18SC503797	\$ 65,093	—
Quantum Chemistry for Quantum Computers	73	81.049	A054325//DE-SC0019374	5,848	—
Quantum Materials for Energy Efficient Neuromorphic Computing (Q-MEEN-C)	216	81.049	112383860//DE-SC0019273	24,753	—
Research in the Energy, Cosmic and Intensity Frontiers and Theoretical Physics at Northwestern University		81.049	DE-SC0015910 0003	942,031	—
Scalable Data-Management, Analysis, and Visualization (SDAV)		81.049	DE-SC0007456	57,738	—
Scalable, In-situ Data Clustering Data Analysis for Extreme Scale Scientific Computing		81.049	DE-SC0014330 0002	191,810	—
Solid State Solar-Thermal Energy Conversion Center (S3TEC Center)	130	81.049	5710003775 Amd 3 // DE-SC0001299	(7,974)	—
Strong Interaction Studies with Medium Energy Probes		81.049	DE-FG02-87ER40344	182,963	—
Surface Plasmon Enhanced Chemistry		81.049	DE-SC0004752-0010	192,786	—
The Evolution of Topologically Complex Structures: Coarsening of Dendritic Mixtures		81.049	DE-FG02-99ER45782-0022	53,497	—
Towards the Mechanism of N2 Fixation by Nitrogenase		81.049	DE-SC0019342 0001	94,709	—
Ultrafast Creation and Manipulation of Emergent Phenomena and Novel Phases in Complex Oxides	161	81.049	5709-NU-DOE-2375 // DE-SC0012375	113,277	—
				<u>15,354,127</u>	<u>2,372,480</u>
C6-C14 Alcohol Production as a Pathway to Hydrocarbon Fuels	65	81.087	619-2 // DE-EE0007728	32,388	—
CHARACTERIZATION AND ACCELERATED LIFE TESTING OF A NEW SOLID OXIDE ELECTROLYSIS CELL		81.087	DE-EE0008079-0001-0002-0003	258,339	—
Efficient Reversible Operation and Stability of Novel Solid Oxide Cells		81.087	DE-EE0008437-0001	81,032	—
Engineered reversal of the β-oxidation cycle in clostridia for the synthesis of fuels and chemicals		81.087	DE-EE0008354	117,638	45,577
Identifying Performance Advantaged Biobased Chemicals Utilizing Bioprivileged Molecules	115	81.087	401-20-25A//DE-EE0008492	21,013	—
Transformative Materials for High-Efficiency Thermochemical Production of Solar Fuels		81.087	DE-EE0008089-0001-0002-0003	394,940	—
				<u>905,350</u>	<u>45,577</u>
Transformational SOFC Architecture (TSA)	82	81.089	F720161001s1 // DE-FE0027584	94,546	—
Electrically-Assisted Tubing Processes for Enhancing Manufacturability of Oxide Dispersion Strengthened Structural Materials for Nuclear Reactor Applications		81.121	DE-NE0008409-0001	4,657	—
High-performance nanostructured thermoelectric materials and generators for in-pile power harvesting	249	81.121	203464NU//DE-NE0008812	34,392	—
				<u>39,049</u>	—
Aaron Packman joint appointment	203	81.RD	Agmt 5/8/19	30,328	—
Advanced Materials for Energy-Water Systems (AMEWS)	203	81.RD	Agmt 03/14/19 // 8J-30009-0007A	48,021	—
Advanced Materials for Energy-Water Systems (AMEWS)	203	81.RD	Agmt 03/14/19 // 8J-30009-0008A	97,686	—
Advanced Semiconductors for Radiation Detector	203	81.RD	8J-30009-0010C	61,730	—
Advancing Predictive Capability for Brittle Failure Using Dynamic Graphs	125	81.RD	505113 485409//DE-AC52-06NA25396	99,974	—
Alok Choudhary-Joint NU/Argonne Appointment	203	81.RD	Agmt 9/13/2018	23,060	—
Alok Choudhary-Joint NU/Argonne Appointment (AMASE Project)	203	81.RD	Agmt 9/13/18	19,895	—
Argonne Joint Appointment - Kanatzidis	203	81.RD	Agmt. 08/20/14	225,733	—
Argonne Joint Appointment - Low	203	81.RD	Agmt 09/19/18	95,435	—
Argonne Joint Appointment - Poeppelmeier	203	81.RD	Agmt 9/20/18	146,763	—
Argonne Joint Appointment - Wasielewski	203	81.RD	Agmt 10/11/18	57,925	—
Automatic Differentiation Ptychography for Integrated Chip Imaging	125	81.RD	519824//DE-AC52-06NA25396	82,463	—
Bridging neutron total scattering and atom-probe tomography for resolving amorphous and nanocrystalline structures	269	81.RD	4000164554//DE-AC05-00OR22725	65,445	—
Center for Electrochemical Energy Science - II	203	81.RD	4F-32002 M0007 // DE-AC02-06CH11357	113,783	—
Center for Electrolyte-Electrode Interface Science (CEEIS)	203	81.RD	8J-30009/8J-30009-0009C	253,216	—
Center for Emergent Superconductivity (CES)	203	81.RD	3J-30081 // 3J-30081-0046A Rev. 0046E	(89)	—
CHiMaD Materials Design Training	97	81.RD	PON000304217 Agmt 2/21/19//DE-NA0002839	12,657	—
CMS LPC Distinguished Researcher 2019	75	81.RD	652513//DE-AC02-07CH11359	16,179	—
Concurrent Optimization of Component Capital Cost and Expected O&M	6	81.RD	XEJ-6-62151-01-1 Mod. 3 // DE-AC36-08GO28308	8,359	3,665
Cross-linked Polyhydroxyurethanes with Faster Stress Relaxation and Reprocessability	97	81.RD	N000266389 // DE-NA0002839	112,452	—
Cross-linked Polyhydroxyurethanes with Faster Stress Relaxation and Reprocessability - 2016	97	81.RD	N000298099//DE-NA0002839	140,255	—
CSP Real-time Operations Optimization Software	6	81.RD	XCE-9-92207-01//DE-AC36-08GO28308	63,915	—
Development of Heavy Element Wide Band Gap Semiconductors	203	81.RD	1078J-30009-0002C	113,659	—
Effects of Ultrafast and Coherent Electronic and Nuclear Motions in Photochemical Processes	203	81.RD	8F-30078 M0003// DE-AC02-06CH11357	105,647	—
Emine Begum Gulsoy-Joint NU/Argonne appointment second project	203	81.RD	Agmt 9/26/2017	(873)	—
Fermi Joint Appointment - Eric Dahl	75	81.RD	Agmt 6/27/12 // DE-AC02-07CH11359 Rev 5	389	—
Firm-fixed price proposal for the reimbursement of funds to Northwestern University for the services of Postdoctoral Research Associate, Wave Ngampruetikorn	75	81.RD	PO No. 636083 // DE-AC02-07CH11359	52,162	—
High-performance I/O Research, Development, and Deployment for DataLit	203	81.RD	3J-30081 // 3J-30081-0071A	224,106	—
Image Analysis for Materials Characterization	203	81.RD	8J-30009-0016A	17,590	—
Jennifer Dunn - Joint NU/Argonne Appointment	203	81.RD	Agmt 7/27/2017	53,514	—
Joint Appointment Agreement - Petriello	203	81.RD	Agmt. 09/11/18	129,791	—
Joint Appointment Agreement - Stair	203	81.RD	agreement 9/26/18	42,227	—

NORTHWESTERN UNIVERSITY
 Supplementary Schedule of Expenditures of Federal Awards
 Year ended August 31, 2019

Cluster title/Federal grantor/Subagency/Project title	Pass-through ID number	CFDA	Sponsor award number	Federal expenditures	Passed-through to subrecipient:
Department of Energy (continued):					
Joint appointment funding for Michael Mara	203	81.RD	Agmt 01/24/19	\$ 50,354	—
Joint appointment-Argonne funding for Gasper Kokoi	203	81.RD	Agmt 2/1/19	31,457	—
Joint appointment-funding for Hacksung Kim	203	81.RD	Agmt 4/10/19	56,957	—
Joint appointment-Pyosang Kim Argonne funding	203	81.RD	Agmt 1/18/19	100,708	—
Joint Argonne Appointment - Pyosang Kim	203	81.RD	Agreement 4/17/2018	83,746	—
Joint Center for Energy Storage Research	203	81.RD	3F-31142 Mod. 12 // DE-AC02-06CH11357	(25,200)	—
Joint Center for Energy Storage Research	203	81.RD	8F-30158 // DE-AC02-06CHI 1357 M0002	168,738	—
Kinetic Modeling of the Catalytic Upgrading of Vapors from Biomass Pyrolysis	6	81.RD	AEV-6-62063-01//DE-AC36-08GO28308	16,239	—
Liquid Argon Bubble Chamber Support	75	81.RD	PO 651762	40,560	—
MaterialEyes: A reverse image search tool for materials images	203	81.RD	8J-30009-0013A	34,900	—
MICCoM Water Electrode Studies	203	81.RD	3J-30081-0054A // Rev No. 0054C	(40)	—
MICCoM Water Electrode Studies	203	81.RD	8J-30009-0014A	2,038	—
Microstructural Studies of Nb3Sn Coatings for SRF Cavities	75	81.RD	PO No. 631010 Rev 1 // DE-AC02-07CH11359	160,107	—
Midwest Integrated Center for Computational Materials	203	81.RD	3J-30081-0056A/3J-30081-0056B	(5,284)	—
Midwest Integrated Center for Computational Materials	203	81.RD	8J-30009-0001A/8J-300009	190,308	—
ML/DL and I/O Research, Development, and Deployment for RAPIDS	203	81.RD	3J-30081 Rev 0069B // 3J-30081-0069A	64,262	—
Multi-objective Algorithm Optimization of Interfacial Structures	203	81.RD	3J-30081-0055A // 3J-30081-0055A Rev 0055D	10,793	—
Nb3Sn for accelerator magnets	75	81.RD	PO No. 652592	7,064	—
Oxide Dispersion Strengthened (ODS) Alloys	203	81.RD	3J-30081-0070A	4,267	—
Oxide Dispersion Strengthened (ODS) Alloys	203	81.RD	8J-30009-0011A	8,699	—
Pre-optimized cell free lysates for rapid prototyping of genes and pathways	255	81.RD	UTA18-000419/7399340//DE-AC02-05CH11231	98,103	—
Small Worlds Project Development of algorithms and models for 3D Snapshot Holographic Interferometric Microscopy (3D-SIHM) Subproject	203	81.RD	3J-30081 // 3J-30081-0050A Rev. No. 0050E	29,942	—
Solar for Industrial Process Heat	6	81.RD	XEJ-9-82324-01//DE-AC36-08GO28308	64,834	—
Student Support for Matt Kirschner	203	81.RD	8J-30009/8J-30009-0004A	28,277	—
SuperCDMS SNOLAB Research and Development	75	81.RD	PO 646776//DEAC02-07CH11359	72,848	—
Support for Daikang Yan	203	81.RD	3J-30081-0062A Rev. 0062E // 3J-30081	2,962	—
Support for Daikang Yan	203	81.RD	8J-30009-0003A/8J-30009	38,346	—
Support for Daniel Wiegand	203	81.RD	Agreement 9/14/18	36,440	—
Support for Ivan Martinez-Soler	75	81.RD	NO. 651257	37,766	—
Support for Ming-Feng Tu	203	81.RD	3J-30081-0060A-0060B // 3J-30081 Rev 0060C	21,099	—
Support for Ming-Feng Tu	203	81.RD	WO 8J-30009-0015A	20,881	—
Support for Pufan Liu	203	81.RD	3J-30081-0063A Revision 0063B	4,263	—
Support for Pufan Liu	203	81.RD	8J-30009-0005A/8J-30009	43,201	—
Support for Sajid Ali & Ming Du	203	81.RD	8J-30009-0017A/0017B	17,397	—
Support for Saugat Kandel	203	81.RD	3J-30081 // 3J-30081-0068A Rev. No. 0068D	2,667	—
Support for Saugat Kandel	203	81.RD	8J-30009-0006A-0006D //8J-30009	44,227	—
Support for Yuber Perez-Gonzalez	75	81.RD	NO. 651835	39,753	—
Synchrotron X-ray Studies of Nanostructured Polymer Films, Fibers and Composites	203	81.RD	3J-30081/3J-30081-0013A REV. 0013H	4,725	—
Synchrotron X-ray Studies of Nanostructured Polymer Films, Fibers and Composites	203	81.RD	8J-30009/8J-30009-0012A-0012B	7,082	—
Testing and Characterization for Pattern Recognition ASIC Development	75	81.RD	PO# 640728 // E9935-5264-02 Rev#2	65,324	—
Two-Dimensional Electronic Materials	97	81.RD	N000298887-02//DE-NA0002839	194,887	—
Understanding Roles of Ultrafast and Coherent Electronic and Atomic Motions in Photochemical Reactions	203	81.RD	4F-3232 M0003//DE-AC02-06CH11357	7,683	—
US CMS BRIL Subsystem	75	81.RD	PO 647116//DE-AC02-07CH11359	2,817	—
Wei-Keng Liao-Joint NU/Argonne Appointment	203	81.RD	Agmt 9/13/2017	193,551	—
Wei-Keng Liao-Joint NU/Argonne Appointment (AMASE Project)	203	81.RD	Agmt 9/13/18	51,100	—
Yudong Yao-Joint NU/Argonne Appointment	203	81.RD	Agmt 5/22/2018	9,502	—
Advanced Research Projects Agency-Energy:					
A Novel Hierarchical Frequency-Based Load Control Architecture		81.135	DE-AR0000702	605,658	169,290
An Iterative Approach for Solving the SCOPF Problem Applying LP, SOCP and NLP Subproblems:		81.135	DE-AR0001077	20,065	—
Distributed Electrochemical Production and Conversion of Carbon-neutral Ammonia	178	81.135	C2017.0013-01//DE-AR0000813	118,964	—
Hybrid Interior-Point/Active-Set PSCOPF Algorithms Exploiting Power System Characteristics	122	81.135	543891-78001//DE-AR0001073	59,705	—
Micro-scale Ultra-high Efficiency CPV/Diffuse Hybrid Arrays Using Transfer Printing	85	81.135	17-S32//DE-AR0000882	154,458	—
Regrowth and Selective Area Growth of GaN for Vertical Power Electronics	281	81.135	GR101471 CON-8000 1218//DE-AR000087	132,001	—
Wide-angle planar microtracking microcell concentrating photovoltaics	161	81.135	5688-NU-EARPA-0626//DE-AR0000626	108,345	—
				<u>1,199,196</u>	<u>169,290</u>
National Energy Technology Laboratory:					
Integrated Computation Materials Engineering (ICME) Development of Carbon Fiber Composites for Lightweight Vehicles	78	81.086	RQ15-016R02 Mod 2//DE-EE0006867	231,503	—

NORTHWESTERN UNIVERSITY
 Supplementary Schedule of Expenditures of Federal Awards
 Year ended August 31, 2019

Cluster title/Federal grantor/Subagency/Project title	Pass-through ID number	CFDA	Sponsor award number	Federal expenditures	Passed-through to subrecipient
National Nuclear Security Administration:					
Actinide Center for Excellence	249	81.112	203186NU // DE-NA0003763	\$ 97,984	—
Bayesian Methods for Data Integration	81.113	81.113	DE-NA0002520	(3,354)	—
Advancing Predictive Capability for Brittle Failure Using Dynamic Graphs	199	81.RD	485409/541427//89233218CNA000001	99,816	—
Department of Energy Total				<u>22,671,964</u>	<u>2,591,012</u>
Department of Health and Human Services:					
Administration for Children and Families:					
The Northwestern University Two-Generation Child and Family Outcomes Study of CAP Tulsa's CareerAdvance® Program	55	93.093	Agmt 02/04/19	195,889	—
The Northwestern University Two-Generation Study (NU2Gen) of Parent and Child Human Capital Advancemen	93.093	93.093	90HG1002-02-00	37,939	16,529
The Northwestern University Two-Generation Study (NU2Gen) of Parent and Child Human Capital Advancemen	93.093	93.093	90HG1002-03-00	386,617	71,393
				<u>620,445</u>	<u>87,922</u>
Expanding the Cycle of Opportunity: Simultaneously Educating Parents and Children in Head Start		93.600	90YR0073-05-03 Arnd 3	209,790	168,301
Illinois DCFS Implementation of Trauma Affect Regulation: Guide for Education and Therapy (TARGET) for Post Adoption and Guardianship Families	189	93.652	Agmt Signed 10/12/16 // 90CO1122-04	16,514	—
Evidence-informed Practices in Early Childhood Home Visiting: Prevention, Identification and Treatment of Substance Abuse in Families	132	93.RD	HHSP233201500035//50525S05679	12,160	—
Administration for Community Living:					
Advanced Rehabilitation Research and Training (ARRT) Program: Northwestern University Advanced Rehabilitation Research Training Applicator		93.433	90AR5019-04-03	170,724	—
Advanced Rehabilitation Research and Training (ARRT) Program: Northwestern University Advanced Rehabilitation Research Training Applicator		93.433	90ARHF0003-01-00	6,720	—
Collaborative Machines Enhancing Therapies (COMET)	166	93.433	7248//90REGE0005-01-00	15,074	—
Field Initiated Project Programs Motivational Interviewing and Physical Activity Change in Parkinson's Disease	166	93.433	81421//901F0093-01-00	31,392	—
Improving Electronic Written Communication in Aphasia	166	93.433	6317//90IFRE0007-01-00	12,480	—
Interventions for Neurologic Communication Disorders		93.433	90AR5015-02-00	(13,405)	—
Interventions for Neurologic Communication Disorders		93.433	90AR5015-02-00	30,288	30,288
Multi-site Clinical Trial of Hypoxia in Incomplete SCI	166	93.433	cc81478 6323//90SIMS0001-01-00	72,497	—
Northwestern University Policy Research Fellowship		93.433	90ARPO0001-02-00	10,259	—
Northwestern University Policy Research Fellowship		93.433	90ARPO0001-02-00	151,409	—
Rehabilitation Research Training Center (RRTC) on employment for people with Physical Disabilities	166	93.433	90RTEM0001-01-00//7260	22,280	—
Rehabilitation Science for Basic Scientists and Engineers: An Advanced Training Program		93.433	90AR5031-03-00	17,900	3,007
Rehabilitation Science for Basic Scientists and Engineers: An Advanced Training Program		93.433	90AR5031-03-00	137,243	—
Rehabilitation Strategies, Techniques, and Interventions	166	93.433	CC#81353 3037//90RE5013-01-00	172,654	—
Timing of transcranial direct current stimulation (tDCS) combined with speech and language therapy (SLT): An Intervention Development study for Aphasia	166	93.433	7267//90IFRE0200-01-00	10,199	—
				<u>847,694</u>	<u>33,295</u>
Developing Optimal Strategies in Exercise and Survival Skills to Increase Health and Function	166	93.443	CL3802, CC81038//90RT5027-01-00	85,801	10,651
Agency for Healthcare Research and Quality:					
Health Services Research Training Grant	219	93.225	FP037911//2T32HS000084-21	37,215	—
Northwestern University-University of Chicago HSR Postdoctoral Training Program		93.225	3T32HS000078-20S1	318,657	177,426
The University of Chicago and Northwestern University Predoctoral Health Services Research Program	219	93.225	FP037911-03//2T32HS000084-21	97,340	—
				<u>453,212</u>	<u>177,426</u>
A Chicago Center of Excellence in Learning Health Systems Research Training (ACCELERAT)		93.226	1K12HS026385-01	256,789	—
A Randomized Controlled Trial of Geriatric Emergency Department Innovations		93.226	1R01HS026489-01	84,843	—
Dental prescribing of antibiotics and opioids: high use in the absence of evidence	229	93.226	16659//5R01HS025177-02	35,930	—
Develop and Validate Health IT Safety Measures to Capture Violations of the 5 Rights of Medication Safety	54	93.226	4(GG012713-04)//5R01HS024538-04	16,587	—
Development of SCRIPIS: Standardized Consent Redesign and Implementation Protocol for IPA in Stroke		93.226	5F32HS025330-02	57,372	—
EHR Based Medication Complete Communication Strategy to Promote Safe Opioid Use		93.226	5R18HS023459-03	46,715	—
Enhancing Stroke Prehospital and Emergency Evaluation and Delivery (E-SPEED)		93.226	5R18HS023459-02	168,195	30,897
Evaluating the Implementation of a Multi-Component Quality Collaborative		93.226	5R01HS024516-04	232,425	7,069
Examining Non-Visit-Based Antibiotic Use to Improve Safety and Limit Resistance		93.226	5R01HS024930-04 REVISED	274,765	60,426
Expansion, Implementation & Evaluation of Electronic Health Record-Integrated Patient-Reported Symptom Screening in a Comprehensive Cancer Center		93.226	1R18HS026170-02	364,519	28,441
Implementation and Testing of a Diabetes Discharge Intervention to Improve Safety During Transitions of Care		93.226	1R18HS026143-01A1	128,287	—
Improving Safe Antibiotic Prescribing in Telehealth: A Randomized Trial	253	93.226	110597268//1R01HS026506-01	37,318	—
Improving the Quality of Pediatric Emergency Care Using an Electronic Medical Record		93.226	5R01HS020270-06	(622)	(622)
In Situ Simulation for Adoption of New Technology to Enhance Safety in Rural EDs		93.226	1R18HS024027-03	137,600	78,426
Midwest Small Practice Care Transformation Research Alliance		93.226	5R18HS023921-03	2,083,826	817,527
Northwestern University - Patient-centered Intervention and Engagement Training		93.226	5K12HS023011-05	670,325	334,903
Physical Therapy Delivery Models for Long-Term Parkinsons Disease Management (NIH NRSA Postdoc Fellowship for Miriam Rafferty, BA.)		93.226	5F32HS025077-02	(47)	—
Prevent Diabetes Mellitus (PreDM) Clinical Decision Support Intervention in Community Health Centers		93.226	5R18HS026172-02	291,432	102,884

NORTHWESTERN UNIVERSITY
 Supplementary Schedule of Expenditures of Federal Awards
 Year ended August 31, 2019

Cluster title/Federal grantor/Subagency/Project title	Pass-through ID number	CFDA	Sponsor award number	Federal expenditures	Passed-through to subrecipient
Department of Health and Human Services (continued):					
Preventing Wrong-Drug and Wrong-Patient Errors with Indication Alerts in CPOE Systems		93.226	5R01HS024945-02	\$ 234,975	176,555
Promoting safe care transitions: Simulation-based mastery learning to improve communication in times of diagnostic uncertainty	198	93.226	080-31050-S27501//5R18HS025651-02	139,909	—
Redesigning Systems to Improve Quality for Hospitalized Patients		93.226	5R18HS025649-03	389,072	119,286
Reducing the risk of preventable postpartum lower extremity nerve injuries		93.226	5R03HS025267-02	41,886	3,583
Safely Improving Emergency Diagnostic Testing through Clinical Safe Harbors	271	93.226	VUMC73418//1R18HS025931-01A1	7,089	—
The Value of Children's Hospitals-Are Increased Costs Justified by Improved Outcomes or Driven by Internal and External Economic Forces?		93.226	5R01HS024712-04	72,707	46,902
Using Location-Based Smartphone Alerts within a System of Care Coordination		93.226	1R21HS025000-02	17,693	8,220
				<u>5,789,590</u>	<u>1,814,497</u>
The Comprehensive Unit-based Safety Program (CUSP) for Antibiotic Stewardship	118	93.RD	2003757786//HHS2332015000201	121,273	—
Centers for Disease Control and Prevention:					
Developing and Disseminating Programs to Build Sustainable Lupus Awareness, Knowledge, Skills, and Partnership:	9	93.068	6NU58DP006138-02-02	(945)	—
Community Counts: Public Health Surveillance for Bleeding Disorders (Region #V-West, HTC #553)	90	93.080	ATHN2015-VW-1-553/6nu27dd001155-04-02	17,394	—
Rural Cancer Prevention Center 2014-2019	233	93.135	3210000758-18-175//5U48DP005014-04	2,807	—
Chicago Center for Youth Violence Prevention	219	93.136	FP061138//1U01CE002712-04	179,076	—
Development and Evaluation of Sports Concussion Prevention Strategies	182	93.136	11679SUB//5U01CE002880-02-00	17,119	—
				<u>196,195</u>	<u>—</u>
The roles of TfRs and HSPA5 uptake		93.262	5R01OH010469-04	(185)	—
The roles of TfRs and HSPA5 uptake		93.262	5R01OH010469-04	2,283	2,283
				<u>2,098</u>	<u>2,283</u>
Prioritizing public health efforts to improve the care and quality of life for people with lupus	21	93.424	1782018//5NU38OT000225-05	11,940	—
An Individually Tailored, Family-Centered Intervention for Childhood Obesity: Connecting Services in Pediatric Primary Healthcare, the Home and the Community	18	93.535	18-277//U18P006255	119,171	—
An Individually Tailored, Family-Centered Intervention for Childhood Obesity: Connecting Services in Pediatric Primary Healthcare, the Home and the Community	18	93.535	16-995//U18DP006255-01	(782)	—
				<u>118,389</u>	<u>—</u>
Evaluation Center Extension to Evaluate PrEP Implementation and Data to Care Services	45	93.940	CONTRACT PO #42045/236320/50105365//U62PS005021	12,784	—
Effect of ACA Medicaid Expansion on Diabetes: Diagnosis, Treatment, Patient Compliance, and Health Outcomes		93.945	6 U18DP006120-04-02	380,615	101,010
Development of reproducible, quantitative methods based on shotgun metagenome sequencing for assessment of risk of microbial transmissior		93.RD	75D30118C02915	144,834	20,074
HIV Outpatient Study	42	93.RD	Agreement Date: 6/11/12//CDC No. 200-2011-41872	(22,327)	—
Intergovernmental Personnel Act Agreement for Theresa Rowe		93.RD	17PA1708457 mod 3	58,683	—
Centers for Medicare & Medicaid Services:					
Development and Maintenance of Post-Acute Care Cross-Setting Standardized Patient Assessment Data	165	93.RD	9920170059//HHSM-500-2013-130141	54,850	—
Food and Drug Administration:					
A double blind, randomized, vehicle controlled, crossover study with an open-label long-term extension, to evaluate the safety and efficacy o topical naloxone hydrochloride lotion, 0.5%, for the relief of pruritus in patients with the mycosis fungoides	71	93.103	No.EL-1007-01-01//R01FD005396	22,599	—
Increasing the Quality and Efficiency of Clinical trials	66	93.103	203-7585//5R18FD005292-04	(52)	—
Increasing the Quality and Efficiency of Clinical Trials	66	93.103	203-7911//5R18FD005292-05	11,684	—
Phase 2 Study of Esophageal String Test in Diagnosing Eosinophilic Esophagitis	229	93.103	7046-06//5R01FD004086-04	38,330	—
Phase 2 Study of Intravenous Gallium Nitrate in the Treatment of Cystic Fibrosis	265	93.103	UWSC8836//2R01FD003704-03A1	860	—
				<u>73,421</u>	<u>—</u>
Psychometric Evaluation of a New CABP PRO Instrument	100	93.RD	ICON Signed 03/26/18	1,260	—
The influence of brand and principal display panel (PDP) for safe consumer use of over-the-counter (OTC) drugs—Advancing the science		93.RD	HHSF223201510126C//0004	37,924	28,830
Health Resources and Services Administration:					
Hemophilia Treatment Center (HRSA Award)	90	93.110	Agmt 10/31/16//H30MC24052	18,589	—
A joint CCHHS/Northwestern Preventive Medicine Residency with Integrative Health Care Training Program	95	93.117	01353-NoA-NWUJ03//6D33HP29245-01-01	3,972	3,972
Implementation of the Live Donor Champion Program	118	93.134	2003709195//5R39OT31103-02	34,285	—
Social Behavioral Interventions to Increase Solid Organ and Tissue Donation	195	93.134	258461-00-01//5R39OT29878-03-00	57,141	—
				<u>91,426</u>	<u>—</u>
Ryan White HIV/AIDS Program Implementation Center for HIV Clinical Quality Improvement	94	93.145	5740-01//6U28HA30791-02-01	15,122	—
Affordable Care Act Teaching Health Center (THC) Graduate Medical Education (GME) Payment Program		93.530	2T91HP21542-07-00	3,016,593	1,387,147
Affordable Care Act Teaching Health Center (THC) Graduate Medical Education (GME) Payment Program		93.530	6 T91HP215420605	195,637	172,047
				<u>3,212,230</u>	<u>1,559,194</u>

NORTHWESTERN UNIVERSITY
 Supplementary Schedule of Expenditures of Federal Awards
 Year ended August 31, 2019

Cluster title/Federal grantor/Subagency/Project title	Pass-through ID number	CFDA	Sponsor award number	Federal expenditures	Passed-through to subrecipient
Department of Health and Human Services (continued):					
Academic Units for Primary Care Training and Enhancement		93.884	6UH1HP29963-03-01	\$ 850,631	216,540
Use of Social Media to Improve Engagement, Retention, and Health Outcomes along the HIV Care Continuuum	98	93.928	AGREEMENT 3/10/16 // 1 H97HA288910100	42,286	—
Better Health through Education and Transformation of Older Adult care in Illinois	175	93.969	com4UQHP28715-02//6U1QHP287150101	7,363	—
Illinois Perinatal Quality Collaborative (ILPQC) Title V	103	93.994	86380016F	(2,418)	—
Illinois Perinatal Quality Collaborative (ILPQC) Title V	103	93.994	86380016F	70,031	70,031
				<u>67,613</u>	<u>70,031</u>
National Institutes of Health:					
American Heart Association Tobacco Regulation and Addiction Center "A-TRACK"	11	93.077	FX-ATRAC-NWU-05//5P50HL120163-05	(2,457)	—
Exploring Cardiovascular and Other Health Associations of Electronic Cigarette Use in US Persons of Hispanic Heritage. The Hispanic Community Health Study / Study of Latinos (HCHS/SOL)		93.077	5R03HL144902-02	56,793	—
				<u>54,336</u>	<u>—</u>
Association of ALS to gene-environment mediated changes in HDL proteins		93.113	5R01ES022310-05	(62)	—
Carbon Nanotube Structure-Activity Relationships for Predictive Toxicology	214	93.113	0521 G RA276 Amd 5 // 5R01ES022698-05	(94)	—
Discovery of conserved molecular mechanisms underlying population-wide variation in toxin responses		93.113	1R01ES029930-01	131,343	3,563
Effects of air pollution and gestational diabetes on autism	121	93.113	OOS030239NUCS113726//1R56ES028121-0	58,929	—
Effects of Flame Retardants on brain function and attentional deficits in school-age children – brain imaging, neurobehavioral, and gut microbiome studies in a longitudinal birth cohort	54	93.113	1(GG013015-01)//5R01ES027845-02	21,833	—
Ex Vivo Female Reproductive Tract Integration in a 3D Microphysiologic System		93.113	3UH3TR001207-05S1	3,686	—
Mechanisms of Cadmium Induced Dysglycemia and Type 2 Diabetes Mellitus		93.113	5R01ES027011-03	434,692	—
PCOS and androgen-related disease modeling and drug testing in Multi-organ Integrated Microfluidic Reproductive Platform		93.113	3UG3ES029073-02S1	2,005,193	263,436
Protein Adducts as Measures of Exposure Throughout Childhood Development		93.113	5R21ES026776-02	(5,677)	—
Role of alveolar macrophages in particulate matter-induced cardiopulmonary disease	219	93.113	FP058473-03-PR//5R01ES015024-12	56,616	—
				<u>2,706,259</u>	<u>266,999</u>
Cortico-striatal plasticity in the transition to chronic pain		93.121	4R01DE022746-05 REVISED	(2,856)	—
Enamel matrix 3D organization and maturation stage ion flow	79	93.121	NWU025865-2565//5R01DE025865-02	75,647	—
Evolution of Chemical, Structural, and Mechanical Properties of the Surface Zone in Caries Lesions: A Multimodal, Correlative Imaging Approach		93.121	5F31DE026952-02 REVISED	37,512	—
Impacting The Oral HPV Continuum: Prevention, Screening, and Early Detector	118	93.121	2003348761//5R35DE026631-03	6,956	—
The role of amorphous intergranular phases in the development of caries lesions		93.121	5R01DE025702-04	411,154	—
				<u>528,413</u>	<u>—</u>
A randomized, double-blind, placebo-controlled study of 4-hydroxytamoxifen topical gel in women with mammographically dense breasts	259	93.135	00004892//HHSN261201200034I	15,098	—
Genomic Medicine at Northwestern: Discovery and Implementation		93.172	3U01HG008673-04S1	777,383	—
Health Care Provider responses to receiving unsolicited genomic results	47	93.172	GENFD0001649709//5R01HG010004-02	42,856	—
Interactive Multimedia Consent for Biobanking	231	93.172	1001514516//5R01HG008348-03	60,833	—
VGER, the Vanderbilt Genome-Electronic Records Project	271	93.172	VUMC66624//2U01HG008672-04S1	66,193	—
				<u>947,265</u>	<u>—</u>
A Family-Genetic Study of Language in Autism		93.173	5R01DC010191-10	839,118	107,785
Acoustic and Perceptual Effects of WDRC Amplification		93.173	5R01DC006014-15	299,412	59,765
Assessing the Human Cochlea using Stimulus Frequency Otoacoustic Emissions (SFOAEs)		93.173	5F32DC017352-02	68,549	—
Atrophy and resting state connectivity in primary progressive aphasia		93.173	5K23DC014303-05	174,237	—
Auditory input to cerebellar unipolar brush cells		93.173	5R21DC016759-02	203,917	—
Auditory selective attention and its relation to speech recognition in school-age children		93.173	5F31DC017055-02	39,345	—
Can Consumers and Audiologists Detect Ear Disease Prior to Hearing Aid Use?		93.173	5R33DC013115-05	212,048	107,598
Central auditory deficits associated with HIV infection and treatment	60	93.173	R924//5R01 DC009972-10	6,789	—
				<u>424,543</u>	<u>126,869</u>
Characterizing Variability in Hearing Aid Outcomes Among Older Adults		93.173	3R01DC012289-08S1	101,460	—
Connectome-guided high-definition tDCS for the treatment of tinnitus		93.173	5R21DC015880-04	275,161	—
Core Center for Integrated Research on Human Communication Disorders		93.173	5P30DC012035-05 REVISED	89,962	—
CRCHNS US-French Research Proposal Plastic Neural Circuits in Olfactory Learning		93.173	5R01DC015137-03	(53)	—
Defining molecular mechanisms in the SLC26 family of proteins		93.173	5R03DC014553-03 REVISED	202,698	—
Defining the pathological mechanisms of hereditary hearing loss		93.173	1R01DC017492-01	166,165	—
Dynamic interaction among proteins in hair cells		93.173	2R56DC011813-06	186,101	—
Early Communication Intervention for Toddlers with Hearing Loss		93.173	3R01DC016877-01A1S1	218,858	59,549
Effects of hearing experience on audiovisual speech perception in children		93.173	1R56DC015492-01A1	21,600	—
Elucidating Mechanisms Underlying Odor-Mediated Memory Consolidation During Sleep and Wakefulness		93.173	5F31DC015374-03 REVISED	1,000	—
fMRI Correlates of Speech and Voice Impairment in Parkinson's Disease		93.173	5F31DC015717-02	—	—

NORTHWESTERN UNIVERSITY
 Supplementary Schedule of Expenditures of Federal Awards
 Year ended August 31, 2019

Cluster title/Federal grantor/Subagency/Project title	Pass-through ID number	CFDA	Sponsor award number	Federal expenditures	Passed-through to recipient:
Department of Health and Human Services (continued):					
Genetic Determinants of Taste Preferences and Risk of Metabolic Disease		93.173	7R03DC013373-03	\$ 126,728	—
Glomerular domains and olfactory circuitry		93.173	5R03DC014565-03	(1,079)	—
Hearing in noise in early childhood: neurophysiological, cognitive, and linguistic mechanisms		93.173	5F31DC016205-02 REVISED	1,322	—
Language in Primary Progressive Aphasia		93.173	5R01DC008652-13	558,355	—
Mapping and function of odorant receptors in the human olfactory system		93.173	5R01DC014426-05	691,015	317,535
Maximizing outcomes for preschoolers with developmental language disorders: testing the effects of a sequentially targeted naturalistic intervention	270	93.173	UNIV60403//1U01DC017135-01	262,420	—
Mechanisms Regulating Synaptic Function in the Developing Auditory System		93.173	5R03DC013841-03	16,441	—
Molecular Mechanisms of Tonotopy Development in the Brain Stem		93.173	1R01DC017167-01A1	30,060	—
Nanotechnological Regeneration of Spiral Ganglion Neurons with Human Stem Cells		93.173	5K08DC013829-05	183,437	—
Neurobiology of Language Recovery in Aphasia: Natural History and Treatment-Induced Recovery		93.173	5P50DC012283-05 REVISED	449,249	228,507
Neurolinguistic Investigations of Aphasia and Recovery		93.173	5R01DC001948-22	622,315	—
NRSA F31 for Daria Agnieszka Boratyn in support of: Neural and behavioral mechanisms of olfactory generalization in the human brain		93.173	5F31DC017062-02	43,725	—
Outer and Inner Hair Cell Development		93.173	5R01DC015903-03	746,391	—
Parent-toddler EEG neural synchrony as a window into social communication deficits in autism		93.173	5R21DC017210-02	145,709	—
Perceptual Coding and Modulation of Odor Objects in the Human Brain	250	93.173	573503//7R01DC010014-10	45,606	—
Phase 2 Development of a Spoken Language Biomarker of Cognitive Impairment in Parkinson's Disease		93.173	1R21DC017255-01A1	15,409	—
Physiologically Derived DPOAE Measurement Methods		93.173	1F32DC016773-01	67,973	—
Principles of olfactory reward processing in the human brain		93.173	5R01DC015426-04	263,593	5,467
PROMIS-Deaf Profile: Inclusion of Deaf Patients in Disability and Outcomes Research	84	93.173	0000025075//7R01DC014463-02	1,882	—
Regulation of singular expression in Trace Amine-Associated Receptors		93.173	5F32DC015962-02 REVISED	64,231	—
Research and Mentoring on Swallowing Impairment and Respiratory-Swallow Coordinator		93.173	5K24DC012801-06 REVISED	85,594	—
Sensory Interaction in Voice and Voice Disorders	268	93.173	AAC6717-001//5R01DC014519-05	55,831	—
Seventh International Brain Computer Interface Meeting		93.173	1R13DC016830-01	31,913	—
The function of respiratory-linked local field potential oscillations in human olfactory and limbic brain regions		93.173	5R01DC016364-02	423,366	3,126
The role of parent phenotype in parent-mediated language interventions for autism		93.173	5R01DC014709-05	716,384	—
The Roles of Espins in Hair Cell Stereocilia		93.173	5R01DC004314-18	389,047	—
The When to Worry about Language Study (W2W-L): Joint consideration of developmental patterning and neural substrates for enhancing early identification of language impairment		93.173	5R01DC016273-02	523,346	32,876
Trace Amine-Associated Receptors and Olfactory Behavior in Mammals		93.173	5R01DC013576-05	288,384	—
Type-2 inflammation mediates olfactory loss in Chronic Rhinosinusitis: mechanisms and therapeutic opportunities		93.173	5R01DC016645-02	321,485	—
Underlying Psycholinguistic Skills in Late Talkers: Distinct Profiles and Differences from Typically Developing Children		93.173	1F31DC017631-01	29,243	—
Understanding the Benefits of Optical Nerve Stimulators for Neural Interfaces		93.173	1R56DC017492-01A1	10,172	—
				<u>10,740,355</u>	<u>1,049,077</u>
A Mindfulness-Based e-Health Intervention to Improve Medication Adherence among Breast Cancer Survivors		93.213	5R34AT009447-02	286,156	—
A robust heterologous expression system of intact fungal secondary metabolite gene clusters for natural product discovery in <i>Aspergillus nidulans</i>	110	93.213	Agreement 6/27/18 //2 R44 AT009158-02	195,374	—
Creating and Optimizing Mindfulness Measures to Enhance and Normalize Clinical Evaluation (COMMENCE)		93.213	5R01AT009539-03	627,217	272,391
Mass Spectrometric Studies of Thioether Biosynthesis		93.213	5R01AT009143-16	269,670	—
Mechanisms of Probiotic Analgesia		93.213	5R01AT007701-05	354,547	—
Positive Affect Regulation as Adjuvant to Integrative Therapies for Chronic Pain: Development of the LARKSPUR Clinic-Based Intervention		93.213	5R34AT009685-02	308,638	10,353
SCH: INT: Collaborative Research: Development and analysis of new mathematical and statistical models for chronic pain		93.213	5R01AT010413-02	121,258	38,682
				<u>2,162,860</u>	<u>321,426</u>
Leveraging a Unique existing Cohort to elucidate the Link between sleep and cardio-metabolic disease		93.233	1R01HL141881-01A1	163,438	—
Multidisciplinary Treatment for Obstructive Sleep Apnea and Insomnia		93.233	7R01HL114529-05	195	—
Strengthening circadian signals to enhance cardiometabolic function		93.233	5R01HL140580-03	455,329	—
Training Grant in Circadian and Sleep Research		93.233	5T32HL007909-20 REVISED	460,720	147,358
				<u>1,079,682</u>	<u>147,358</u>
2/2 - Suicide Prevention in Chinese Older Adults		93.242	5R34MH100393-03	131,027	55,105
2/3 Community psychosis risk screening: An instrument development study		93.242	5R01MH112545-03	214,905	—
A Family-Genetic Study of Autism and Fragile X Syndrome		93.242	4R01MH091131-05	113,024	—
A pragmatic trial of two strategies for implementing an effective eHealth HIV prevention program		93.242	5R01MH118213-02	1,281,797	36,357
Age-Related Histone Modification Effect on Antipsychotic Action		93.242	5R01MH109466-03 REVISED	431,039	—
Altered auditory networks in HIV-induced central nervous system dysfunction	60	93.242	R1072//1R01NS108809-01	33,931	—
An examination of psychomotor disturbance in current and remitted MDD: An RDoC Study		93.242	1R01MH118741-01A1	51,330	—
Artificial Intelligence in a Mobile Intervention for Depression (AIM)		93.242	5R01MH100482-05	416,977	—
Behavioral relevance of active dendritic mechanisms of integration and plasticity		93.242	2R01MH101297-06	213,096	—
Behavioral Relevance of Active Dendritic Mechanisms of Integration and Plasticity		93.242	5R01MH101297-05 REVISED	(47,948)	—

NORTHWESTERN UNIVERSITY
 Supplementary Schedule of Expenditures of Federal Awards
 Year ended August 31, 2019

Cluster title/Federal grantor/Subagency/Project title	Pass-through ID number	CFDA	Sponsor award number	Federal expenditures	Passed-through to subrecipient
Department of Health and Human Services (continued):					
BMP Signaling and Neurogenesis in Major Depressive Disorder		93.242	1R01MH114923-01A1	\$ 178,139	—
Contributions of Parallel Nigrostriatal Dopamine Circuits to Reward Learning and Habit Formation		93.242	5R00MH109569-05	298,771	—
Cortico-Hippocampal Mechanisms of Context Memory		93.242	5R01MH108837-04	493,679	—
DART2.0: comprehensive cell type-specific behavioral neuropharmacology	66	93.242	A03-0696//1RF1MH117055	282,032	—
Developing an HIV Prevention Intervention for Young MSM through Improved Parent-Child Communicator	85	93.242	18-M61//5R34MH112445-02	87,938	—
Development of Sub 100 nm Resolution X-ray Nanotomography of Centimeter-Sized Tissues		93.242	5R01MH115265-02	417,437	—
Dimensions of Early Temper Loss and Low Concern: Clinical Utility and Mechanisms		93.242	5U01MH082830-10	402,865	114,553
Discovery of novel small molecule antidepressants	271	93.242	VUMC64676//7R01MH106511-03	45,582	—
Dyadic Synchrony as a Mechanism of Parent-Child Interaction Therapy (PCIT): A Neuroscience-based Approach	251	93.242	0061277(130820-2)//1R21MH115088-01A1	6,301	—
Dyadic Synchrony as a Mechanism of Parent-Child Interaction Therapy (PCIT): A Neuroscience-Based Approach	278	93.242	WU-20-123//7R21MH115088-02	809	—
Early Life Adversity, Biological Embedding, and Risk for Developmental Precursors of Mental Disorders	278	93.242	WU-19-11-MOD-1//5R01MH113883-02	42,493	—
Exercise and markers of medial temporal health in youth at-risk for psychosis		93.242	5R33MH103231-05	197,874	30,175
Expanding College Student Mental Health with Stress Management Mobile Technologies		93.242	5K08MH112878-03	232,374	25,705
Exploring Melipaladines as New Serotonin Receptor Antagonists		93.242	5R21MH115301-02	114,818	—
F32 for Shrutti Dave in support of: Optimizing noninvasive modulation of prediction and episodic memory networks via cerebellar stimulator		93.242	5F32MH118718-02	57,047	—
From Irritability to Impairment: How Neurodevelopment of Executive Function and Parent-Child Neural Synchrony Influence the Transition from Normal to Abnormal	251	93.242	0046528 (126659-1)//5R01MH107540-04	15,403	—
From Irritability to Impairment: How Neurodevelopment of Executive Function and Parent-Child Neural Synchrony Influence the Transition from Normal to Abnormal Functioning	278	93.242	WU-20-280//7R01MH107540-05	4,045	—
Generating an Earlier Science of When to Worry: A Neurodevelopmental, Transactional Approach to Characterizing Irritability Patterns Beginning in Infancy		93.242	5R01MH107652-04	816,079	30,758
Harm avoidance and incompleteness as dimensional endophenotypes in anxiety and OC spectrum disorder:	33	93.242	00001242//5R01MH110449-03	85,601	—
Health consequences of water insecurity for HIV-infected mothers & their infants		93.242	5R21MH110844-03 REVISED	66,036	24,215
High-Risk Psychosis Youth and Caregivers: Emotion in Interaction		93.242	5R21MH115231-02	220,703	—
Implementing an innovative suite of mobile applications for depression and anxiety.	1	93.242	SS111000040313//R44MH114725	86,165	—
Interrogating and sculpting synapses and circuits for rapidly acting antidepressant effects		93.242	1R56MH113923-01	125,038	—
LATIN-MH: Latin America Treatment and Innovation Network in Mental Health	83	93.242	2016.86612.002//5U19MH098780-05	32,111	—
LifeSense: Transforming Behavioral Assessment of Depression Using Personal Sensing Technology		93.242	5R01MH111610-03	303,990	36,257
LiveWell: A Mobile Intervention for Bipolar Disorder		93.242	5R01MH110626-04	761,344	112,108
Mapping Dimensional Aspects of Biobehavioral Threat Reactivity in Young, Violence-Exposed Children: Linkages to Fear, Distress, and Disruptive Behavior	224	93.242	UCHC7-108267241//1U01MH113390-01A1	41,092	—
Mechanisms of Stress-Enhanced Aversive Conditioning		93.242	5R01MH078064-13	436,707	—
Molecular, anatomic, and functional characterization of midbrain dopamine neuron subtypes		93.242	5R01MH110556-03	569,612	—
Multidisciplinary Training Program in Digital Mental Health		93.242	5T32MH115882-02	185,793	—
Neural Habituation in Ultra High-Risk Youth		93.242	5R21MH110374-02 REVISED	216,324	33,071
Neurohypophysial regulation of midbrain dopamine systems.		93.242	5R01MH117111-02	508,532	—
New Tools to Study Neurosteroid Estrogens		93.242	5R01MH113189-04	682,416	—
Noninvasive Manipulation of Hippocampal-Cortical Brain Networks and Memory		93.242	5R01MH106512-05	828,173	—
Noninvasive modulation of prefrontal contributions to the organization of episodic memories		93.242	5R21MH108863-02 REVISED	1,237	—
Novel Methods for Evaluation and Implementation of Behavioral Intervention Technologies for Depression	54	93.242	1(GG008480)//1R01MH1094696-02	147,676	—
NRSA F30 for Daniel W Fisher in support of: Role of HCN Channels in Major Depressive Disorder Etiology and Treatment		93.242	5F30MH109249-04	34,995	—
NRSA Postdoc Fellowship for K. Blum in support of: Determining the role of muscle afferent signals in cortical proprioceptive representation		93.242	1F32MH120893-01	4,513	—
Optical Dissection of the Neural Circuitry Controlling Sensorimotor Gating		93.242	7K01MH113132-03	53,243	—
Optimized dosing of repetitive transcranial magnetic stimulation for enhancement of hippocampal-cortical networks		93.242	5R01MH111790-04	548,547	—
Perception and central coherence in autism: A family genetic eye-tracking study		93.242	5R03MH107834-02	11,903	—
Perturbation of the Treatment-Resistant Depression Connectome by Fast-Acting Therapies		93.242	1590GWD844//5U01MH110008-03	15,817	—
Plasticity of Auditory Cortical Circuits in Schizophrenia	251	93.242	0038377 (1245412-1)//5R01MH075333-15	108,412	—
Post-Graduate Research Training Aligned with the NIMH Strategic Plan		93.242	1R23MH115855-01A1	7,882	—
Postsynaptic roles of ankyrin		93.242	5R01MH107182-05	333,970	—
Simulated Clinician Assessment for Cognitive Behavioral Therapy Skills	183	93.242	5065-NU//R01MH112625	24,911	—
Simultaneous eye tracking and hippocampal IEEG to identify oscillatory signals of memory retrieval and novelty detection in human:		93.242	5R21MH115366-02	201,859	—
Small GTPase signaling in spines		93.242	5R01MH071316-15	280,071	13,151
Stepped Telemental Health Care Intervention for Depression		93.242	4R01MH095753-05	(15,221)	—
Symptom Dimensions of Threat-And Reward-Related Neurocircuitry	214	93.242	0875 G SA507 Amd 6//3R01MH100117-05S1	107,894	—
Synaptic and dendritic dysfunction in psychiatric disorders		93.242	5R01MH097216-08	499,025	79,842
Synthesis of Trials to Prevent Suicide Risk Behavior in Sexual and Gender Minorities		93.242	5R01MH117598-02	311,204	145,227
Systematic Functional Interpretation of Regulatory Variants in Schizophrenia		93.242	EH15-150-S1//5R01MH106575-04	119,220	—
The NewTics Study: A novel approach to pathophysiology and cause of tic disorders	151	93.242	WU-17-444-MOD-2//5R01MH104030-03	62,449	—
The role of glutamate receptors in compulsive and perseverative behavior	278	93.242	5R01MH099114-07	525,535	—
Training Program in Neurobiology of Information Storage		93.242	2T32MH067564-16 REVISED	198,714	—
Training Program in Neurobiology of Information Storage		93.242	4T32MH067564-15	14,727	—

NORTHWESTERN UNIVERSITY
 Supplementary Schedule of Expenditures of Federal Awards
 Year ended August 31, 2019

Cluster title/Federal grantor/Subagency/Project title	Pass-through ID number	CFDA	Sponsor award number	Federal expenditures	Passed-through to subrecipient
Department of Health and Human Services (continued):					
Transformation of the stress response into motor behavior by the external globus pallidus	258	93.242	0012774A//5R01MH112768-03	\$ 255,968	—
Using Speech Acoustics to Reveal Motor Disruptions in Psychosis	93.242	93.242	1R21MH119677-01A1	23,248	—
Virtual Reality Job Interview Training to Enhance Supported Employment for Adults with SM	242	93.242	3004704106//R01MH110524	29,353	—
				<u>15,569,453</u>	<u>736,524</u>
Efficacy of Couples-Based HIV Prevention in Vulnerable Young Men		93.273	5R01AA024065-04	600,843	122,736
Newborn Phosphatidylethanol Screening to Detect Fetal Alcohol Exposure in Uruguay		93.273	5U01AA023176-03	136,981	77,958
Role of Alcohol Disparities in HIV Risk among Sexual Minority Youth		93.273	5R01AA024409-04	273,646	—
				<u>1,011,470</u>	<u>200,694</u>
A Multilevel Network Model of Drug Use and HIV Racial Disparities in Men		93.279	5K08DA037825-05	160,729	—
A New Approach to Integrating Primary and Secondary HIV Prevention in Young Male Couples		93.279	1DP2DA042417-01	542,764	—
A Systems-level Approach to Studying HIV/AIDS Susceptibility and Substance		93.279	4R01DA033773-05	165,698	14,727
Center for chronic pain and drug abuse		93.279	5P50DA044121-02	1,693,793	—
Center for Prevention Implementation Methodology for Drug Use and HIV (Ce-PIM)		93.279	5P30DA027828-09	997,753	254,011
Cognitive-Affective Substrates of Smoking: Targets for Maternal Behavior Change		93.279	5K23DA037913-05	191,034	—
Drug Abuse and Related Health Disparities: An Intergenerational Longitudinal Study of Offspring of Delinquent Youth (Northwestern Offspring Project)		93.279	5R01DA042082-02	309,843	—
Enhancing Sustainability of State and Other Systems-wide Advances in the Implementation of Treatments for Opioid Use Disorders	190	93.279	61867865-128280//7R01DA037222-03 REVISED	21,572	—
Evaluating the Effectiveness of an eHealth EBI for Latino Youth in Primary Care	241	93.279	SPC-000247//5R01DA040756-03	10,220	—
Identifying nicotine, withdrawal mechanisms hidden within habenular complexity		93.279	5R01DA040626-02	174,517	—
Measuring Coalition Capacity to Foster Program Sustainment	253	93.279	63501087//5R34DA037516-03 REVISED	52,596	—
Multilevel Influences on HIV and Substance use in a YMSM Cohort		93.279	3U01DA039639-05S2	1,794,129	—
netCanvas: Development, Hardening, and Dissemination of a Software Suite for the Collection of Complex Network and Contextual Data in HIV and Drug Research		93.279	5R01DA042711-04	668,146	43,404
New Inactivators of GABA Aminotransferase for Addiction and Epilepsy		93.279	5R01DA030604-09	480,720	18,973
Nicotinic acetylcholine receptor function in the mesolimbic dopamine system		93.279	5R01DA035942-05	219,380	—
Nicotinic receptor gene editing vectors		93.279	5R21DA045507-02 REVISED	144,769	—
Photoactivatable ligands for nicotinic optopharmacology		93.279	1R21DA044460-01A1	83,925	—
Sensitivity to Unpredictable Threat and Smoking Lapse Behavior	227	93.279	R-19-0063//R21DA045285	22,473	—
Substance Use, Stress, and HIV Influences on Systemic Inflammation Among Young Men Who Have Sex with Men (NIH Postdoc Fellowship to Ethan Morgan, PhD.)		93.279	5F32DA046313-02	56,428	—
System-Level Implementation to Reduce Excess Opioid Prescribing in Surgery		93.279	5R34DA044752-03	290,639	3,830
UIUC Neuroproteomics and Neurometabolomics Center on Cell to Cell Signaling		93.279	074103-15022//5P30DA018310-05	139,245	—
Understanding and reducing HIV risk behavior and substance use among self-identified bisexual adolescent men	230	93.279	5K08DA045575-02	152,129	—
Understanding Substance Use Risk among Sexual Minority Women		93.279	1K01DA046716-01A1	19,309	—
Vulnerability to Drug Use & HIV: Advancing Prevention for Rural African Americans	226	93.279	RR376-417/4945376//5P30DA027827	142,744	—
				<u>8,534,555</u>	<u>396,067</u>
A Formalism for Customizing and Training Intelligent Assistive Devices		93.286	5R01EB019335-03	48,589	5,774
Antifouling Peptide Mimetic Polymers		93.286	4R01EB005772-08	45,228	45,228
Antigen Loaded Particles for Tolerance Induction	242	93.286	Sub#3003585891//5R01EB013198-09 REVISED	225,137	—
Center of Excellence for Mobile Sensor Data-to-Knowledge (MD2K)	240	93.286	5-40708//5U54EB020404-05	95,951	—
Computational methodologies for safety assessment of MRI in patients with deep brain stimulation implants		93.286	7R03EB024705-02	74,082	—
Design-driven engineering of robust mammalian sense-and-respond functions		93.286	5R01EB026510-02	323,588	—
Human and Machine Learning for Customized Control of Assistive Robots		93.286	7185 cc 81301//1R01EB024058-01A1	71,110	—
Image-Guided Transcatheter Delivery of Natural Killer Cell Therapy Augmented with IFN-Gamma Eluting Microspheres	166	93.286	5R01EB026207-02	317,849	—
Interdisciplinary Graduate Education in Movement and Rehabilitation Sciences		93.286	5T32EB009406-09	135,605	—
In-vivo characterization of pancreatic field carcinogenesis using spatially resolved reflectance measurements via a fiber optic probe		93.286	5F31EB022414-02	468	—
Neurodegenerative and Neurodevelopmental Subcortical Shape Diffeomorphometry Software	118	93.286	2003341343//R01EB020062	91,072	—
Patient-adjustable MRI technology for high-resolution imaging of deep brain stimulator		93.286	5R00EB021320-03	201,603	—
Preclinical Investigation of a Bioengineered Vascular Graft		93.286	4R01EB017129-04	47,371	1,628
Protein-Releasing Microporous Scaffolds for Cell Replacement Therapy	242	93.286	3003655776//5R01EB009910-09	(7,489)	—
Rapid Pediatric Cardiovascular MRI without Contrast Agent or Anesthesia		93.286	3R21EB024315-02S1	333,865	130,498
Safety assessment of MRI in patients with retained cardiac leads		93.286	5R03EB025344-02	59,751	—
SCH: Interface Monitoring System to Promote Residual Limb Health		93.286	5R01EB019337-03	151,856	96,200
Shape Control and Transport Properties of DNA-Copolymer Micelles	118	93.286	2002586569 Amd 2//5R01EB018358-02-REVISED	88,914	—
The Center for Innovation in Point-of-Care Technologies for HIV/AIDS at Northwestern University (C-THAN)		93.286	5U54EB027049-02	1,127,243	266,349
Transarterial Immunomodulatory Embolization: A novel approach to cancer therapy		93.286	3R21EB022291-02S1	(9,416)	—
Transarterial Immunomodulatory Embolization: A novel approach to cancer therapy		93.286	3R21EB022291-02S1	22,678	22,678
Unassisted Blood Pressure Monitoring Using Arterial Tonometry and Photoplethysmography		93.286	5U01EB020589-02	259,389	—
				<u>3,704,444</u>	<u>568,355</u>

NORTHWESTERN UNIVERSITY
 Supplementary Schedule of Expenditures of Federal Awards
 Year ended August 31, 2019

Cluster title/Federal grantor/Subagency/Project title	Pass-through ID number	CFDA	Sponsor award number	Federal expenditures	Passed-through to subrecipient
Department of Health and Human Services (continued):					
A Pragmatic Trial of An Adaptive eHealth HIV Prevention Program for Diverse Adolescent MSM		93.307	5U01MD011281-04	\$ 1,599,690	419,603
African American Cardiovascular pharmacogenetic CONsortium (ACCOuNT): discovery and translation		93.307	5U54MD010723-04	2,504,323	1,717,197
Characterizing PrEP Adherence and Patterns of Use in a Diverse Community Cohort of Young Men		93.307	5R01MD013609-02	303,783	—
Collateral Consequences of Parents Incarcerations for Their Adolescent Children: A Prospective Longitudinal Study		93.307	1R01MD014020-01A1	22,364	—
Effectiveness and Implementation of a Mindfulness Intervention for Depressive Symptoms Among Low-income, Racial/Ethnic Minority Adults in a Federally Qualified Health Center		93.307	5R01MD012236-02	379,558	—
ELLAS: Environment, Leiomyomas, Latinas and Adiposity Study	242	93.307	3004650350//5R01MD011570-04	32,940	—
Ethics in HIV Prevention Research Involving LGBT Youth		93.307	5R01MD009561-04 REVISED	210,311	187,735
Genomic Analysis of Enhanced Response to Heart Failure Therapy in African Americans	251	93.307	0041119 (124864-3)//1R01MD009118-02	9,069	—
Genomic Analysis of Enhanced Response to Heart Failure Therapy in African Americans (GRAHF)	251	93.307	0041119(124864-3)//5R01MD009118-05	13,293	—
Health disparity in pharmacogenomics: African American SNPs and drug metabolism		93.307	5R01MD009217-06	417,175	—
Integrating Text Messages into the Mothers and Babies Course to Address Depression in Low-Income Women and their Partners		93.307	5R21MD011320-02	32,296	—
Latino vs. Non-Latino Disparities in Advance Care Planning & End-of-Life Care	117	93.307	1S3120-02//5R01MD007652-05	15,542	—
Northwestern University Minority Health and Health Disparities Research Training (NU-MHRT)		93.307	1T37MD014248-01	218	—
Reducing Assessment Barriers for Patients with Low Literacy		93.307	5R01MD010440-03	939,135	266,069
The Price of Debt: The Unequal Burden of Financial Debt and Its Impact on Health	237	93.307	S2014000026205// 5R01MD007723-03	39,235	—
Understanding Patterns of Healthy Aging Among Men who have Sex with Men	251	93.307	0047269(126836-2)//5R01MD010680-04	66,909	—
Understanding socioeconomic disparities in perinatal risk: The role of epigenetic and transcriptional regulation in the placenta		93.307	5R01MD011749-03	506,035	136,247
Understanding the Disparities in Postpartum Hemorrhage and Hemorrhage Outcomes		93.307	5R03MD011628-02	55,840	—
Using epigenomic subtyping to understand the racial differences in lymphoma	219	93.307	FP064397//R21MD011439	59,033	—
				<u>7,206,749</u>	<u>2,726,851</u>
A New High-Throughput Technology to Reveal the Dynamic Functional States of RNAs		93.310	7DP2GM110838-02	(58,791)	—
A systems-level study of signaling networks and differentiation	219	93.310	FP060024 Amd 1 // 1R01EY025957-01A1	145,349	—
Cell-free DNA sequencing approaches to define the genetic etiology of unexplained epilepsies		93.310	1DP2NS111506-01	302,931	—
Center for 3D Structure and Physics of the Genome	239	93.310	PO No. WA00753476//OSP20170535 Amd 3//U54DK107980-	82,530	—
Genetic mapping of visual circuits		93.310	3DP2EY027983-01 S1	392,537	—
Genetics and quantum chemistry as tools for unknown metabolite identifier	226	93.310	SUB00001824//1U2CES030167-01	74,311	—
Identifying Mechanisms Governing T Cell Diversity		93.310	1DP2AI136599-01	591,027	—
National Research Mentoring Network for a Diverse Biomedical Workforce	263	93.310	10045839-07//5U54GM119023-05	31,180	—
National Research Mentoring Network for a Diverse Biomedical Workforce	266	93.310	706K661//5U54GM119023-05	29,758	—
National Research Mentoring Network for a Diverse Biomedical Workforce	243	93.310	Sub# N005259901//8U54GM119023-03	(432)	—
Recording Neural Activities onto DNA	250	93.310	573341//7-R01-MH-103910-06	92,980	—
Sub-micrometer x-ray tomography for neuroanatomy		93.310	5U01MH109100-03	(1,352)	—
				<u>1,682,028</u>	<u>—</u>
A National Center for Digital Health Informatics Innovation.	158	93.350	1011902_NWU//5U24TR002306-03	675,937	—
Improving Patient Reported Outcome Data for Research through Seamless Integration of the PROMIS Toolkit into EHR Workflows		93.350	5U01TR001806-04	1,964,604	1,293,348
Northwestern University Clinical and Translational Science Institute		93.350	2UL1TR001422-05A1	570,298	—
Northwestern University Clinical and Translational Science Institute (NUCATS)		93.350	2KL2TR001424-05A1	18,923	—
Northwestern University Clinical and Translational Science Institute (NUCATS)		93.350	2TL1TR001423-05A1	32,419	—
Northwestern University Clinical and Translational Science Institute (NUCATS)		93.350	5KL2TR001424-04	625,993	171,453
Northwestern University Clinical and Translational Science Institute (NUCATS)		93.350	1TL1TR001423-04 REVISED	548,840	258,035
Northwestern University Clinical and Translational Sciences Institute (NUCATS)		93.350	3UL1TR001422-04S1	5,095,635	366,499
University of Pittsburgh Clinical and Translational Science Institute (CTSI) ACT Administrative Supplement	251	93.350	0055353(130910-17)//5UL1TR001857-04	45,491	—
				<u>9,578,140</u>	<u>2,089,335</u>
Analyzing and Interpreting Clinician and Patient Adverse Event Data to Better Understand Tolerability in ECOG-ACRIN Studies	59	93.353	1204001//1U01CA233169-01	33,369	—
Implementation and Evaluation of an Expanded Bilingual Electronic Symptom Management Program across a Multi-site, Fully-integrated Comprehensive Cancer Center		93.353	1UM1CA233035-01	602,874	—
Structure and Function of the SS18-SSX-containing mSWI/SNF (BAF) Complex Unveiling New Paths Toward Therapeutic Targeting	59	93.353	1U54CA231638-01//1205801	469,383	—
				<u>1,105,626</u>	<u>—</u>
EHR-based Universal Medication Schedule to Improve Adherence to Complex Regimens		93.361	5R01NR015444-04	717,157	353,113
HippoPC1 Hippocampal Predictors of Cognitive Impairment in Breast Cancer Patients		93.361	4R01NR014182-05	25,016	—
Interventions for Symptom Management in Older Patients with HAND	217	93.361	8729sc//5R01NR015223-05	37,202	—
Morning Light Treatment at Home to Improve Glucose Metabolism in People at Increased Risk for Type 2 Diabetes		93.361	7R21NR016377-02	106,070	177
Use of simulation to improve ventricular assist device self-management		93.361	5R21NR016745-02 REVISED	73,630	—
Video Information Provider for HIV-Associated Non-AIDS (VIP-HANA) Symptoms	54	93.361	3(GG012114-01)//5R01NR015737-04	17,200	—
				<u>976,275</u>	<u>353,290</u>

NORTHWESTERN UNIVERSITY
 Supplementary Schedule of Expenditures of Federal Awards
 Year ended August 31, 2019

Cluster title/Federal grantor/Subagency/Project title	Pass-through ID number	CFDA	Sponsor award number	Federal expenditures	Passed-through to subrecipient:
Department of Health and Human Services (continued):					
A Population-based Approach to Single CTC Analysis in Metastatic Breast Cancer	198	93.393	080-27000-S27101//5R01CA207468-02	\$ 63,600	—
Adapting patient navigation to promote cancer screening in Chicago's Chinatown	93.393	93.393	5R01CA163830-06	511,857	270,602
Aldo-keto reductase family 1 member B10 AKR1B10 in pancreatic carcinogenesis	93.393	93.393	4R01CA164041-05	8,285	—
Apigenin restores TSP-1 expression in UVB-irradiated keratinocytes	259	93.393	3001001876//7R01CA172669-005	(17)	—
Behavioral Activation and Varenicline for Smoking Cessation in Depressed Smokers	93.393	93.393	5R01CA184211-05	419,981	173,748
Communicate and LEarn About youR Variant of Uncertain Significance (CLEAR VUS)	93.393	93.393	5R03CA194643-02 REVISED	10,787	359
Comparative Effectiveness of Genomics Assay for Active Surveillance Failure Prediction in African American Men: the impact of genetic ancestry and socioeconomic status	93.393	93.393	5R21CA202552-02 REVISED	(548)	—
Comparative Effectiveness of Genomics Assay for Active Surveillance Failure Prediction in African American Men: the impact of genetic ancestry and socioeconomic status	93.393	93.393	5R21CA202552-02 REVISED	18,091	18,091
Core Essential Genes in Primary Effusion Lymphoma Cell Lines	93.393	93.393	5R21CA210904-02 REVISED	31,981	—
Culturally Adapted Cognitive Behavioral Stress and Self-Management (CCBSM)	241	93.393	SPC-001083//7R01CA206456-04	28,402	—
Culturally Adapted Cognitive Behavioral Stress and Self-Management (C-CBSM) Intervention for PC	93.393	93.393	3R01CA206456-03S1	30,044	29,431
Determinants of transdermal drug delivery to the normal and the irradiated breast	93.393	93.393	1R01CA235647-01	62,133	—
Disease Beliefs and Cognition: Effect on Diabetes Management in Older Breast Cancer Survivors	99	93.393	0256-3801-4609//1R01CA214491-02	171,069	—
Epigenetic Regulation by Histone Modifiers in Development and Cancer (Pre-doc to Post-doc Transition Award for Christie Sze, BA)	93.393	93.393	5F99CA234945-02	35,591	—
Evaluating Patient-Reported Outcomes Monitoring in Routine Care of Patients with Chronic Myeloid Leukemia for Increasing Adherence and Clinical Response to Therapy: The EMPATHY Pilot Study	93.393	93.393	1R21CA230367-01A1	1,614	—
Evaluating the protective effect of a tissue selective estrogen complex (TSEC) in women with newly diagnosed ductal carcinoma in situ	93.393	93.393	5R01CA218436-03	528,752	283,328
Exploring a new therapeutic approach through targeting epigenetic enzymes in ALL	93.393	93.393	5R00CA188293-04	(206)	—
Feasibility of OncoMed to Improve Self-Management and Adherence to Oral Anticancer Medications	93.393	93.393	5R21CA226671-02	108,543	—
Functional Dissection of the K27M Histone Mutation In Gliomagenesis	93.393	93.393	5R01CA197313-04 REVISED	292,619	—
Genomic Prediction of Doxorubicin-Induced Cardiotoxicity	93.393	93.393	5R01CA220002-02	406,541	18,650
Herpesvirus Gene Expression in Transformed Cells	93.393	93.393	5R01CA021776-38 REVISED	110	—
Histone Modification and Transcription Elongation in Human Cancer	93.393	93.393	5R50CA211428-04	178,931	—
HPV and the DNA Damage Response	93.393	93.393	5R01CA142861-09	422,618	—
In Vivo Model of Epstein-Barr Virus Latency	93.393	93.393	5R01CA073507-20	224,026	—
Inhibition of pancreatic carcinogenesis via targeting c-Raf and sEH	93.393	93.393	5R01CA172431-05 REVISED	180,636	15,086
Kaposi's Sarcoma-associated Herpesvirus Mimics of Cellular microRNAs	93.393	93.393	5R01CA180813-05 REVISED	239,522	—
Methylomic biomarkers for magnesium deficiency and colon neoplasia prevention	271	93.393	VUMC 57993//5R01CA202936-05	195,263	—
Minimally Invasive Colorectal Cancer Risk Stratification with Nanocytology: Targeting Underscreened Populations	29	93.393	1R33CA225323-01	188,012	—
Mitigating Long-term Treatment-related Morbidity in Childhood Cancer Survivors	206	93.393	000519160-003//1R35CA220502-01A1	11,006	—
Mutations of Chromatin and its Modifying Machineries in Malignancies	93.393	93.393	5R35CA197569-05	764,096	—
Progesterone Signaling and Blockade in Human Breast Tumorigenesis and Prevention	93.393	93.393	5R01CA192124-05	240,130	—
PROMIS AYA/Optimizing Health Related Quality of Life Measurement in Adolescent and Young Adult Oncology: A PROMISING Solution	277	93.393	100730-114162//R01CA218398	37,954	—
Prostate Cancer Susceptibility: The ICPCG Study	133	93.393	64853091 NOR-181797-02//5U01CA089600-13	(3)	—
Reducing the Effects of Active Surveillance Stress, Uncertainty and Rumination thru Engagement in Mindfulness Education (REASSURE ME)	93.393	93.393	5R01CA193331-04	365,133	192,710
Regulation of Human Papillomavirus Gene Expression	93.393	93.393	2R01CA059655-26	69,139	—
Regulation of Human Papillomavirus Gene Expression	93.393	93.393	5R01CA059655-25 REVISED	346,723	—
Role of NF90 in Prostate Cancer	93.393	93.393	5R01CA227918-02	182,248	—
Role of the Ndc80 Loop Domain and Cdt1 in Kinetochores Microtubule Attachments	93.393	93.393	5R00CA178188-05	5,458	—
ROS and HIFa as molecular targets for chemoprevention in Sirt3 -/- breast cancers	93.393	93.393	4R01CA168292-05	(222)	—
Structural Cell Biology of DNA Repair Machines	213	93.393	7336107 Mod. 2 // 5P01CA092584-18	66,924	—
The inhibitory network between EZH2 and PARP1 in triple-negative breast cancer	93.393	93.393	5R01CA208257-04	116,718	—
The National Person-Centered Assessment Resource (PCAR)	93.393	93.393	3U2CCA186878-04S1	397,074	192,088
Transcriptional Elongation Control in Development and Disease	93.393	93.393	3R01CA214035-18S1	732,372	—
Translating buccal nanocytology for lung cancer screening into clinical practice	93.393	93.393	2R01CA225002-02	412,835	142,646
Using Text Messaging to Increase HPV Vaccination among Young Sexual Minority Men	93.393	93.393	5R21CA208329-02	126,526	44,386
				8,232,348	1,381,125
(PQD5) imaging systemic tissue injuries induced by anticancer drugs	93.394	93.394	5R01CA185214-04 REVISED	43,182	—
A comparison of interventions to teach patients skin self-examination	93.394	93.394	5R01CA154908-09	456,871	185,150
A Multilevel Physical Activity Intervention for South Asian Women and Girls	93.394	93.394	1R01CA242520-01	32	—
A Phase IB/II Trial of ALT-801 in Combination with Cisplatin and Gemcitabine in Muscle Invasive or Metastatic Urothelial Cancer	8	93.394	CA-ALT-80-01-10//5R44CA097550-07	4,794	—
Biophotonics to Couple Pancreatic with Upper GI Screening via Ultrathin Endoscopy	93.394	93.394	5R01CA183101-05	611,712	324,274
Catheter-Directed Image-Guided Delivery of Cytostatic and Cytotoxic Combination Therapy to Liver Tumors	93.394	93.394	3R01CA218659-02S1	351,401	20,122
Development of 5hmC and 5mC biomarkers in cell-free circulating DNA for sensitive colon cancer detection and prognosis	219	93.394	FP064995//U01CA217078	156,856	—

NORTHWESTERN UNIVERSITY
 Supplementary Schedule of Expenditures of Federal Awards
 Year ended August 31, 2019

Cluster title/Federal grantor/Subagency/Project title	Pass-through ID number	CFDA	Sponsor award number	Federal expenditures	Passed-through to subrecipient
Department of Health and Human Services (continued):					
Epigenomic markers of circulating cell-free DNA and treatment outcome in multiple myeloma	219	93.394	FP066297-02-PR-B//1R01CA223662-01A1	\$ 93,943	—
Identification of Long Non-coding RNAs as Novel Biomarkers for Heterogeneous Glioblastomas	93.394	93.394	5R21CA209345-02	142,674	—
Imaging in 2020: Visualizing the Future of Health Care with MR Imaging	93.394	93.394	1R13CA232377-01	5,000	—
Incorporating Biomarkers of Prognosis and Cardiovascular Disease Risk in the Fit2Thrive Physical Activity Promotion Intervention for Breast Cancer Survivors	93.394	93.394	1R21CA219028-01A1	59,551	—
Molecular Target Variation Across Environments and at Margins of Glioblastoma	93.394	93.394	7R01CA176659-06	249,919	71,625
MRI-Guided Dendritic-Cell-Based Vaccine Immunotherapy for Pancreatic Cancer	93.394	93.394	5R01CA209886-04	315,028	—
MRI-Guided Irreversible Electroporation Ablation for Liver Tumors	93.394	93.394	5R01CA196967-04	231,459	—
MRI-Monitored Delivery of Sorafenib-Eluting Microspheres to Liver Tumors	93.394	93.394	5R01CA181658-05	435,760	—
Multi-site adaptive trial of a technology-based, EHR-integrated physical activity intervention in breast and endometrial cancer survivors	266	93.394	893K546//1R37CA225877-01A1	97,303	—
Nanoscale/Molecular analysis of Fecal Colonocytes for Colorectal Cancer Screening	93.394	93.394	4R01CA185309-05	25,332	25,332
Real-time volumetric specimen imager for 3D intra-operative lumpectomy margin assessment	51	93.394	5R44CA206801-03	14,899	—
Risk-stratification of Prostate Cancers via Field Carcinogenesis Nanocytology	93.394	93.394	5R01CA200064-05	480,668	241,008
Systemic RNA interference to reactivate p53 tumor suppression	93.394	93.394	5R01CA208783-03	362,604	—
Targeted MRI contrast agents for differential diagnosis of prostate cancer	38	93.394	RES511975//6R01CA211762-03	33,527	—
Technology-Supported Physical Activity Intervention for Metastatic Breast Cancer Survivors:Fit2ThriveMB	93.394	93.394	1R21CA239130-01	27,260	—
Transforming the diagnosis and care of patients with CTCL using TCR sequencing	31	93.394	114835//5R01CA203731-04	74,827	—
Tumor immune and glycan biomarkers for progressive prostate cancer	93.394	93.394	1R01CA212409-01A1	450,119	61,357
				<u>4,724,721</u>	<u>928,878</u>
Alliance for Clinical Trials in Oncology (Alliance Executive Officer)	31	93.395	120870//2U10CA180821-06 REVISED	78,761	—
Alliance for Clinical Trials in Oncology (Alliance) Executive Officer	31	93.395	110408//5U10CA180821-05	89,474	—
Alliance for Clinical Trials in Oncology Operations Center	31	93.395	110408//5U10CA180821-04	75,611	—
An Epigenetic Strategy for Restoring Carboplatin Sensitivity in Ovarian Cancer	93.395	93.395	5R01CA182832-05 REVISED	171,156	145,341
CDK4/6 Inhibitor Therapy for Glioblastoma Multiforme	86	93.395	410676_GR40751-NU424006/R01CA10594	11,412	—
COG NCTN Scientific Leadership Work Order	48	93.395	9500080217-XX/1U10CA180886	90,302	—
Dignity Therapy for Elderly Cancer Outpatients: 3 Arm Nurse or Chaplain Led Tria	225	93.395	UFDSP0011459/R01CA200867	105,863	—
Discovery of Selective MAP2K4 Inhibitors to Target Metastasis	93.395	93.395	5R01CA188015-03 REVISED	4,382	—
Dys-regulation of the MnSOD-Ac-ROS-HIF2a axis promotes IR / Cisplatin resistance phenotype	93.395	93.395	5R01CA214025-03	464,572	—
Early Therapeutics and Rare Cancer Vice Chair Role	158	93.395	9009627_NWU//5U10CA180888-04	9,452	—
ECOG-ACRIN NCI Community Oncology Research Program (NCORP) Research Base Grant	70	93.395	1UG1CA189828-01-NWU1//UG1CA189828-04	151,875	—
ECOG-ACRIN NCORP Research Base: Cancer Care Delivery Research (CCDR)	70	93.395	1UG1CA189828-01-NWU2//UG1CA189828-05	69,429	—
ECOG-ACRIN Nursing Committee	70	93.395	U10CA180820-01-NWU3	2,004	1,591
ECOG-ACRIN Operations Center (PI Committee)	70	93.395	U10CA180820-01-NWU2	8,318	—
Giving and receiving: A reciprocal support writing intervention to reduce symptoms during stem cell transplant	93.395	93.395	7R01CA223963-02	28,491	—
High Density Lipoprotein Nanoparticles for siRNA Delivery	93.395	93.395	4R01CA167041-05	(11,537)	—
IN VIVO DRUG TESTING OF PEDIATRIC CNS TUMORS USING PATIENT DERIVED ORTHOTOPIC XENOGRAFT MODELS	16	93.395	901546-Nu//7U01CA199288-04	18,947	—
Institutional Membership-Alliance for Clinical Trials in Oncology	5	93.395	Fully-executed 11/13/13	26,123	—
Loss of Mitochondrial Sirt3, Decreased MnSOD Activity, and IR Induced Genomic Instability	93.395	93.395	5R01CA152601-10	426,216	—
MPN Research Consortium	99	93.395	0254-4051-4609/5P01CA108671-11	273,181	—
NKG2D superagonist co-stimulation to enhance adaptive immunotherapy of cancer	93.395	93.395	5R01CA208246-04	376,117	—
Northwestern University Lead Academic Participating Site	93.395	93.395	1UG1CA233320-01	121,997	—
NRG Oncology Foundation, Inc. Member Institution Purchased Service Agreement (PSA)	153	93.395	Agmt Signed 9/5/14	341,618	18,850
Phase II trial of mTORC1/mTORC2 inhibitor AZD2014 for sporadic meningioma	129	93.395	229149_AZD2014//1R01CA201130-01A1 REVISED	16,008	—
Radiation induced cancer risk reduction as a function of dose protraction: interspecies comparison	93.395	93.395	5R01CA221150-03	268,170	—
Radiation Oncology Chair of the Children's Oncology Group	48	93.395	PO#20104531-RSUB//9500080220-XX//2U10CA180886	8,375	—
Randomized Trial of Incentives for Research Participation	250	93.395	567849//5R01CA197332-03	53,643	—
Reducing Cancer Transcriptional Heterogeneity through Regulation of Chromatin Structure	93.395	93.395	5R01CA228272-02	422,916	91,635
Retrospective NCI Phantom-Monte Carlo Dosimetry for Late Effects in Wilms Tumor	93.395	93.395	5R01CA219013-03	652,206	454,365
S1602 BIQSFP: A Randomized Trial to Evaluate the Influence of BCG Strain Differences and T Cell Priming with Intradermal BCG Before Intravesical Therapy for BCG-Native High-Grade Non-Muscle Invasive Bladder Cancer	158	93.395	1013080-005_Northwestern//3U10CA180888-06S1	4,323	—
S1602 BIQSFP (2): A Randomized Trial to Evaluate the Influence of BCG Strain Differences and T Cell Priming with Intradermal BCG Before Intravesical Therapy for BCG-Native High-Grade Non-Muscle Invasive Bladder Cancer	158	93.395	9009627-009_Northwestern//3U10CA180	6,484	—
Separating autoimmunity and anti-tumor immunity	93.395	93.395	5R01CA191317-05	330,021	11,476
Small molecule CXCR4 modulators as molecular probes for studying AML	93.395	93.395	5R01CA189074-03	(145)	—
Statin Intervention to Slow the Time to Hepatocellular Carcinoma Recurrence in Cirrhotics Awaiting Liver Transplantation	39	93.395	1427448//1R01CA218466-01	49,651	—
Targeting BET Bromodomain in Pancreatic Cancer	93.395	93.395	5R01CA186885-04S1	88,217	2,106
Targeting Lipid Unsaturation in Ovarian Cancer Stem Cells	93.395	93.395	5R01CA224275-02	406,039	191,248
Targeting Ovarian Cancer Stem Cells through Selective Inhibition of ALDH1A1	108	93.395	IN4684739NWU//1R21CA198409-02	2,556	—

NORTHWESTERN UNIVERSITY
 Supplementary Schedule of Expenditures of Federal Awards
 Year ended August 31, 2019

Cluster title/Federal grantor/Subagency/Project title	Pass-through ID number	CFDA	Sponsor award number	Federal expenditures	Passed-through to subrecipient
Department of Health and Human Services (continued):					
Therapeutic Targeting of Malignant Glioma Stem Cells		93.395	5R35CA197725-06	\$ 928,391	2,694
Using SMART Design to Improve Symptom Management Strategies Among Cancer Patients	139	93.395	RC105782NU//5R01CA193706-04	65,417	—
Yttrium-90 radiation lobectomy: Dose optimization and prediction of FLR hypertrophy to enable resection of HCC		93.395	1R01CA233878-01	639	—
				6,236,675	919,306
An In vivo Metastasis Sensor	242	93.396	3003585711 // 5R01CA173745-06 03	(1)	—
B7H1 Mediated Immunosuppression in Glioma		93.396	4R01CA164714-05	69,821	—
Bioinformatic Analysis of Next Generation Sequencing Data from Cancer Cells		93.396	5R50CA221848-03	172,621	—
Cohesin Mutations in Acute Myelogenous Leukemia	26	93.396	0169-81148//5R01CA204231-02	11,191	—
Development of novel therapies for megakaryocytic malignancies		93.396	5R50CA211534-04	131,502	—
DISE - a natural cancer surveillance mechanism - a new road to cancer therapy		93.396	5R35CA197450-05	954,453	—
Dissect regulation of RNA translation in human cancers		93.396	4R00CA207865-03	219,834	—
Elucidating the stress response regulatory networks that enable malignancy		93.396	5R00CA175293-04	143,310	—
Galpha13 and pancreatic cancer progression		93.396	5R01CA217907-02	403,603	—
Genomics and bioinformatics analysis to understand castration-resistant prostate cancer		93.396	5R50CA211271-04	146,911	—
How Circulating Melanoma Cells Usurp the Leukocyte Transmigration Mechanism for Successful Metastasis		93.396	1R01CA236904-01	127,300	—
Identification and targeting of mechanisms specific to glioma stem cells in glioblastoma		93.396	5R01CA214928-02	376,989	—
Identifying the pathways that drive progression of the MPNs to AML		93.396	1R01CA237039-01	207,335	—
Integrating Epigenomic and Nuclear Receptor Signaling in Castrate Resistant Prostate Cancer		93.396	5R01CA196270-05	558,577	—
Interplay between ER and TGF-β in carcinogenesis		93.396	7R01CA202948-03	324,944	—
Linking Oncogenic Signaling to Tumor Metabolism		93.396	5R00CA194192-05	257,920	—
Mechanisms of Leukemogenesis in Down Syndrome		93.396	5R01CA101774-17	644,020	—
Mitochondrial metabolism and ROS regulate cancer		93.396	5R35CA197532-04	731,533	—
Modulation of Oncogenic Signaling in Glioblastomas		93.396	4R01CA159811-05	(5,686)	—
Multidisciplinary Integrative Genomic Approach to Distinguish Lethal from Indolent Prostate Cancer in Men of European and African Ancestry	118	93.396	2002911519/5U01CA196390-04	18,485	—
Quantitative analyses of tumor cell extravasation	130	93.396	S4485 PO216076/1U01CA202177-04	86,698	—
Regulation of Desmosomal Cadherins in Oral Cancer		93.396	4R01CA122151-10	(384)	—
Role of Desmoglein 1 in Keratinocyte-Melanocyte Communication and Melanoma		93.396	1R01CA228196-01A1 REVISED	129,573	—
Role of Oncogenic Kinase Pim-1 in Prostate Cancer		93.396	5R01CA123484-10 REVISED	71,014	—
Signal Transduction of Type 1 Interferons in Malignant Cells		93.396	5R01CA077816-19	291,665	—
Sirt2 Directs Kras IR Cell Resistance and Tumorigenesis		93.396	5R01CA182506-05	234,579	—
Target MIC shedding to revive anti-tumor immunity		93.396	5R01CA204021-04	335,442	—
Targeting a Treg deubiquitinase in antitumor immune therapy		93.396	5R01CA232347-02	334,862	—
Targeting hyaluronan synthesis and signaling with BET inhibitors in pancreatic cancer		93.396	5R21CA220625-02	175,580	—
Targeting interplay between KLF4 and PRMT5 in carcinogenesis		93.396	55R01CA202963-03	409,373	—
Targeting Novel Protein Complexes for the Treatment of Acute Myeloid Leukemia		93.396	2R01CA121192-11	88,272	—
The role of deubiquitinating enzyme USP33 in Slit-Robo signaling in lung cancer		93.396	5R01CA175360-05 REVISED	142,159	—
The role of GPM3 in tumor-promoting emergency myelopoiesis		93.396	5R01CA208354-02 REVISED	422,542	—
The role of ICSBP in the pathogenesis of chronic myeloid leukemia		93.396	5R01CA174205-05 REVISED	97,538	—
The Role of NOV (CCN3) in Prostate Cancer Progression		93.396	5R01CA172384-05 REVISED	66,088	—
Triad1 regulates myelopoiesis and functions as a leukemia suppressor		93.396	5R01CA195642-05	479,979	—
Understanding Progesterone Receptor action in Obesity for Endometrial Cancer Prevention		93.396	1R01CA243249-01	5,051	—
WEE1 inhibition and tumor immunity		93.396	5R01CA222963-02	214,869	—
				9,079,562	—
ECOG/FSTRF PSA for ECOG Clinical Trial Protocols	81	93.397	Agmt 8/13/12 / U01CA021115	27,518	—
Epigenomic Biomarkers of HIV-Associated Cancers in Nigeria		93.397	5U54CA221205-03	989,442	497,031
Nucleic Acid-Based Nanoconstructs for the Treatment of Cancer		93.397	5U54CA199091-05	2,339,129	—
Spatio-Temporal Organization of Chromatin and Information Transfer in Cancer		93.397	5U54CA193419-05 REVISED	1,931,305	708,944
SPORE for Translational Approaches to Brain Cancer		93.397	5P50CA221747-02	2,394,073	—
SPORE in Prostate Cancer		93.397	5P50CA180995-05	2,123,860	627,169
The Chicago Collaborative to Promote and Advance Cancer Health Equity		93.397	5U54CA203000-05	1,158,965	—
The Robert H. Lurie Comprehensive Cancer Center		93.397	3P30CA060653-22S1	(510,101)	—
The Robert H. Lurie Comprehensive Cancer Center		93.397	3P30CA060653-22S1	35,343	35,343
The Robert H. Lurie Comprehensive Cancer Center		93.397	3P30CA060653-24S4	7,178,848	39,418
				17,668,382	1,907,905
A Highly Specific, Tissue-Permeable Inhibitor of Gli Transcription Factors		93.398	5F31CA186761-04 REVISED	(946)	—
Alternative Splicing of Amyloid Precursor-Like Protein 2 during the Epithelial-Mesenchymal Transition and Cancer Metastasis		93.398	5F30CA196118-04 REVISED	21,827	—
Behavioral and Psychosocial Research Training in Cancer Prevention and Control		93.398	5T32CA193193-03	397,565	—

NORTHWESTERN UNIVERSITY
 Supplementary Schedule of Expenditures of Federal Awards
 Year ended August 31, 2019

Cluster title/Federal grantor/Subagency/Project title	Pass-through ID number	CFDA	Sponsor award number	Federal expenditures	Passed-through to subrecipient
Department of Health and Human Services (continued):					
Bioresponsive MR probes for imaging pancreatic cancer	93.398	1F31CA235997-01		\$ 25,159	—
Cancer Nanotechnology Training Program	93.398	5T32CA186897-05		233,226	—
Carcinogenesis Training Program	93.398	5T32CA009560-33		373,128	—
Chromatin dysregulation generated by recurrent point mutation in histone methyltransferase, MMSET, drives progression of lymphoid malignancies: (Predoc Fellow: Alok Swaroop)	93.398	5F30CA203292-04 REVISED		52,610	—
Clinical bacterial isolate engineered as an immunotherapy for prostate cancer	93.398	5F30CA203472-04		28,809	—
Designing with Dissemination in Mind: Optimization of a mHealth Physical Activity Intervention for Breast Cancer Survivors	93.398	5K07CA196840-05		107,277	—
Development of a Novel Statewide Learning Collaborative to Increase Lung Cancer Guideline Adherence and Improve Cancer Care Delivery	93.398	5K07CA216330-02		166,557	—
Development of Gd(III)-P(II) MR Probes for Tandem Detection & Chemotherapy	93.398	1F31CA239426-01		19,698	—
Investigating the epigenetics of enhancer function in Cancer	93.398	5F99CA222988-02		34,461	—
Irreversible Inhibition of Cerebellar Gli Transcription Factors by Cobalt (III) Complexes	93.398	1F31CA236175-01		24,352	—
NIH NRSA Predoc Fellowship for Maureen McNulty: The Effect Of Cohesin Mutations In Hematologic Malignancies	93.398	5F31CA216976-03		36,697	—
NRSA F31 for Namratha G Sastry in Support of: Novel Roles of LY6K in Glioblastoma Tumorigenicity	93.398	5F31CA232630-02		46,137	—
Profiling Glycosyltransferase Activities on the Epithelial-Mesenchymal Transition in Breast Epithelial Cells using peptide arrays and mass spectrometry	93.398	5F30CA196185-04		39,369	—
Role of desmoglein 1 in regulating redox and growth factor signaling in head and neck cancer	93.398	5F30CA192198-03		7,902	—
Targeted discovery of anti-proliferative natural products using genomics and metabolomics	93.398	5F32CA221327-03		58,780	—
The design, synthesis, and characterization of potent and selective MEK7 inhibitors as targeted therapies for T-cell acute lymphoblastic leukemia	93.398	1F31CA228431-01A1		31,919	—
The function of Ubiquitin-Specific Peptidase 22 (USP22) on T regulatory cell function. NRSA for Elena Montaut	93.398	5F31CA220801-02		37,992	—
The Role of CHAF1B in Maintaining Malignant Leukemia Stem Cells	93.398	1K99CA230314-01A1		19,351	—
The role of glioblastoma derived activated leukocyte cell adhesion molecule in peripheral monocyte PD-L1 induction and immunosuppressor (NRSA Predoc Fellowship Award for Jonathan B. Lamano, MS.)	93.398	5F30CA206413-04		42,890	—
The role of the hippocampal-prefrontal network in cancer-related cognitive impairment: a multimodal cross sectional study	93.398	1F31CA210719-02		1,987	—
The role of tumor derived exosomes in bone metastasis of prostate cancer	93.398	5F30CA225133-02		45,267	—
The Role of ZEB1 Mutations in Cutaneous T Cell Lymphoma	93.398	5K08CA191019-06		131,671	—
Therapeutic and Sustained Cytokine Delivery at the Tumor Site Using Engineered Mononuclear Cells	93.398	5F30CA203325-04		38,375	—
Tissue Factor/Protease-Activated Receptor 2 in IDH1 wild-type and IDH1 mutant gliomas	93.398	5F32CA216996-02		66,540	—
Training Program in Oncogenesis and Developmental Biology	93.398	5T32CA080621-14		408,588	—
Training Program in Signal Transduction and Cancer	93.398	3T32CA070085-20S1		12,821	—
Training Program in Signal Transduction and Cancer	93.398	5T32CA070085-23		257,154	—
Treating cognitive impairments in cancer patients via systematic light exposure	93.398	5K07CA184145-05		162,014	—
				<u>2,929,177</u>	<u>—</u>
1/2 + PR0mote weight loss in obese PAD patients to preVEnt mobility loss: the PROVE Trial	93.837	1UG3HL141729-01A1		50,666	—
31st Annual International MR Angiography Conference	93.837	1R13HL149441-01		10,000	—
4D Flow MRI for characterization of brain arteriovenous malformations	93.837	5F30HL140910-02		49,707	—
4D Flow MRI-based assessment of atrial fibrillation	93.837	5F30HL137279-03		38,440	—
A double-blind randomized controlled trial to assess the efficacy and safety of a quadruple ultra-low-dose treatment for hypertension (QUARTET USA)	93.837	1R61HL139852-01		789,553	105,670
A New Biological Therapy for Atrial Fibrillation	93.837	982-SUB/3U54HL119810-05S1		27,586	—
A novel implementation and social network strategy for acute pulmonary illnesses	93.837	5K23HL118139-05		(3,597)	—
A Novel, Patient-Centered Prognostic Tool for Adults with Critical Illness (NIH Postdoc Fellowship for Jacqueline Marie Kruser, MD.)	93.837	1F32HL140824-01 REVISED		49,930	—
A synthetic heparin derivative that targets collagen to repair damaged vasculature after balloon angioplasty	93.837	965-SUB // 3U54HL119810-05S1		81,898	—
A Systems Approach to Align ICU Care with Patient Treatment Goals	93.837	1K23HL146890-01		33,233	—
A Systems Science Approach to Understanding Racial/Ethnic Disparities in Obesity	93.837	5K01HL133531-04		130,489	—
A Wearable Device for Diagnosis of Obstructive Sleep Apnea (OSA)	93.837	1098SUB//U54HL119810		72,814	—
AAA Geometric Surrogates - Geometric Surrogates for Clinical Management of Abdominal Aortic Aneurysms	257	93.837	1000001715/5R01HL121293-04	16,894	—
Adolescent Family Stress and Early Cardiovascular Risk: Psychosocial and Behavioral Pathways	93.837	5F32HL134276-03		62,284	—
An Interpersonal Relationships Intervention for Improving Cardiovascular Health in Youth	93.837	3R01HL136676-02S1		398,223	62,404
Aortic Plaques and Stroke: Cardiovascular Therapy of Retrograde Embolization Risk	93.837	5R21HL132357-02		55,994	—
Associations Among Apolipoprotein A1 Structural Variants and High-Density Lipoprotein Function	93.837	5K23HL133601-04		141,770	—
AsthmaNet Clinical Trials	161	93.837	NWJHL098115 // 5U10HL098115	76,091	—
Atrial arrhythmias and Ca2+ waves in HF: simulation and experimental studies	93.837	5R01HL119095-05		481,079	125,630
Atrial fibrillation burden, vascular disease of the brain, and cardiac MRI in MESA	265	93.837	UWSC8533/1R01HL127659-01	251,326	—
Automatic quantification of myocardial motion in older adults	93.837	1R03HL144891-01		15,757	—
BEST-CLI: Trial to Compare Best Endovascular versus Best Surgical Therapy in Patients with Critical Limb Ischemia (BEST)	146	93.837	Agr. 8/7/14 // U01HL107407	9,489	—
Beyond PECAM: Mechanisms of Transendothelial Migration	93.837	2R01HL064774-17		394,817	—
Cardiomyocyte TGF-beta: a novel therapeutic target for preventing cardiac fibrosis in humans	93.837	5K08HL141659-02 REVISED		71,225	—
Cardiomyopathy Genomes Project	93.837	3R01HL128075-05S1		78,954	—
Cardiomyopathy Genomes Project	93.837	5R01HL128075-04		662,498	347,397

NORTHWESTERN UNIVERSITY
 Supplementary Schedule of Expenditures of Federal Awards
 Year ended August 31, 2019

Cluster title/Federal grantor/Subagency/Project title	Pass-through ID number	CFDA	Sponsor award number	Federal expenditures	Passed-through to subrecipient
Department of Health and Human Services (continued):					
CEREBRAL AUTOREGULATION MONITORING TO REDUCE BRAIN INJURY FROM CARDIAC SURGERY		93.837	5R01HL092259-10	\$ 287,797	23,833
Channelopathies and Cardiomyopathies Among Sudden Deaths in the Young		93.837	5U01HL131914-03 REVISED	755,925	74,334
Characterizing HIV-related Diastolic Dysfunction	66	93.837	223700//U10HL084904	30,695	—
Chicagoland Metropolitan AsthmaNet Consortium		93.837	5U10HL098096-07	(6,549)	—
Chicagoland Metropolitan AsthmaNet Consortium		93.837	5U10HL098096-07	2,331	2,331
Childhood Origins of CHD Disparities: Neural & Immune Pathways		93.837	5R01HL122328-04 REVISED	539,848	88,806
Chronic Obstructive Pulmonary Disease in Non-Smokers	54	93.837	5(GG011046-01)//1R01HL130506-03	130	—
Colony Stimulating Factor-1 in Graft Vascular Disease	4	93.837	310904//5R01HL127700-04	28,933	—
Community Translation of the South Asian Healthy Lifestyle Intervention (SAHELI)		93.837	5R01HL132978-03	794,006	298,997
Comparing and Combining Bortezomib and Mycophenolate in SSc Pulmonary Fibrosis		93.837	5R34HL122558-03 REVISED	92,600	—
Comprehensive Cardiac Structure-Function Analysis in Heart Transplantation		93.837	5R01HL117888-05 REVISED	461,580	—
Cook County Clinical Research Site (CC_CRS) of the MACS/WIHS Combined Cohort Study (MW_CCS)	95	93.837	50811-324-NWU//1U01HL146245-01	10,076	—
Decrypting Variants of Uncertain Significance in Long-QT Syndrome		93.837	5R01HL122010-04	(1,259)	—
Decrypting Variants of Uncertain Significance in Long-QT Syndrome		93.837	5R01HL122010-04	50,308	50,308
Decrypting Variants of Uncertain Significance in Long-QT Syndrome		93.837	5R01HL122010-06	1,008,221	445,188
Defining regulatory regions for cardiomyopathy genes		93.837	5F30HL142187-02	45,650	—
Determinants of Midlife & Longitudinal Change in Cognitive Function: CARDIA Study	121	93.837	200103-05//5R01HL122658-03	6,496	—
Determinants, Trajectories, and Consequences of Abnormal Cardiac Mechanics		93.837	5R01HL107577-08	563,331	88,102
Development of combination immunotherapies for atherosclerotic inflammation		93.837	1DP2HL132300-01	500,898	—
E2F1 in BM progenitor cell differentiation and cardiovascular repair	206	93.837	000514985-001//7R01HL131110-03	61,242	—
Early Psychosocial Intervention and Child and Parent Cardiovascular Disease Risk	161	93.837	5875-NU-DHHS-7809//1R01HL137809-01A1	72,688	—
Efferocytosis Directed Inflammation Resolution and Repair in the Hypoxic Heart		93.837	5R01HL122309-05 Revised	157,336	—
Efficacy of Potassium Nitrate In Heart Failure with Preserved Ejection Fraction	250	93.837	574598//5R01HL121510-04	74,731	—
Examination of the Functional Role of Sca1+ Vascular Progenitor Cells following Vascular Injury		93.837	5F32HL129651-02	9,584	—
Exercise in Genetic Cardiovascular Conditions	281	93.837	Yale 2.23.2017//R01HL125918	(169)	—
Exploiting Tie2 Activation for the Treatment of Vascular Diseases		93.837	5R01HL124120-04	77,890	—
Fox Transcription factors in lymphatic vessel development		93.837	5R01HL126920-04	274,875	—
Function of the Ubiquitin-Specific Peptidase 22 (USP22) in Acute Myeloid Leukemia		93.837	5F31HL136107-02 Revised	(709)	—
Functional Cardiovascular 4D MRI in Congenital Heart Disease		93.837	5R01HL115828-07	567,152	182,159
HCMR - Novel Predictors of Outcome in Hypertrophic Cardiomyopathy	100	93.837	Study# 2222/0003//1U01HL117006-01A1	13,096	—
Heart Failure Clinical Research Network Coordinating Center - HIV/CHART	66	93.837	203-7618//5U10HL084904-12	630	—
Hemodynamic Loading of the Left Ventricle and Aorta in Aortic Valve Disease		93.837	5K25HL119608-05	(461)	—
High Resolution and Functional MRI Assessment of Intracranial Atherosclerotic Plaque		93.837	5R21HL130969-02	75,363	—
Impact of Disparities Affecting Survival among Advanced Heart Failure Patients and Transplant Recipients	52	93.837	1215-SUB//R01HL141892-02	5,193	—
Implementation science to improve cardiovascular outcomes among liver transplant recipients		93.837	5K23HL136891-03	162,172	—
Improve PAD PERformance with METformin. The PERMET Trial		93.837	5R01HL131771-03	696,180	87,995
Individual response to vitamin D treatment	265	93.837	UWSC9381//5R01HL096875-07	45,044	—
INVESTED - : Influenza Vaccine to Effectively Stop Cardio Thoracic Events and Decompensated heart failure (INVESTED)	31	93.837	SUB 5.22.17//5U01HL130163-02	18,738	—
Joint Effect of Malpractice Risk and Financial Incentives on Cardiac Testing	85	93.837	14-M49//5R01HL113550-05	128,589	—
Low Intensity Exercise intervention for peripheral artery disease: The LITE Trial		93.837	5R01HL122846-04 REVISED	423,948	144,823
Low-Profile 3D-Printed Radiopaque Bioresorbable Vascular Scaffolds		93.837	1R01HL141933-01A1	247,420	—
Maternal-Offspring Metabolites: Family Intervention Trial (MOMFIT)		93.837	3U01HL114344-05S1	70,394	—
Mechanical circulatory support: Measures of adjustment and quality of life		93.837	5R01HL130502-04	707,245	286,762
Mechanisms of sulfonyleurea receptor mediated cardiomyopathy		93.837	5R01HL122109-04 REVISED	230,446	93,372
Mechanistic insights into HIV-mediated heart failure with preserved ejection fraction		93.837	5R01HL140973-02	612,787	—
Mechanistic insights into the deleterious effects of SIRT2 in the heart under stress conditions		93.837	5R01HL138982-02	602,322	—
Mediators of Atherosclerosis in South Asians in America	217	93.837	8696sc//R01HL093009	66,599	—
Metabolic pathways to cardiovascular disease: A multi-omics approach	248	93.837	5113277//1R01HL143885-01A1	4,474	—
Metabolic Pathways Underlying the Contrasting Sodium-BP and DASH/OmniHeart-BP Relationships		93.837	5R01HL135486-03	603,150	364,439
Metabolomics-Measured Urinary Metabolites/Diet & BP. 17 Random Samples		93.837	5R01HL084228-08	(2,017)	—
Methods to Improve Personalized Cardiovascular Disease Prevention Across the Life Course		93.837	5R01HL136942-03	364,424	31,456
MMP Responsive Nanoparticles for Treating Acute Myocardial Infarction	216	93.837	9796869 // SR01HL139001-02	329,754	—
Modeling the role of the genome in chemotherapy induced cardiotoxicity using iPSC		93.837	5R00HL121177-04	(126,644)	—
Modulating senescence in induced pluripotent stem cell-derived endothelial cells for vascular disease modeling and therapy		93.837	5F32HL137292-02 REVISED	57,069	—
Modulation of Macrophage Function through Alternative Splicing in Cardiometabolic Diseases		93.837	5K08HL135348-03	262,456	—
Molecular mechanisms of Foxc-mediated angiogenesis		93.837	5R01HL144129-02	325,647	—
MRI of Diffuse Left Ventricular Fibrosis in Atrial Fibrillation		93.837	5R01HL116895-05 REVISED	340,984	—
Myofibrillar proteins in cardiomyopathy and arrhythmias		93.837	1K99HL141698-01A1	57,984	—
Myosin binding protein H-like and its role in cardiomyopathy		93.837	5F32HL131304-03 REVISED	21,826	—

NORTHWESTERN UNIVERSITY
 Supplementary Schedule of Expenditures of Federal Awards
 Year ended August 31, 2019

Cluster title/Federal grantor/Subagency/Project title	Pass-through ID number	CFDA	Sponsor award number	Federal expenditures	Passed-through to subrecipient:
Department of Health and Human Services (continued):					
Neonatal Long QT Syndrome and Sudden Infant Death		93.837	5R01HL083374-08	\$ (30,139)	—
Nonenhanced 3T QISS MR Angiography of the Peripheral Arteries	151	93.837	EH15-107-S2//5R01HL130093-04	49,484	—
Non-Invasive Biosensors To Detect Cardiovascular Changes In Heart Failure	87	93.837	RG884-G2//R01HL130619	52,665	9,429
Northwestern CORE Clinical Research Site: Trans-omics for HIV/AIDS Research		93.837	1U01HL146240-01 REVISED	739,834	—
Northwestern University Molecular and Translational Cardiovascular Training Program		93.837	5T32HL134633-03	237,097	—
Novel Vehicles for Targeted Cardiovascular Repair		93.837	4R01HL116577-04	(460)	—
Novel Vehicles for Targeted Cardiovascular Repair		93.837	4R01HL116577-04	45,721	45,721
nuMOM2b Hearth Health Study Capitation Funding Memorandum of Understanding (MOU)	170	93.837	0214047//1U10HL119991	9,312	—
Oxidative stress contributes to atrial fibrillation by causing remodeling of the autonomic nervous system		93.837	5R01HL140061-02	481,691	—
PAI-1 and Vascular Senescence		93.837	5R01HL051387-21	(114,488)	—
PAI-1 and Vascular Senescence		93.837	5R01HL051387-23	641,431	100,063
Pathogenesis of lung injury mediated by lung-restricted antibodies		93.837	1R01HL147290-01	118,674	—
Pathophysiological Significance of Atrial Fibrillation Electrogram Patterns		93.837	5R01HL125881-04	582,971	191,741
Patient Level Prediction of Clinical Outcomes and Cost-Effectiveness in SPRINT (Optimize-SPRINT)	54	93.837	4(G0011659-01)//5R01HL139837-02	41,069	—
Pediatric Replacement of the Pulmonary Valve - TOF Trial	48	93.837	ACT#3201200621; POW#63055-RSUB//1R34HL1	45,698	—
Precision Medicine for Dilated Cardiomyopathy in European and African Ancestry	155	93.837	60071077//5R01HL128857-04	48,086	—
PRE-DETERMINE: Biologic Markers and MRI SCD Cohort Study	31	93.837	116706//2R01HL091069-06	88,358	—
Pregnancy as a Window for Future Cardiovascular Health		93.837	4U10HL119992-04	35,122	34,749
Pregnancy as a Window to Future Cardiovascular Health: Adverse Pregnancy Outcomes	170	93.837	888-15-16-12//12-312-0214047-52917L	39,247	—
Pregnancy as a Window to Future Cardiovascular Health: Adverse Pregnancy Outcomes - Heart Health Study	170	93.837	7-312-0214047-52577L//1U10HL119991	14,831	—
Pre-Procedural Evaluation of High-Risk Patients using Next-Generation Radial QISS	151	93.837	EH17-147-S1//5R01HL137920-02	18,984	—
Prox1 in Mammalian Lymphangiogenesis		93.837	5R01HL073402-18	475,632	—
Pseudomonas Genomic Signatures Associated With Persistence in Cystic Fibrosis		93.837	5R2HL129930-02	69,650	—
Quantitative MRI for the assessment of subclinical CAD in T2DM		93.837	5K01HL121162-05	155,204	—
Rapid Real-Time Cardiovascular MRI for Detecting Coronary Artery Disease		93.837	5R01HL138578-03	352,834	16,440
Redox Regulation of Vascular cGMP Signaling in Neonatal Lungs		93.837	5R01HL109478-08	203,745	23,298
Regulating fibrosis and growth through latent TGFbeta binding proteins		93.837	5R01HL140938-02	225,991	—
Regulation of cardiac metabolism and heart failure by tristetraprolin		93.837	5F31HL132552-04	37,682	—
REPRIEVE A5332 and A5333s	129	93.837	Mod. 6/PS#225707//U01HL123336-05	69,985	—
Research Training in CVD Epidemiology and Prevention		93.837	2T32HL069771-16	107,944	—
RESEARCH TRAINING IN CVD EPIDEMIOLOGY AND PREVENTION		93.837	5T32HL069771-15 REVISED	96,824	—
Respiratory and Metabolic Adaptation to Hypoxia		93.837	5R01HL035440-30	279,013	73,102
Response of the Gut Microbiome and Circulating Metabolome to Diet Intervention in Young Children: Ancillary Study to the Keeping Idea Cardiovascular Health Family Intervention Trial (KIDFIT)	16	93.837	901552-NU//1K23HL145101-01	4,906	—
Risk Factors for Ischemic Stroke	31	93.837	113896//5R01HL08851-09	18,388	—
Role of SNRK in cardiac metabolism and development of heart failure		93.837	5R01HL127646-04	226,157	—
Role of Spleen educated monocytes in mediating ischemia-reperfusion injury following lung transplan		93.837	1R01HL147575-01	121,913	—
Role of Valve-Mediated Hemodynamics on Bicuspid Aortopathy		93.837	5R01HL133504-02 REVISED	10,820	464
Sarcoglycan in Myopathy and Muscle Membrane Stability		93.837	2R01HL061322-20	123,699	—
Sarcoglycan in Myopathy and Muscle Membrane Stability		93.837	5R01HL061322-19	159,078	—
Social and Cultural Influences on Cardiovascular Risk in South Asians		93.837	5R01HL120725-04	36,518	5,670
Social Network Characteristics and Cardiovascular Health in South Asian Americans		93.837	1F32HL149187-01	1,360	—
Spontaneous cardiac fibrosis in PAI-1-deficient mice and men: A rare mutation informs a common molecular pathophysiology		93.837	1R01HL142761-01A1	59,830	—
Statistical methods for estimating relative intensity physical activity and its association with cardiometabolic disease		93.837	5R01HL131606-02 REVISED	84,559	10,627
Statistical methods to correct for measurement error in self-reported dietary data from lifestyle intervention trials		93.837	5R01HL127491-03	361,192	23,999
TAM-Kinases in Transplant		93.837	5R01HL139812-02	324,104	—
TELmisartan plus Exercise to improve functioning in PAD: The TELEX Trial		93.837	5R01HL126117-05	657,914	164,059
The Cleveland Clinic Innovation Accelerator	52	93.837	1115-Sub Amd 2 // U54HL119810-06	16,808	—
The Role of CD99L2 in Leukocyte Transendothelial Migration in vitro and in vivo		93.837	5F31HL131355-03	37,460	—
The Role of Gut Microbiota in Neointimal Hyperplasia After Vascular Injury		93.837	5K08HL130601-04	182,491	—
The role of p21-activated Kinase (Pak1) in Atrial Fibrillation	175	93.837	14091801//5R01HL128330-03	75,556	—
The Roles of Endothelial PECAM and the LBRC in Leukocyte Transmigration		93.837	5R01HL046849-28	387,447	—
The WHI Strong and Healthy SilenT Atrial fibrillation Recording study (WHISH STAR)	190	93.837	61526610-125216//1R01HL136390-01	15,001	—
Tissue sodium, inflammation, and blood pressure in MESA	271	93.837	VUMC 59440//5R01HL133860-03	164,371	—
TRANSFORM-HF (ToRsemide compArison with furoSemide FOR Management of Heart Failure) Study	281	93.837	GR104831(CON-80001527)//7U01HL125511-02	3,796	—
Transition from Risk Factors to Heart Failure: Prevalence, Pathogenesis, and Phenomics	277	93.837	WFUHS114489//R01HL127028	442,716	—

NORTHWESTERN UNIVERSITY
 Supplementary Schedule of Expenditures of Federal Awards
 Year ended August 31, 2019

Cluster title/Federal grantor/Subagency/Project title	Pass-through ID number	CFDA	Sponsor award number	Federal expenditures	Passed-through to subrecipient
Department of Health and Human Services (continued):					
Understanding the contributions of the neighborhood social environment to cardiovascular disease risk factors in a multi-ethnic cohort o Chicago women		93.837	5R03HL145223-02	\$ 63,951	—
Vascular Surgery Scientist Training Program		93.837	2T32HL094293-11	49,635	—
Vascular Surgery Scientist Training Program		93.837	5T32HL094293-08	246,646	—
Vimentin-mediated regulation of the inflammasome in acute lung injury		93.837	5R01HL128194-04	462,608	—
				26,415,985	3,601,351
A novel data science and network analysis approach to quantifying facilitators and barriers of low tidal volume ventilation in an international consortium of medical centers					
	151	93.838	EH17-325-S7//1R01HL140362-01A1	165,848	—
A Systems Biology Approach to Mapping Aging in the lung		93.838	5F32HL136111-02	55,231	—
Addressing Psychological Risk Factors Underlying Smoking Persistence in COPD Patients		93.838	5K23HL138165-02	2,217	—
Approaches to Genetic Heterogeneity of Obstructive Sleep Apnea	250	93.838	570229//5R01HL134015-03	75,368	—
Azithromycin and the Airway Microbiome in Asthma	219	93.838	P064388-02 // 5R34HL136991-02	81,355	—
Chicago Metropolitan Asthma Consortium for severe/exacerbation-prone asthma	219	93.838	FP066077-A//5UG1HL139125-02	107,077	—
CNS Pathways Integrating Respiratory and Metabolic Control		93.838	5R01HL122921-04	3,630	—
Differential role of tissue-resident and monocyte-derived alveolar macrophages in the development of pulmonary fibrosis		93.838	1R56HL135124-01	114,255	—
Donor nonclassical monocytes initiate lung injury following transplantation		93.838	1R01HL145478-01	168,601	—
Glucocorticosteroid Action in Inflammatory Disease		93.838	5R37HL068546-35	426,056	—
Glycobiology of Inflammatory Lung Diseases	118	93.838	2002969467//5P01HL107151-07	(25,494)	—
High carbon dioxide impairs lung repair		93.838	5K08HL125940-05	160,166	—
Hypercapnia and Suppression of Anti-viral Host Defense		93.838	5R01HL131745-03	401,798	—
Integrated analysis of autonomic biomarkers in prematurity-related ventilatory control: determination of neurorespiratory maturation and predictors of co-morbidity risk	16	93.838	901513-NU//5U01HL133704-02	1,712	—
Losartan Effects on Emphysema Progression Trial (LEEP)	13	93.838	5U01HL128954-03	26,470	17,200
LUBAC Mediated Epithelial Signaling During Influenza A Infection		93.838	5F31HL132454-03	39,386	—
Lung Function Decline and Disease Risk from Young Adulthood to Middle Age		93.838	5R01HL122477-05	444,055	249,108
Macrophage Modulation of Lung Fibrosis		93.838	5R01HL134375-03	948,995	—
Mechanisms of Hydrocortisone Regulation of the Perinatal Pulmonary Vasculature		93.838	5K08HL124295-03	158,077	136,080
Metabolic Regulation of Pulmonary Vascular Remodeling		93.838	5R01HL122062-04	174,054	86,520
MFU Network Capitation for ALPS Study	85	93.838	Agmt 4/25/14//U01HL098354	(19,994)	—
miR-17-92 Haploinsufficiency Influences Alveolar and Vascular Endothelial Development	16	93.838	901527-NU//1K08HL140152-02	15,272	—
Multi-Level Understanding of Social Contributors to SES Disparities in Asthma		93.838	4R01HL108723-05	100	—
Network Management Core (NEMO) for the Pulmonary Trials Cooperative (PTC) - CleanUp	251	93.838	9012549(130129-26)//5U01HL128954-03	10,594	—
Network Management Core (NEMO) for the Pulmonary Trials Cooperative (PTC) - Insight	251	93.838	9012549(130129-26)//5U01HL128954-03	(2,804)	—
Network Management Core (NEMO) for the Pulmonary Trials Cooperative (PTC) - Rethink	251	93.838	9012549(130129-21)//5U01HL128954-03	(2,681)	—
Network Management Core (NEMO) for the Pulmonary Trials Cooperative (PTC) (Insight)	57	93.838	001-Amend2//5U01HL128954-04	9,188	—
Network Management Core (NEMO) for the Pulmonary Trials Cooperative (PTC) (RETHINK)	57	93.838	002-Amend1//5U01HL128954-04	9,048	—
Ohio Consortium Clinical Center for the NHLBI Prevention and Early Treatment of Acute Lung Injury (PETAL) Clinical Trials Network	52	93.838	989-SUB//5U01HL123009-05	25,553	—
Pathophysiology of Acute Lung Injury		93.838	5P01HL071643-15	1,391,855	—
PETAL Network: CLOVERS- Crystalloid Liberal or Vasopressors Early Resuscitation in Sepsis	52	93.838	972-SUB//5U01HL123009	2,047	—
PETAL Network: VIOLET-Vitamin D to Improve Outcomes by Leveraging Early Treatment	52	93.838	869-SUB//5U01HL123009	14	—
Pulmonary Complications in a Birth Cohort after a Randomized Trial of Exposure to Antenatal Corticosteroids: the ALPS Follow-Up Study	85	93.838	1-AF-28//5R01HL098354-05	18,696	—
Pulmonary Complications in a Birth Cohort after a Randomized Trial of Exposure to AntenatalCorticosteroids: the ALPS Follow-Up Study	85	93.838	Agmt 6/7/17//R01HL098354	35,183	—
Pulmonary microvascular perfusion in the Multi-Ethnic Study of Atherosclerosis	54	93.838	5(GG010919-05)//5R01HL077612-12	20,453	—
PVDOMICS: Pulmonary Vascular Disease Phenomics Program (U01HL125177)	52	93.838	851-SUB//5U01HL125177-04	10,591	—
Regulation of airway epithelial cell-mediated inflammation by CRAC channels		93.838	1R01HL149385-01	76,299	—
Regulatory T cell Uhrf1 and DNA methylation in repair of acute lung injury		93.838	5K08HL128867-05	171,844	—
Resolution of Diffuse Inflammatory Lung Injury in Neonatal Mice	118	93.838	2004008239//2R01HL114800-05	32,515	—
Role and Regulation of Sodium, Potassium ATPase in Lung		93.838	5R37HL048129-23	56,118	—
Role of hypercapnia on the lung airways		93.838	1R01HL147070-01	118,590	—
Self-managed behaviors among COPD patients with multi-morbidity	99	93.838	0255-8785-4609//5R01HL126508-05	34,997	—
Self-management Behaviors Among COPD Patients with Multi-morbidity	99	93.838	0255-8784-4609//5R01HL126508-04	188,148	—
The American Lung Association (ALA) Lung Health Cohort		93.838	1U01HL146406-01	22,698	—
The clinical impact of longitudinal measures of cardiac and pulmonary vascular morphology in smokers	31	93.838	119856//5R01HL116473-07	14,177	—
The deleterious effects of hypercapnia on the lungs		93.838	5R01HL085534-12 REVISED	76,042	—
The Role of Placental Maternal Vascular Underperfusion in Neonatal Pulmonary Hypertension		93.838	5R01HL139798-02 REVISED	337,344	137,096
The transcription factor Miz1-mediated mechanisms of lung aging		93.838	5R01HL141459-02	254,540	—
Third Coast HIV-related Cardiovascular and Sleep Disorders K12 Career Development Program (TC-CSK12)	219	93.838	FP068767-01//5K12HL143959-02	65,362	—
Training Program In Lung Sciences		93.838	2T32HL076139-16	54,691	—

NORTHWESTERN UNIVERSITY
 Supplementary Schedule of Expenditures of Federal Awards
 Year ended August 31, 2019

Cluster title/Federal grantor/Subagency/Project title	Pass-through ID number	CFDA	Sponsor award number	Federal expenditures	Passed-through to subrecipient:
Department of Health and Human Services (continued):					
Training Program In Lung Sciences		93.838	5T32HL076139-14	\$ 339,110	—
Wnt/beta-catenin signaling and innate immunity in pulmonary fibrosis		93.838	1R56HL127245-01A1	(41,336)	—
Wnt-beta-catenin cross interactions in alveolar macrophages and epithelial cells in persistence of SSc-ILD		93.838	5R01HL134800-02	748,019	—
				7,601,330	626,004
1/2 CATHETER-DIRECTED THERAPY FOR CHRONIC DVT(C-TRACT TRIAL)	278	93.839	WU-18-261//UG3HL138325	13,629	—
Aberrant megakaryopoiesis in the myeloproliferative neoplasms.		93.839	5R01HL112792-07	547,667	102,117
Defining the Role of IQGAP1 in Leukocyte Transmigration in vitro and in vivo		93.839	5F30HL134202-04	49,497	—
EHR Anticoagulants Pharmacovigilance	238	93.839	S5111000040313//7R01HL125085	129,230	—
Generating Human Cord-Blood-Derived Functional Megakaryocytes and Platelets	229	93.839	7800 Amd 2 // R01HL130760-03 / R01HL130760	134,052	—
Membrane-Cytoskeletal Remodeling in Platelet Biogenesis		93.839	5K08HL114871-05	122,266	—
Multiscale Modeling of Myelodysplastic Syndromes	275	93.839	FP00000825_SA003//5R01HL128173-04	16,196	—
Tailored Adaptation of the AHRQ VTE QI Guide to Local Hospital Context		93.839	1K08HL145139-01	56,810	—
Vascular-Targeting Genomic and Genetic Strategies for Acute Chest Syndrome	107	93.839	IN4687816NWX/2R01HL111656-06	19,198	—
				1,088,545	102,117
Transforming Hypertension Management in Nigeria		93.840	1R01HL144708-01	194,154	95,170
"RISK" The nervous joint: New concepts in the development of osteoarthritis.	175	93.846	16100402-Sub01//1R61AR073576-01	205,311	—
3-D printed hyperelastic bone composites for bone regeneration and spine fusion		93.846	5R01AR069580-04	353,767	28,547
A Regulatory Checkpoint in the Pathogenesis of Inflammatory Arthritis		93.846	5R01AR064349-05 REVISED	154,051	—
AAD-PEPR: Asthma and Atopic Dermatitis Validation of PROMIS Pediatric Instruments		93.846	1U19AR069526-01 REVISED	901,624	286,243
Aberrant TLR responses driving organ fibrosis in systemic sclerosis		93.846	2R56AR042309-22A1	460,358	—
Algorithms to Identify Systemic Lupus from Electronic Health Record Data		93.846	1R21AR072263-02	174,312	—
Association of genetic and autoantibody signatures with SLE clinical course	206	93.846	000504653-SC002//5R01AR064820-03	649	—
Brain Pathophysiology of Osteoarthritis Pain		93.846	1R01AR074274-01A1	322,471	—
Breaking down barriers: defining the role of EphA2 in building epidermal tight junctions in atopic dermatitis		93.846	5K01AR072773-02	75,713	—
Cadherin clusters and actin filaments		93.846	5R01AR070166-04	348,085	—
Causes and Roles of Hypercitrullination in Preclinical Rheumatoid Arthritis	31	93.846	117944//5R01AR070171-02	12,150	—
Central Pain Mechanisms, Pain Intensity and Drug Response in Rheumatoid Arthritis		93.846	7R01AR064850-06	254,413	81,651
Characterization of the lupus nephritis microRNAsome	206	93.846	000518393-002//1R01AR073850-01	44,445	—
Contribution of Adipocytes and Adipose Secreted Factors to Fibrosis in Systemic Sclerosis		93.846	1K08AR070285-02	(2,954)	—
Core Center for Clinical Research at Northwestern University		93.846	5P30AR072579-03	885,511	27,394
Damage-Associated Molecular Patterns Driving Fibrosis Progression in Scleroderma		93.846	1R01AR074997-01	36,128	—
Defining Components of Physical Therapy Achieving Maximum Function after TKR		93.846	7R01AR071048-03	35,493	—
Desmoplakin Assembly and Function in Epidermis (R37 MERIT Extension Application R37AR043380)		93.846	5R37AR043380-24	432,835	—
Development of a Novel RA/Atherosclerosis Mouse Model		93.846	5R01AR064546-05	43,254	—
Dose-specific Responsiveness of Glucocorticoid Receptor-driven Transcription in Skeletal Muscle (Predoc Fellowship for Isabella M. Salamone)		93.846	1F31AR073655-01A1	9,156	—
Epha/Ephrin - A Signaling in Epidermal Differentiation and Disease		93.846	4R01AR062110-05	(14,587)	—
EphA/Ephrin-A Signaling in Epidermal Differentiation and Disease		93.846	5R01AR062110-04	(80,641)	—
Epidermal polarization: the desmosomal cadherin desmoglein 1 regulates tissue mechanics and barrier function		93.846	1K01AR075087-01	28,423	—
Evolving Adaptive and Effector Mechanisms from Pre-RA Through Established Disease	223	93.846	FY17.090.001//5UJ2AR067681-05	245,231	108,768
Failed Regeneration in the Muscular Dystrophies: Inflammation, Fibrosis and Fal	225	93.846	SUB00001921//U54AR052646	625	—
Failed Regeneration in the Muscular Dystrophies: Inflammation, Fibrosis and Fal	225	93.846	SUB00001921//U54AR052646	7,264	—
Failed Regeneration in the Muscular Dystrophies: Inflammation, Fibrosis and Fal	225	93.846	UFDSP0012252//U54AR052646	7,365	—
Function of Desmoglein 1/Pemphigus Foliaceus Antigen		93.846	5R01AR041836-27	430,143	—
Gene expression signatures for treatment response in systemic sclerosis	40	93.846	Agr. 10/06/2015//5R44AR061920-03	(12,213)	—
Glycosphingolipids Mediate Diabetic Wound Healing Impairment		93.846	5R01AR068375-04	452,210	—
Impaired osteoblast and osteocyte maturation in the pathogenesis of renal osteodystrophy	214	93.846	1652GWA093//1R21AR073977-01	51,174	—
Inflammasome adaptor and effectors in Cryopyrinopathies and crystal arthropathies		93.846	5K01AR066739-04 REVISED	18,337	—
Inflammatory arthritis: mechanistic insights into initiation and progression		93.846	5R01AR070025-03	490,329	—
Inter-junctional signaling in epithelial junctional complex		93.846	5R01AR044016-23	525,409	—
Knee OA: Predictors and Outcomes of Physical Inactivity-Activity Transitions		93.846	4R01AR054155-09	22,747	4,107
Knee OA: Predictors and Outcomes of Physical Inactivity-Activity Transitions		93.846	5R01AR054155-08	(5)	(5)

NORTHWESTERN UNIVERSITY
 Supplementary Schedule of Expenditures of Federal Awards
 Year ended August 31, 2019

Cluster title/Federal grantor/Subagency/Project title	Pass-through ID number	CFDA	Sponsor award number	Federal expenditures	Passed-through to subrecipient
Department of Health and Human Services (continued):					
Long-term Significance of Pre-radiographic Lesions in Persons at Risk for Knee OA		93.846	5R01AR065473-05	\$ 654,607	319,915
Lupus Intervention Fatigue Trial (LIFT)		93.846	5R01AR071091-02	278,183	26,151
Mapping Modifiers of Cardiomyopathy in Muscular Dystrophy	225	93.846	UFDSP00011909/U54AR052646	(31,974)	—
Mapping Modifiers of Cardiomyopathy in Muscular Dystrophy	225	93.846	UFDSP00012258/U54AR052646	284,311	—
Mechanisms Underlying Heterotopic Ossification		93.846	5R01AR066539-04	454,738	—
Molecular biomarkers of improvement for patients with systemic sclerosis in an open label trial of mycophenolate mofetil	60	93.846	R284/1R21AR068035-02	(13,281)	—
Molecular Pathways of Pain Generation in Osteoarthritis	175	93.846	10012005-Sub01/5R01AR06036-08	11,247	—
NIAMS Multidisciplinary Clinical Research Center in Rheumatology		93.846	5P60AR064464-05	98,429	1,988
Noninvasive tools for assessing muscle structure and function		93.846	5R01AR071162-04	577,365	247,291
Northwestern University Skin Disease Research Center Resource-based Center		93.846	1P30AR075049-01	16,006	—
Northwestern University Skin Disease Research Core Center		93.846	5P30AR057216-10	610,783	—
Novel Role for A20 in Fibrosis Susceptibility		93.846	5R21AR074292-02	160,509	—
OAI Ancillary- Prediction of Incident and progressive OA from imaging biomarkers	208	93.846	238323/5R01AR066601-05	18,221	—
Osteoarthritis Progression And Sensory Pathway Alterations	175	93.846	12052504-Sub05/2R01AR064251-06A1	33,454	—
Post Graduate Program in Cutaneous Biology		93.846	4T32AR060710-05	199	—
Post Graduate Program in Cutaneous Biology		93.846	5T32AR060710-07	113,621	—
Postdoctoral Rheumatology Training		93.846	5T32AR007611-18	288,088	—
Quantifying the Biomechanical and Neural Factors Contributing to Shoulder Instability		93.846	1F31AR074288-01	33,767	—
Quantifying Underuse and Overuse of Knee Replacement		93.846	5R21AR069867-03 REVISED	83,322	12,459
Regulation of the Profibrotic Mechanisms of MACRO+ Myeloid Cells in Scleroderma		93.846	5R21AR073371-02	262,182	—
Regulators of Epidermal Gene Expression		93.846	5R00AR065480-04	100,275	—
SBIR Phase II - Radikal Therapeutics	179	93.846	salosAgmt_03/27/18//2R44AR065886-02A1	149,040	—
Selective Inhibition of CYP26A1 in the Skin for the Treatment of Ichthyosis	63	93.846	2R44AR069416-02	19,127	—
Selective Inhibition of CYP26A1 in the Skin for the Treatment of Ichthyosis	63	93.846	NIAMS/1R41AR069416-01A1	(45,503)	—
Simultaneous Targeting of IRE1a in B Cells and Macrophages for Lupus Therapy		93.846	5R01AR066634-05	311,715	58,140
Supramolecular nanofibers for recombinant growth factor-free spine fusion		93.846	5R01AR072721-02	894,100	32,491
Targeting NAD metabolism to treat systemic sclerosis		93.846	5R21AR074523-02	185,066	31,036
The molecular basis of Interleukin-31 driven itch		93.846	1R01AR073279-01A1	117,977	—
The pathogenic mechanism of anti-phosphatidylethanolamine antibodies		93.846	5R21AR071705-02	233,767	16,639
Translation of novel and repurposed drugs to address the acute and late effects of mustard exposure		93.846	7U01AR071168-02	752,503	15,072
Treatments Against RA and Effect on FGD PET CT: The TARGET TRIAL	31	93.846	ps#113296/5U01AR068043-03 REVISED	625	—
Validation of PROMIS Measures in Children with Brain Tumors		93.846	5R01CA174452-04 REVISED	(17,483)	—
Validation of PROMIS Measures in Children with Brain Tumors		93.846	5R01CA174452-04 REVISED	(170)	(170)
Vasculitis Clinical Research Consortium (VCRC)	250	93.846	575155/U54AR057319-16	4,697	—
				13,558,096	1,297,717
"HiLo" Pragmatic trial of higher vs. lower serum phosphate target in patients undergoing hemodialysis	66	93.847	203-7931/1UG3DK118748-01	38,695	—
10/22 Diabetes Prevention Program Outcomes Study (DPPOS) Phase 3- Research Project		93.847	5U01DK048380-26	386,113	—
A Culturally Targeted Transplant Program to Increase Live Donation in Hispanics		93.847	5R01DK104876-04	549,979	225,947
A mixed methods evaluation of social support and homophily in weight loss		93.847	5F31DK120151-02	36,409	—
A Multi-Center Group to Study Acute Liver Failure	261	93.847	GMO-161131/5U01DK058369-19	47,760	—
A Novel Approach to Phosphorus Lowering in Patients with Chronic Kidney Disease	272	93.847	08649005-321072/5U01DK97093-05	14,357	—
A Phase 2a Study to Evaluate the Safety and Tolerability of OCR-002 (ornithine phenylacetate) in the Treatment of Patients with Acute Liver Failure/Severe Acute Liver Injury (STOP-ALF) -- A Multi-Center Group to Study Acute Liver Failure	262	93.847	GMO-170910/5U01DK058369-19	1,159	—
Acute Liver Failure Study Group 13C-Methacetin Breath Test for the Prediction of Outcome in Acute Liver Failure	261	93.847	GMO160216/5U01DK058369-19	1,159	—
Altered Microbiome of Chronic Pelvic Pain		93.847	5R01DK103769-04	585,174	122,740
Antifibrotic Actions of SARA		93.847	1R01DK105055-02	341,056	91,962
Barrier integrity, microbiome and HIV target cell interactions in the human male genital tract pre and post circumcision		93.847	5R01DK108434-03	557,635	332,685
Basic Science Training Grant in Urology		93.847	5T32DK062716-14	127,777	—
Cholestasis and the Unfolded Protein Response		93.847	5R01DK093807-07	376,561	—
Circadian Control of Nutrient-Sensing Pathways Through Clock-HIF Interactions in Skeletal Muscle		93.847	5R03DK118012-02	84,844	—
Circadian Genes and Adipose Function: Impact of Chronotype, Obesity and Race	219	93.847	FP055658/5R01DK103014-04	13,538	—
Control of islet beta specific Pdx-1 and MafA transcription	270	93.847	UNIV595677/5R01DK050203-20	191,717	—
Coordinating Pragmatic Primary care Population management for Obesity (C3PO)		93.847	5R34DK114773-02	194,277	—
Cure GN 2.0 - UNC-PCC	248	93.847	5115400/2U01DK100867-07	185	—
Defining bacterial virulence, cAMP and PKA in necrotizing enterocolitis		93.847	5K08DK106450-04	147,464	147,420
Development, cellular plasticity and homeostasis of the exocrine pancreas		93.847	5R01DK106266-05	355,688	—

NORTHWESTERN UNIVERSITY
 Supplementary Schedule of Expenditures of Federal Awards
 Year ended August 31, 2019

Cluster title/Federal grantor/Subagency/Project title	Pass-through ID number	CFDA	Sponsor award number	Federal expenditures	Passed-through to subrecipient
Department of Health and Human Services (continued):					
Diabetes Risk Education and Communication Trial (DiRECT) for Primary Care Patients with Prediabetes		93.847	5R34DK113541-02 REVISED	\$ 161,852	46,521
Disordered Tissue Biomechanics as a Driver of Esophageal Disease		93.847	5P01DK117824-02	1,254,795	72,020
EDIC Hypoglycemia-Arrhythmia Study	38	93.847	RES513291/5U01DK094157-08 REVISED	18,176	—
EDIC Skeletal Health Study	38	93.847	RES514018/5U01DK094157-08 REVISED	8,958	—
Effect of Barrier Function on HIV Interactions in the Glans after Circumcision		93.847	5R21DK105865-02	62,261	—
Effect of Pitavastatin on Kidney Function in HIV-infected Persons	31	93.847	UAB FUND#114959/R01DK108438-02	9,714	—
Effectiveness of Physiologic Testing in PPI Non-Responders		93.847	5R01DK092217-06	404,185	196,723
Effects of Biomedical Risk Factors on Neuro-cognition Using MRI: Long term follow-up of the Diabetes Control & Complications Trial/Epidemiology of Diabetes Interventions and Complications Study Cohort	38	93.847	RES512846/DK114812-01/3500-07249 (Case)	27,144	—
Epidemiology of Diabetes Interventions and Complications (EDIC)	38	93.847	RES511132/4U01DK094157-06S1	87	—
Epidemiology of Diabetes Interventions and Complications (EDIC)	38	93.847	RES513291/5U01DK094157-08 REVISED	136,758	—
Estrogen and Abdominal Muscle Fibrosis		93.847	1R01DK121529-01	46,681	—
Expanding live donor kidney transplantation through advocacy training and social media	118	93.847	2003447902/5R01DK1119662-03	139,262	—
FGF23 and Cardiovascular Disease in CKD	66	93.847	2036138//7R01DK081374-11	136	—
Functional Retinal Imaging to Monitor Pharmacotherapies in Diabetic Retinopathy		93.847	1DP3DK108248-01 REVISED	408,494	—
GATA1 Mutation in Defective Erythropoiesis		93.847	4R01DK101329-05	94,968	—
GDCN Clinical Center – Advancing Clinical Research in Primary Glomerular Diseases, Fixed Price	248	93.847	5113027//SUM1DK100867-06 REVISED	1,703	—
GDCN Clinical Center – Advancing Clinical Research in Primary Glomerular Diseases, UM1 DK100867-06	248	93.847	5112858//SUM1DK100867-06 REVISED	12,172	—
Genetics and Evolution of Fetal Human Fat Accretion During Development		93.847	5R01DK099820-05	206,938	—
Genetics and Genomics of Maternal Glycemia During Pregnancy		93.847	5R01DK097534-05	194,881	—
Genito-urinary Microbiological Determinants of Self-Perceived Bladder Health	15	93.847	Agmt 9/4/18/U01DK106786	13,674	—
Genomic Basis for the Circadian Regulation of B-cell Function and Glucose Homeostasis		93.847	5F30DK116481-02	51,770	—
Glucocorticoid and circadian clock coregulation of insulin sensitivity and metabolism		93.847	1K01DK121875-01	12,286	—
Health and Economic Impacts of Coverage Requirements and Health System-Community Coordination for Diabetes Prevention		93.847	5R18DK110741-03	469,060	19,428
Health literacy intervention to improve diabetes outcomes among rural primary care	209	93.847	50961//5R01DK107572-04	96,513	—
Home sleep and circadian phase: mediators of racial disparities in diabetes risk		93.847	7R01DK095207-06	123,728	(28)
Hyperglycemia and Adverse Pregnancy Outcome (HAPO) Follow Up Study		93.847	4U01DK094830-05 REVISED	534,067	19,753
Impact of phosphate and FGF23 reduction on intermediate end points in CKD		93.847	5R01DK102438-05	706,224	447,665
Impact of Pulse Rate on Swallowing Impairment Assessment and Radiation Exposure	136	93.847	MUSC16-102-8A028 // 5R01K098222-05	(66)	—
Improving Diabetes Risk Assessment and Screening in Minority-Predominant Community Health Center Patients		93.847	1R21DK112066-01	34,820	13,035
Inflammatory Pathways in BPH/LUTS	151	93.847	EH17-341-S1//1R01DK117906-01	231,148	—
Integration of Feeding Time and Glucose Metabolism by the Circadian Gene Network		93.847	5R01DK090625-08	167,893	32,997
Interplay of Dietary Lipid and Circadian Dysregulation in Metabolic Syndrome		93.847	5R01DK100814-05	197,612	—
Kidney Therapeutics: Translating Discoveries into Prevention, Treatment and Cures for Kidney Diseases		93.847	5P30DK114857-02	767,868	—
Large-scale nutrigenetics and genomics in a tractable metazoan model	239	93.847	OSP2018042//5R01DK115960-02	277,876	—
Lipoteichoic acid mediated immune modulation of chronic pain		93.847	5R01DK108127-04	302,123	—
Lysosomes in neonatal enterocytes and their pathologies		93.847	5R01DK111032-04	224,281	—
Mast cells in male pelvic pain and lower urinary tract dysfunction		93.847	5R01DK083609-09	279,433	—
Mechanism of autophagy activation in the prevention of type 2 diabetes		93.847	5R01DK113170-03	472,622	19,203
Mechanisms of Salmonella Clearance by Neutrophils in the Intestinal Lumen		93.847	5R03DK116663-02	28,485	—
Med1 in Liver Metabolism, Regeneration and Cancer		93.847	5R01DK097249-05	127,454	—
Metabonomic Signatures of Insulin Resistance and Visceral Adiposity Changes in HIV-infected Adults on Newer Line Antiretroviral Therapy	16	93.847	901542-NU//7R21DK112720-02	8,898	—
Methylomics of prenatal GDM: Natural history & lifestyle intervention in children	160	93.847	1R01DK100790-50363-S2//5R01DK100790-04	45,912	—
Microenvironmental Signaling Cues to Model Glomerular Endothelial Cell and Podocyte Interactions		93.847	5F31DK108544-02	45,122	—
Molecular mechanisms for bone marrow failure and clonal progression during the innate immune response in Fanconi Anemia		93.847	1R01DK121354-01	170,303	—
Molecular Mechanisms of Epithelial Contribution to Esophageal Inflammation and Tissue Repair		93.847	5R01DK116988-02	306,781	—
Multifunctional Printed Scaffolds for Enhancing Hepatocyte Viability and Function		93.847	5K01DK099454-05	(12,223)	—
Neutrophil interactions with apical ICAM-1 regulate intestinal epithelial homeostasis		93.847	5K01DK101675-05	82,650	—
Nonhuman Primate Model of Bladder Regeneration Using Autologous Bone Marrow Cells		93.847	5R01DK109530-03	513,004	82,950
Novel Diagnostics and Therapeutic Targets for Calcification in CKD		93.847	5R01DK110087-04	371,691	118,381
Novel Role of Hepatic SEL1L-HRD1 ERAD in FGF21 Gene Transcription	242	93.847	SUBK00009305//1R01DK120330	254,262	—
Nuclear Repressors in Genomic Control of Healthful Obesity		93.847	5R01DK108987-04	284,738	—
NUKIDS: Scientist Training Program in Kidney Disease		93.847	5T32DK108738-04	235,804	—
NW University Program in Endo Diabetes and Hormone Action		93.847	5T32DK007169-40	297,431	—
Olfactory contributions to sleep-dependent food craving and calorie intake		93.847	1R21DK118503-01A1	96,870	—
Omega-3 derived epoxy fatty acids and sEH in pancreatitis-induced carcinogenesis		93.847	5R01DK107767-04	467,161	315
Optimization and control of hepatocyte activity via biofunctional modification		93.847	5K08DK101757-05	84,906	—
OPT-IN: Optimizing Intensive Lifestyle Intervention for Weight Loss		93.847	4R01DK097364-05	(8,520)	—
Pathogenesis of Diabetic Nephropathy		93.847	5R01DK060635-17	256,966	—

NORTHWESTERN UNIVERSITY
 Supplementary Schedule of Expenditures of Federal Awards
 Year ended August 31, 2019

Cluster title/Federal grantor/Subagency/Project title	Pass-through ID number	CFDA	Sponsor award number	Federal expenditures	Passed-through to subrecipient
Department of Health and Human Services (continued):					
Pelvic Pain and Depression		93.847	2U01DK082342-11	\$ 43,310	—
Pelvic Pain and Depression		93.847	5U01DK082342-09	662,282	3,781
PERL: A multicenter clinical trial of allopurinol to prevent GFR loss in T1D	119	93.847	100062//2UC4DK101108-02	58,033	—
Phenotype of urinary symptoms and relationships with genotype, sleep and obesity		93.847	4U01DK097779-06	328,703	159,082
Pilot Studies Targeting Mineral Metabolism in CKD		93.847	5U01DK099930-07	84,150	13,567
Preconceptional health of Latinas and its association with child adiposity	248	93.847	5112424//5R01DK116028-02	34,879	—
Predicting Newborn and Childhood Adiposity: An Integrated Omics Approach		93.847	5R01DK117491-02	435,547	196,075
Pregnancy-Related Risk Factors and Glucose Intolerance in Women during Midlife	121	93.847	RNG200279-05//R01DK106201	13,870	—
Prevention of Type-2 Diabetes: The Circadian System as a Novel Target for Long-Term Maintenance of Weight Loss	219	93.847	FP035726-02-H//SP30DK020595-40	(8,350)	—
Promoting Utilization of Kidneys by Improving Patient Level Decision Making		93.847	5R21DK108104-02 REVISED	25,799	—
Promotora Intervention for Metabolic and MentalHealth (PRIME2)		93.847	5R03DK109243-02 REVISED	62,190	21,151
Regulation of FGF23 by DMP1 in Health and in Chronic Kidney Disease (CKD)		93.847	5R01DK101730-05	419,981	43,953
Regulation of FGF23 in Chronic Kidney Disease (CKD) by iron and inflammation		93.847	5R01DK102815-05	304,842	9,491
Regulation of Ulcerative Colitis by mast cells and histamine		93.847	5K08DK097721-05	149,529	136,080
Repairing the Kidney Endothelium via Targeted Extracellular Matrix Modifiers		93.847	5R01DK113166-02	131,789	—
Rescuing Kidneys at Risk of Discard		93.847	1R01DK118425-01A1	13,649	—
Rho-associated kinase-dependent cytoskeletal and tight junction dysregulation in necrotizing enterocolitis		93.847	1R03DK117216-01A1	51,468	—
Role of HNF4a in the regulation of FGF23 in health and disease		93.847	5R01DK114158-02	356,163	—
SenseWhy: Overeating in Obesity Through the Lens of Passive Sensing		93.847	5K25DK113242-02	144,252	—
Sensorimotor Impairments in Men with Chronic Prostatitis/Chronic Pelvic Pain Syndrome: Relationship of resting state brain activity to pelvic floor muscle activation	253	93.847	85596622//R01DK110669-02	33,391	—
SMART Weight Loss Management		93.847	5R01DK108678-04	704,473	38,221
Stent vs. Indomethacin for Preventing Post-ERCP Pancreatitis: The SVI Trial	136	93.847	A00-2010-S010/U01DK104833	32,557	—
Technology supported treatment of sleep apnea in prediabetes	219	93.847	AWD100319/SUB00000080//1R01DK120312-01A1	4,673	—
Testing a medication risk communication and surveillance strategy: The EMC2 Trial		93.847	5R01DK103684-04	386,689	135,584
Testing Intervention Strategies for Addressing Obesity and Binge Eating		93.847	5K01DK116925-02	142,518	—
The Circadian System as a Neuronal Regulator of Feeding Time and Body Weight Setpoint		93.847	5R01DK113011-02	618,462	—
The effects of capsinoids on brown adipose tissue recruitment and activation in obesity		93.847	5R01DK112281-03	153,580	—
The genetic identity of the primary cilia ion channels of kidney collecting duct cells and their regulation by internal calcium		93.847	5R00DK106655-05	211,538	—
The Impact of ADPKD-Causing PKD1 Nonsense Variants on Polycystin Channel Function in the Primary Cilium	133	93.847	NOR-217886/PO#6628769//5P30DK090728-09	21,088	—
The mechanistic impact of Finger 1 variants on polycystin-2 (PKD2) channels in the primary cilium		93.847	1R56DK119709-01	146,223	—
The role of emergency granulopoiesis in the pathogenesis of Fanconi Anemia		93.847	5R01DK098812-04 REVISED	76,980	—
The Role of PAI-1 and Circadian Disruption in the Pathogenesis of NASH		93.847	4K08DK095992-05	1,085	—
The roles of pleckstrin-2 as a functional node in erythropoiesis		93.847	5R01DK102718-05	322,271	3,136
The Unfolded Protein Response in Fatty Liver		93.847	1R01DK121997-01	16,529	—
Training Grant in Gastrointestinal Physiology and Psychology		93.847	3T32DK101363-05S1 REVISED	175,371	—
Transition from Acute to Chronic Pelvic Pain in a Murine Model of Chronic Prostatitis		93.847	5K01DK114395-02	102,434	—
Transplant Regimen Adherence for Kidney Recipients by Engaging Information Technologies: The TAKE IT Trial		93.847	5R01DK110172-03	504,201	127,952
Transplant Surgery Scientist Training Program		93.847	5T32DK077662-13	170,936	—
Urinary Knowledge Study (U-KNOW)	126	93.847	206423//5R01DK104842-03	9,275	—
Urinary Renin Angiotensin System in Diabetes		93.847	5R01DK104785-03 REVISED	74,519	—
Vitamin D and type 2 diabetes (D2d study)	201	93.847	5008752-SERV//4U01DK098245-04	(2,170)	—
Vitamin D and Type 2 Diabetes (D2d)	200	93.847	5015643-SERV//2U01DK098245-06	130,000	—
				23,190,348	2,877,790
(CREST-2) Trial: Carotid Revascularization and Medical Management for Asymptomatic Carotid Stenosis Trial	134	93.853	NWU-187276-02//5U01NS080168-03	16,982	—
2018 Meeting of the Society for the Neural Control of Movement		93.853	1R13NS106974-01 REVISED	29,000	—
A Novel approach to therapy in ALS and ALS/Dementia using new insights from ALS5/SPG11		93.853	5R21NS109917-02	198,683	—
A primate model of an intra-cortically controlled FES prosthesis for grasp		93.853	5R01NS053603-12 REVISED	655,719	—
A randomized, double-blind, placebo-controlled trial of urate-elevating inosine treatment to slow clinical decline in early Parkinson disease (Inosine Phase 3)	129	93.853	Agmt 4/24/17//5U01NS090259-03	19,843	—
A wearable myoelectric computer interface to reduce muscle co-activation in acute and chronic stroke		93.853	5R01NS098210-04	299,940	8,658
AMPK, metabolism and ALS		93.853	5R01NS096746-05	539,791	90,662
An epigenomic approach to identifying noncoding mutations in epilepsies		93.853	5R00NS089858-05	223,461	—
AT-HOME-PD	129	93.853	232297//5U01NS107009-02	84,203	—
AtRIal Cardiopathy and Antithrombotic Drugs in prevention After cryptogenicstroke (ARCADIA) *study*	221	93.853	010785-13385//1U01NS095869-02	6,787	—
Autophagy Regulation of Glioblastoma Tumorigenesis and Responses to Therapy		93.853	5R01NS095634-05	281,165	—
Biomimetic Somatosensory Feedback through Intracorticalmicrostimulation		93.853	5R01NS095251-04	905,098	483,721

NORTHWESTERN UNIVERSITY
 Supplementary Schedule of Expenditures of Federal Awards
 Year ended August 31, 2019

Cluster title/Federal grantor/Subagency/Project title	Pass-through ID number	CFDA	Sponsor award number	Federal expenditures	Passed-through to subrecipient
Department of Health and Human Services (continued):					
BRAF Mutation in Malignant Astrocytoma Origin, Evolution, and Response to Therapy		93.853	5R01NS080619-05	\$ (75)	—
Cajal-Retzius cells and neuronal signaling in postnatal cortical networks		93.853	2R01NS064135-10	121,237	—
Cajal-Retzius cells and neuronal signaling in postnatal cortical networks		93.853	5R01NS064135-09 REVISED	191,483	—
Cellular and Molecular Role of CXCR4 signaling in Painful Diabetic Neuropathy		93.853	1R01NS104295-01	577,491	—
Cellular dissection of herpes simplex encephalitis with iPS cells	173	93.853	5R01NS072381-09	239,067	—
Cellular plasticity and equilibrium in GBM progression		93.853	5R01NS096376-03	374,991	15,000
Cerebral Small Vessels in Motor and Cognitive Decline		93.853	5R01NS085002-05 REVISED	156,859	—
Channelopathy-Associated Epilepsy Research Center		93.853	5U54NS108874-02	1,459,721	424,206
Characterized Adult Primary Human Microglia Cells for Research		93.853	5R24NS104160-02	127,852	—
Chemokine Signaling in Diabetic Neuropathy		93.853	5K08NS079482-05 REVISED	(528)	—
Chicago Stroke Trials Consortium		93.853	1U24NS107233-01 REVISED	122,037	4,500
Circadian Dysfunction, Encephalopathy, and Cognitive Outcomes after Critical Illness		93.853	5K23NS092975-05	168,519	—
Clinical Coordination Center for STEADY-IPD3		93.853	5U01NS080818-04	1,119,017	682,777
Clinical Research Sites for the Network of Excellence in Neuroscience Clinical Trials (NEXT Sites)		93.853	5U10NS077271-07	(213)	—
Clinical Research Sites for the Network of Excellence in Neuroscience Clinical Trials (NEXT Sites)		93.853	5U10NS077271-07	4,478	4,478
Clinical Research Sites for the Network of Excellence in Neuroscience Clinical Trials (NEXT Sites)		93.853	5U24NS107213-02	391,894	18,276
Clinical Trial Readiness for SCA1 and SCA3	137	93.853	ACMT00003078/5U01NS104326-02	1,185	—
Coding properties of Vibrissal-Responsive Trigeminal Ganglion Neurons		93.853	5R01NS093585-05	175,343	—
Combined Approach to the Genetic Basis of Epilepsy		93.853	5R01NS053792-17	243,001	—
Concordance of TDP-43 Inclusions with Cortical Atrophy and Clinical Phenotype		93.853	5R01NS085770-05	290,898	—
Contralateral Corticobulbospinal Structural and Functional Changes Post Stroke: Biomarkers for the upper limb flexion synergy		93.853	1R01NS105759-01A1	111,822	—
Cytoskeletons, ARF GTPases and Neurodegeneration		93.853	7R21NS093439-03	59,579	—
Deciphering the Roles of Kainate Receptors in Developing CNS Circuits		93.853	5R01NS105502-02	499,186	—
Defining The Impaired Proteostasis Network in ALS Patient Motor Neurons		93.853	1R21NS107761-01A1	173,331	—
Defining The Mechanisms by Which NEK1 Genetic Variants Associated with ALS Patient Motor Neurons Lead to Motor Neuron Degeneration		93.853	1R21NS111248-01	79,810	—
DEFUSE 3: Endovascular Therapy Following Imaging Evaluation for Ischemic Stroke 3	221	93.853	010085-110021/1U01NS092076-01A1 R	15,699	—
Dendritic Organization of Synaptic Input to CA1 Hippocampal Place Cells during Spatial Navigation		93.853	5F31NS098666-03	33,088	—
Designing brain machine interfaces to drive plasticity and enhance recovery after brain injury		93.853	5R01NS094748-05	461,509	83,578
Determinants of Dopaminergic Neuron Degeneration in Parkinson's Disease		93.853	2P50NS047085-16	489,555	—
Determining How Defective Nucleo-Cytoplasmic Trafficking Leads To Neurodegeneration In C9orf72-Related ALS And FTD		93.853	1R01NS104219-01A1 REVISED	499,005	39,736
Developing novel treatment strategies for Spinocerebellar ataxia type 1		93.853	5R21NS099962-02 REVISED	101,362	—
Development of Novel MNK Inhibitors for Treating Glioblastoma		93.853	1R01NS113425-01	26,725	—
Development of Novel MR Imaging for Ischemic Stroke Evaluation	219	93.853	FP063797-1/R01NS093908	(7,203)	—
Differing Neuronal Mechanisms Mediating Locomotion and Spasms After Spinal Cord Injury	207	93.853	S002/2R01NS047567-13A1	62,030	—
Discovery of Novel Pathways Mediating Huntingtin Neurotoxicity		93.853	1R21NS110420-01	64,637	—
Dopaminergic and Muscarinic Signaling in the Striatum		93.853	5R01NS034696-22	289,580	—
Dopaminergic Neurotransmission in a Model of DOPA-responsive Dystonia	73	93.853	A146916/5R01NS088528-05	107,656	—
Effect of Unilateral and Bilateral STN Stimulation on Eye-Hand Coordination		93.853	5R01NS092950-04	325,584	—
Elucidating Motor Pathways Involved in Hand Impairment Post Stroke		93.853	5F31NS105486-02	39,359	—
Epigenetic Regulation of Nerve Injury	266	93.853	761K946/R01NS100510-02	58,815	—
Examining the role of glycosphingolipids in the progression and heterogeneity of synucleinopathies		93.853	1R01NS109157-01 REVISED	178,368	—
Exploring the role of protein farnesylation in the regulation of SNARE protein ykt6 in synucleinopathy model		93.853	5R21NS107770-02	161,538	—
FTLD Clinical Research Consortium	217	93.853	8568sc/5U54NS092089-05	7,403	—
Functional Annotation of a Comprehensive Set of SCN2A Variants	32	93.853	5001370-5500001215/1R21NS110355-01	55,481	—
Functional Development of Motor Networks		93.853	5R01NS067299-10	594,452	—
Functional Segregation Within the Whisker-Barrel Neuraxis	278	93.853	WU-16-153-MOD-5/5R01NS091439-04	224,234	—
GABAergic Signaling in the External Globus Pallidus		93.853	5R01NS069777-08	473,893	4,475
Galectin Modulation of Glutamate Receptors and Neuronal Function		93.853	5R01NS090598-05 REVISED	32,882	—
General Motor Control Mechanisms and Disease Training Program		93.853	5T32NS041234-17	283,552	—
Genetic Approaches to Optimize CAR T cells for Glioblastoma Therapy		93.853	5R01NS106379-02	333,755	78,456
Genetic Modifiers of Childhood Epilepsy		93.853	5R01NS084959-05	216,709	—
Glioblastoma Phenotype Modulation Through miRNA Control of Wnt Signaling		93.853	5R01NS093843-05	357,031	12,909
Hemostasis, Hematoma Expansion, and Outcomes After Intracerebral Hemorrhage		93.853	1R01NS110779-01	230,849	—
Hippocampal microcircuits regulating neurogenesis		93.853	5R21NS103138-02 REVISED	158,616	—
Identification of Biomarkers Reflecting Homeostatic Sleep Drive		93.853	1F32NS110183-01	39,603	—
Identification of new LAT-1 transporter substrates for drug delivery	245	93.853	17-022-02 // 1R15NS099981-01A1	3,039	—
IDO1 and immunotolerance in glioblastoma		93.853	5R01NS097851-04	449,209	—
Immune Modifying Microparticles for Acute Treatment of Spinal Cord Injury		93.853	5F30NS093811-04	40,044	—
Impact of direct dopaminergic neuromodulation of the subthalamic nucleus in health and in experimental Parkinson's disease		93.853	5F31NS100357-02	34,866	—
Interaction of Subunits Regulating Resurgent Current Through Voltage Gated Na Channels		93.853	1F31NS108444-01A1	20,095	—

NORTHWESTERN UNIVERSITY
 Supplementary Schedule of Expenditures of Federal Awards
 Year ended August 31, 2019

Cluster title/Federal grantor/Subagency/Project title	Pass-through ID number	CFDA	Sponsor award number	Federal expenditures	Passed-through to subrecipient:
Department of Health and Human Services (continued):					
Intranasal Stem-Cell Based Therapy of Glioblastoma		93.853	5R01NS087990-05 REVISED	\$ 185,246	9,991
Intrinsic Plasticity and Information Storage in Cerebellar Purkinje Cells	219	93.853	FP038885//R01NS62771	27	—
Investigating the Role of Extremely Long-lived Mitochondrial Proteins in Mammalian Neurons (Postdoc Fellowship for Ewa K Bomba-warczak, PhD.)		93.853	5F32NS106812-02 REVISED	58,224	—
Investigation of ALS caused by mutant CHCHD10		93.853	5R01NS099638-04	502,801	43,736
Investigation of Histone H3 Post-Translational Modifications in Pediatric Brainstem Glioma		93.853	5K08NS097624-03	210,117	158,760
Ionic currents and spiking in cerebellar nuclear neurons		93.853	5R37NS039395-17	(25,148)	—
Ionic Currents and Spiking in Cerebellar Nuclear Neurons		93.853	5R37NS039395-19	744,963	—
LRP4 signaling in neuromuscular junction formation	38	93.853	SPN pending RES513371//2R01NS082007-07	45,485	—
LRRK2-mediated molecular and synaptic events in the striatum		93.853	5R01NS097901-04	348,489	—
L-type channels as pharmacological targets for the treatment and prevention of febrile seizures		93.853	5R21NS096424-02 REVISED	52,328	—
Lysosomal Dysfunction due to PGRN Mutations		93.853	5F99NS105182-02 REVISED	27,268	—
Maternal Outcomes and Neurodevelopmental Effects of Antiepileptic Drugs	73	93.853	T652681//4UJ01NS036455-15	27,744	—
Maternal Outcomes and Neurodevelopmental Effects of Antiepileptic Drugs (MONEAD) II	190	93.853	61989966-125439/2U01NS038455-16A1	159,195	—
Mechanisms of Distorted Inputs in Chronic Spinal Injury		93.853	5R01NS099313-05 REVISED	185,399	—
Mechanisms of Early Recurrence in Intracranial Atherosclerotic Disease (MyRIAD)	241	93.853	662706//5R01NS084288-05	5,730	—
Mechanisms of Early Recurrence in Intracranial Atherosclerotic Disease (MyRIAD)	241	93.853	SPC-000246//5R01NS084288-05	15,553	—
Mechanisms of electrical stimulation of a canonical motor microcircuit		93.853	5R01NS109552-02	518,149	—
Mechanisms of striatal structural and functional plasticity		93.853	5R01NS107539-02	349,969	—
Mechanisms Underlying Tau45-230-Induced Neuronal Degeneration		93.853	5R01NS090993-05	331,954	—
Metabolic Control of Immune Suppression in Gliomas		93.853	5R01NS093903-04	473,020	—
Microcircuits of the Subiculum and Epilepsy		93.853	5R01NS096092-02	256,801	—
MicroRNAs and Perinatal Hypoxia-Ischemia		93.853	5R01NS086945-05	339,075	220,366
Molecular basis of Scapulo-peroneal SMA and Charcot-Marie-Tooth disease type 2C		93.853	5R01NS078287-04	330	—
Molecular Mechanisms Integrating Circadian Timing and Photic Signaling		93.853	5R01NS106955-02	554,788	—
Molecular Mechanisms of CRAC Channel Gating		93.853	5F31NS101830-02 REVISED	12,798	—
Molecular mechanisms underlying mitochondria-lysosome membrane contact sites in neuronal function and neurodegeneration		93.853	5K99NS109252-02	82,667	—
Motoneuron mortality in neurodegenerative diseases induced by homeostatic dysregulation of excitability		93.853	1R01NS110953-01	2,614	—
Mouse model studies of TMEM230-linked Parkinson's disease		93.853	5R01NS099623-04	522,580	124,689
Multi-modality 4D Flow MRI data enhancement for quantification of cerebral aneurysms hemodynamics	164	93.853	11000730-01//5R21NS106696-02	39,904	—
MyCog - Rapid detection of cognitive impairment in everyday clinical settings		93.853	5UH3NS105562-03	722,442	—
Myoferlin in muscle membrane fusion and repair		93.853	5R01NS047726-14	355,248	—
Network for Emergency Care Clinical Trials: Strategies to Innovate EmeRgENcy Care Clinical Trials Network (SIREN) - Network Clinica Center (Hub) (U24)	135	93.853	MCW Signed 11/09/17//1U24NS100648-02	4,706	—
Neural Stem Cell Carriers for Glioblastoma Immunotherapy		93.853	4R33NS101150-03	68,891	—
Neural Stem Cell Carriers for Glioblastoma Immunotherapy		93.853	5R21NS101150-02	251,649	—
Neurogenetic Approaches to Study Directed Behavior in Drosophila		93.853	5R01NS086859-05 REVISED	154,575	—
Neurogenetic Approaches to Study Directed Behavior in Drosophila		93.853	2R01NS086859-06	135,603	—
Neuroimaging Biomarkers in Parkinsonism: Differentiating Subtypes and Tracking Disease Progression	225	93.853	UFDSP00011947//U01NS102038	337,958	—
New Directions in Biology and Disease of Skeletal Muscle		93.853	1R13NS106917-01 REVISED	10,929	—
NN104 / ZZ-3K3A-201: A multi-center, Phase 2 study using a continual reassessment method to determine the safety and tolerability o 3K3A-APC, a recombinant variant of human activated protein C (APC), in combination with tissue plasminogen activator (IPA	129	93.853	NN104//U01NS088312	775	—
NN105: An Exploratory Phase II Study to Determine the Tolerability, Safety, and Activity of a Novel Vasopressin 1a Receptor Antagonist (SRX246) in Irritable Subjects with Huntington's Disease (HD)	129	93.853	4U44NS090616-02	25,700	—
NN106: Prospective Phase II Study of Cytochrome C Oxidase Activity as a Novel Biomarker in Subjects With Newly Diagnosed Primary v	129	93.853	1 U01NS093663-01A1	8,414	—
NN108: Topiramate as a disease altering therapy for Cryptogenic Sensory Peripheral Neuropathy (CSPN)	129	93.853	Agmt Signed 02/27/12//U01NS095388	21,452	—
Novel Therapies for Epilepsy Using Biodegradable Immune-Modifying Nanoparticles		93.853	5R21NS094999-02	(4,565)	—
NRSA F31 for Daniel Ohm in Support of: Concordance between cortical atrophy and histopathology in PPA with AD pathology		93.853	5F31NS095652-03 REVISED	20,908	—
NRSA F31 for Natalie Mara Frederick in support of: Understanding the role of dystonia gene Thap1 in the nervous system		93.853	5F31NS095611-02 REVISED	16,108	—
NRSA F31 for Sripadh Balasubramanian Sharma in support of: Micro-RNAs 29b and 21 in Traumatic Brain Injury		93.853	5F31NS105451-02 REVISED	45,433	—
NRSA Fellowship for Warren Alexander McGee in support of: TDP-43-regulated microRNAs and TDP-43 Proteinopathy		93.853	5F30NS090893-05	17,849	—
NRSA Postdoctoral F32 Misregulation of ER membrane dynamics by alpha-synuclein in Parkinsons disease		93.853	5F32NS101778-02 REVISED	4,351	—
NRSA Predoc C. Versteeg in support of: Determining the role of the Cuneate nucleus in the processing of proprioceptive information in the awake behaving animal		93.853	5F31NS106833-02	41,291	—
Optimizing the restoration and rehabilitation of function using cortically-controlled FES following SC		93.853	1R01NS112535-01	23,482	—
Pilot Project: Communication Bridge: Web-based speech-language therapy for individuals with dementia	217	93.853	9788sc5U54NS092089-03	(112)	—
POINT: Platelet-Oriented Inhibition in New TIA	72	93.853	Agreement signed 11/9/10 // 1U01NS026835-01A1	1,594	—
Postsynaptic functions of neuronal adhesion molecules: focus on Cntnap2		93.853	5R01NS100785-03	542,242	—

NORTHWESTERN UNIVERSITY
 Supplementary Schedule of Expenditures of Federal Awards
 Year ended August 31, 2019

Cluster title/Federal grantor/Subagency/Project title	Pass-through ID number	CFDA	Sponsor award number	Federal expenditures	Passed-through to subrecipient
Department of Health and Human Services (continued):					
Probing Somatosensory Representations in the Cuneate Nucleus of Awake Primates	219	93.853	FP060211//5R01NS095162-03	\$ 172,786	—
Quantification of dynamic ankle mechanics for assessment and treatment of locomotor dysfunction post stroke	242	93.853	SUBK00011246//R21HD097663-01	27,224	—
Radiation + Temozolomide Induced Mutation and Malignant Progression of GBM		93.853	5R01NS095642-04	417,126	—
Radiographic markers of clinical function in Cervical Spondylotic Myelopathy		93.853	5K23NS091430-03	157,819	—
Rational derivation of DA neuron subtypes from iPS cells for improved modelling of Parkinson's disease		93.853	5R01NS096240-04	607,737	—
Regulating fibrosis and muscle growth in the muscular dystrophies		93.853	5P01NS072027-06	(495)	(495)
Regulation of CD4+ T cell-mediated Demyelination Following Oligo Ablation		93.853	5R01NS099334-03	468,448	109,877
Regulation of Gliotransmission by Store-Operated Calcium Channels		93.853	5F30NS090817-03 REVISED	38,356	—
Regulation of neural progenitor cell migration by store-operated CRAC channels		93.853	5R01NS094011-04 REVISED	85,248	—
Research Education Program for Trainees in Neurology		93.853	5R25NS070695-10	209,442	—
Reverse Engineering Motor Unit Discharge		93.853	UWSC8225*(BPO2840)//5R01NS085331-05	132,811	—
Rhythmicity and Synchrony in the Basal Ganglia	265	93.853	3P50NS047085-15S1	(15,941)	—
Role of Host Cell Factors in Newborn Herpes Simplex Virus (HSV) Encephalitis		93.853	1R01NS110631-01	129,507	—
Role of interneurons in brain tissue oxygen regulation	151	93.853	EH17-251-S1//1R01NS107383-01	101,223	—
Role of PCDH12 in neural circuit formation during brain development and disease		93.853	5R00NS089943-05	211,613	—
Scalable Electrode Technology for High Resolution Chronic Recording of Brain	256	93.853	1806501//1R01NS104344-01A1	115,251	—
ScanImage: Flexible Software for Laser Scanning Microscopy in Neuroscience	273	93.853	R24NS086549-NU Amd 2	(6,861)	—
Sculpted Light in the Brain Conference		93.853	1R13NS111901-01	19,342	—
Sensormotor processing, decision making, and internal states: towards a realistic multiscale circuit model of the larval zebrafish brain	93	93.853	138078-5105175 // 2U19NS104653-02 REVISED	57,158	—
SLFN5: A Novel Therapeutic Target for Glioblastoma		93.853	1R01NS113352-01	13,520	—
Store-Operated Channels in the Nervous System		93.853	5R01NS057499-12	434,151	—
Stretch Reflex Contributions to Multi-joint Coordination		93.853	Agmt 1/31/2018 // 5R01NS- 0538139-09 REVISED	10,537	—
Stroke Trials Network - Regional Coordinating Stroke Centers	167	93.853	5U10NS086608-05	34,836	25,260
Subcortical auditory processing in sports-related concussions and contact/collision sports		93.853	1R01NS102500-01A1	560,683	—
SUDEP Translational Research Alliance – SUTRA	38	93.853	RES512393/5U01NS090407-04	76,983	—
SUDEP Translational Research Alliance (SUTRA); Autonomic and Imaging Biomarkers of SUDEP; SUTRA	258	93.853	RES512393/U01NS090407	66,173	—
Synaptic Circuit Organization of Motor Cortex		93.853	5R01NS061963-10	(47,878)	—
Synaptic Circuit Organization of Motor Cortex		93.853	5R01NS061963-12	457,573	—
Synaptic physiology in the zebrafish cerebellum during swimming and learning		93.853	5F31NS095476-03 REVISED	2,211	—
Synaptic Regulation of Innate Freezing by the Fastigial Nucleus of the Cerebellum		93.853	1F32NS106720-01 REVISED	57,874	—
Synaptic Transmission, Plasticity, and Integration in the Subthalamic Nucleus		93.853	5R37NS041280-20	130,109	—
Targeting convergent modulatory systems to regulate striatal synaptogenesis		93.853	5F32NS103243-02	50,090	—
Targeting histone demethylase activity for the treatment of pediatric brainstem glioma		93.853	5R01NS093079-05	308,731	—
The effects of a-synuclein accumulation on proteome composition, stability and aggregation		93.853	5R21NS107768-02	194,148	—
The Human Motor Output Map		93.853	5R01NS098509-04	393,502	150,666
The Loss of Independent Joint Control of the Upper Limb in Spastic Hemiparetic CP		93.853	5R01NS058667-06	327,577	—
The Neural Control of Internal Joint State		93.853	5R01NS086973-05	313,671	7,372
The role of amyloid precursor protein in HIV-1 replication and associated neurodegeneration		93.853	5R01NS09064-03	384,456	—
The role of a-synuclein accumulation in lysosomal hydrolase trafficking and function		93.853	5R01NS092823-05	254,018	—
The role of ATP13A2/PARK9 in secretion of exosomes and alpha synuclein		93.853	5R37NS096241-04	627,744	78,656
The Role of Glioma Metabolism in Promoting Tumor Immunosuppression		93.853	5F32NS098737-02 REVISED	36,242	—
The Role of Lysosomal Glucocerebrosidase in Synucleinopathies		93.853	5R01NS076054-09	505,633	—
The Role of Mitochondria in TDP-43 Proteinopathy		93.853	1R01NS107396-01	270,865	—
The role of UCHL1 on the health and stability of upper motor neurons		93.853	5R01NS085161-05	3,173	—
The Stroke Hyperglycemia Insulin Network Effort (SHINE) Trial	264	93.853	GB10253 155953/5U01NS069498-07	13,593	—
The Use of Eye Movement Testing to Detect Neurocognitive Change Associated with Subconcussive Impacts		93.853	1F31NS106840-01A1	28,237	—
Tissue Factor as a Key Determinant of IDH1 Mutant versus IDH1 Wild-type Glioma Thrombosis and Malignancy		93.853	5R01NS102669-03	353,340	—
Training in Neurotherapeutics Discovery and Development for Academic Scientists	211	93.853	201602366-02//5R25NS099170-02	12,582	—
TRAINING PROGRAM IN THE NEUROSCIENCE OF HUMAN COGNITION		93.853	5T32NS047987-13	345,376	—
TRPC3 channels as pharmacological targets for the treatment of ataxia		93.853	5R21NS090346-02 REVISED	154,695	—
Understanding pathophysiological mechanisms underlying neurodegeneration		93.853	1R56NS108639-01A1	63,742	—
Understanding the Cellular Basis of Movement Disorders		93.853	2R01NS082351-06	173,836	—
Understanding the cellular basis of Movement Disorders		93.853	5R01NS082351-05	115,194	—
Whole-brain recording into nucleic acids using template-independent polymerases		93.853	1UF1NS107697-01	529,237	276,964
				<u>35,430,720</u>	<u>3,157,274</u>

NORTHWESTERN UNIVERSITY
 Supplementary Schedule of Expenditures of Federal Awards
 Year ended August 31, 2019

Cluster title/Federal grantor/Subagency/Project title	Pass-through ID number	CFDA	Sponsor award number	Federal expenditures	Passed-through to subrecipient:
Department of Health and Human Services (continued):					
(CTOTC-12/ ARTEMIS) Safety of Donor Alloantigen Reactive Tregs to Facilitate Minimization and/or Discontinuation of Immunosuppression in Adult Liver Transplant Recipients	217	93.855	9320sc/5U01A104347-05 REVISED	\$ 31,974	—
A Master Role of Symmetric Arginine Dimethylation in Lupus Autoantibody Response		93.855	5R21A1131087-02	164,024	—
A Phase IV Open-Label Pharmacokinetic Study of Minocycline for Injection Following a Single Infusion in Critically-Ill Adults (ACUMIN DMID Protocol Number: 16-0011	66	93.855	225440/5UM1A1104681-05	2,583	—
A Prospective Trial of Elemental Diet in Adults with Eosinophilic Gastrointestinal Diseases (EGIDs)	49	93.855	135407//U54A1117804	81,632	—
Accessory Virulence Factors of Pseudomonas aeruginosa		93.855	5R01A118257-04	354,718	—
ACTG A5320 Protocol Vice Chair Support	214	93.855	1560 G WA745//7UM1A1068636-13 REVISED	2,836	—
ACTG A5322 Protocol Co-Chair Support	214	93.855	1560 G WA747//7UM1A1068636-13 REVISED	11,202	—
ACTG A5322 Protocol Vice Chair Support	214	93.855	1560 G WA748//7UM1A1068636-13 REVISED	2,840	—
ACTG A5357 Protocol Co-Chair Support: Leadership and Operations Center (LOC), AIDS Clinical Trials Group (ACTG)	214	93.855	1560 G WA749//7UM1A1068636-13 REVISED	9,577	—
ACTG A5376 Cohn WHISC Support	214	93.855	1560 G WB595 // 7UM1A1068636-13	7,632	—
ACTG A5382 Chair Support: Leadership and Operations Center (LOC), AIDS Clinical Trials Group (ACTG)	214	93.855	1560 G WA993 // 7UM1A1068636-13 REVISED	14,194	—
ACTG Data Management Committee Chair	31	93.855	SUBJ: 110009/5UM1A1068636-12	12,074	—
ACTG Data Management Committee DMIC	214	93.855	1560 G WB105/7UM1A1068636-13	40,248	—
ACTG Executive Committee Support	31	93.855	110007//5UM1A1068636-12 REVISED	1,841	—
ACTG LOC Protocol A5320 Vice-Chair	31	93.855	110236 A5320/5UM1A1068636-12	924	—
ACTG LOC Protocol Co-Chair for Protocol A5322	31	93.855	110229 A5322/5UM1A1068636-12 REVISED	3,575	—
ACTG Minority HIV Investigator Mentoring Program	31	93.855	110140//5UM1A1068636-12 Revised	15,581	—
ACTG Taiwo AEC Committee Support	214	93.855	1560 G WB850/7UM1A1068636-13	5,734	—
Activate Silent and Cryptic Intact Fungal SM Gene Clusters through FACs for Novel Antibiotics Discovery	110	93.855	Agmt 8/30/16-001 // 2R44A1118086-02	142,008	—
AIDS Clinical Trial Group Network Protocol Funds	31	93.855	Mod 1 //2UM1A1068636-10	240,213	—
AIDS Clinical Trial Group Network Protocol Funds - Cost Reimbursement	31	93.855	111672//5UM1A1068636-12	48,332	—
AIDS Clinical Trials Group - Protocol Chair Support A5322	31	93.855	110237//5UM1A1068636-12	1,818	—
Allergy Guidelines Assessment Parent Survey	172	93.855	DAIT-SACCC-03-NW//5UM2A1117870-04	21,140	—
Alloantigen Delivery Via ECDCI-Fixed Cells for Tolerance to Monkey Islet Grafts	243	93.855	N002854801//1U01A11102463-01	(32)	—
ALPHA-HERPESVIRUS TRANSPORT IN AXONS		93.855	5R01A1056346-15	378,548	150,674
An Open-Label Population Pharmacokinetic Study of Minocycline for Infection Following a Single Infusion in Critically-Ill Adult Subjects	66	93.855	203-8439/5UM1A1104681-05	(28,293)	—
Anti IL5 and Churg Strauss Syndrome: a double blind, placebo controlled trial	143	93.855	20083504/4U01A1097073-04	18,308	—
Antibacterial Resistance Leadership Group ARLG ACUMIN	66	93.855	A039058/5UM1A1104681-07	38,026	—
Anti-TSLP (AMG 157) plus antigen-specific immunotherapy for induction of tolerance in individuals with cat allergy CATNIF	25	93.855	FY19ITN011/5UM1A1109565-06	36,223	—
ARLG ACUMIN	66	93.855	A039058/5UM1A1104681-07	31,921	—
Autoantibody mediated pathogenesis in chronic rhinosinusitis with nasal polyps: mechanisms and consequences		93.855	5R01A1134952-02	308,620	—
Binding Antibody FcMediated Antiviral Functions Across Humans and Non-human Primates	66	93.855	2035489//5P01A1120756-03	65,218	—
Biomarkers for Highly Virulent Pseudomonas aeruginosa Strains		93.855	5R21A1129167-02 REVISED	331,885	42,174
CARD-only protein regulation of cytosolic Pattern Recognition Receptor signaling		93.855	1R01A1140702-01 REVISED	36,293	—
Cellular and Molecular Mechanisms of the Pathogenesis of Aspirin Exacerbated Respiratory Disease		93.855	1K23A1141694-01	27,768	—
Characterizing Mucosal Changes in the FRT Leading to Increased HIV Acquisition		93.855	1R01A1146087-01	106,589	—
Chicago Clinical Trials Unit		93.855	5UM1A1069471-13 REVISED	1,765,046	666,345
Chicago WIHS Consortium V (WIHS-V)	95	93.855	50615-324-NWU2-AI034993/5U01A1034993	16,750	—
Chicago Women's Interagency HIV Study (WIHS V)	95	93.855	50612-324-NWU1-AI034993	9,381	—
Chronic Rhinosinusitis Integrative Studies Program (CRISP)		93.855	4U19A1106683-05	743,935	363,990
Chronic Rhinosinusitis Integrative Studies Program 2 (CRISP2)		93.855	1P01A1145818-01	41	—
Clinical Evaluation of a New Highly Sensitive Multiplex qPCR for Detecting tuberculosis and Non-tuberculous Mycobacterie		93.855	5R03A1137674-02	84,678	26,114
Clostridium innocuum as an emerging multidrug-resistant antibiotic-associated diarrheal pathogen	16	93.855	901553-NU//1R21A1144549-01	34,050	—
Combined anti-trypanosomal and anti-inflammatory nanotherapy for the treatment of Chagas disease	39	93.855	0001552826//1R21A144549-01	23,666	—
Combining Immune Tolerance and Myelin Repair Therapy in T cell-driven MS Models		93.855	1R21A1142059-01	134,208	—
Consortium of Eosinophilic Gastrointestinal Disease Researchers	49	93.855	135408-CT1-OMEGA/5U54A1117804-05	18,147	—
Consortium of Eosinophilic Gastrointestinal Disease Researchers: OMEGA	49	93.855	135408-CT1-OMEGA/5U54A1117804-05 REVISED	29,674	—
Control of E1 oligomerization regulates E1 function in papillomavirus DNA replication	53	93.855	55890112//5R01A114897-05	3,602	—
CTOT-11 Long-term Safety Follow-up: Retrospective, Multicenter Study to Determine Up to 5 Year Clinical Outcomes in Subjects Previously Randomized in the CTOT-11 Study (CTOT-23)	31	93.855	BWH 09/22/16//U01A1063594	(1,030)	—
Defense-in-depth against mucosal HIV clade C invasion	197	93.855	PO 39802//P01A1048240	344,815	—
Defining the Siderophore of Stenotrophomonas maltophilia, an Emerging, Multi-Drug Resistant Pathogen		93.855	1R21A1125968-01A1	128,177	—
Dengue Human Immunology Project Consortium (DHIPC)	99	93.855	0255-8682-4609//5U19A1118610-05	407,482	—
Design and characterization of biomimetic nanobiomaterials to elicit CD1-restricted T cell responses during sub-unit vaccination		93.855	1R01A1145345-01A1	18,331	—
Development of a Designer Proline-rich antimicrobial peptide Chaperone protein inhibitor (DPC) for treating multi-drug resistant wound infections	19	93.855	Agmt 04/09/2019//1R41A1136072-01	61,647	—
Development of Immune-Modulated HIV Vaccines		93.855	1K22A1118421-02	(1,223)	—

NORTHWESTERN UNIVERSITY
 Supplementary Schedule of Expenditures of Federal Awards
 Year ended August 31, 2019

Cluster title/Federal grantor/Subagency/Project title	Pass-through ID number	CFDA	Sponsor award number	Federal expenditures	Passed-through to subrecipient
Department of Health and Human Services (continued):					
Development of Lipid-based Nanoparticle Vaccines Against Mycobacterium tuberculosis		93.855	1R21AI131035-01	\$ 98,975	—
Discovery and validation of avermectin resistance loci in free-living and parasitic nematodes		93.855	5R21AI121836-02	46,767	—
Distinct mast cell responses in male and female SJL mice underlie sex dimorphic EAE susceptibility		93.855	5R01AI128292-03	600,491	—
Diverse Functions of p38α MAPK in T Helper Differentiation		93.855	5R03AI125813-02	49,351	—
Donor-Alloantigen-Reactive Regulatory T Cell Therapy in Liver Transplantation (deLTa)	217	93.855	10526sc//5U01AI110658-04	96,559	—
Drug at the Right Place and Concentration: Optimizing Sustained PreP Agents	4	93.855	31103A Amd. 7//5U19AI103461-06	3,469	—
Efficacy of Ustekinumab (Anti-IL_12/23) followed by Abatecept (CTLA4-Ig) for the treatment of Psoriasis Vulgaris	25	93.855	FY18ITN093//5UM1AI109565-05	241	—
Elucidating a novel regulator of inflammation: the TLR4-Inhibitory Complex (TIC)		93.855	1R21AI131179-01A1	209,475	—
EoE Clinical Study 2: Consortium of Eosinophilic Gastrointestinal Disease Researchers	49	93.855	135409-C12-Diet Study//5U54AI117804-05 REVISED	40,440	—
EpiModel 2.0: Integrated Network Models for HIV/STI Prevention Science	73	93.855	A011168//1R01AI138783-01A1	58,800	—
Ethical and Sociocultural Implications of Genetic Testing in Transplantation		93.855	5R03AI126090-02	(1,388)	—
Fellowship for DiGiuseppe, Stephen: Uncovering the mechanism of how poxviruses hijack the host translational machinery to promote infection		93.855	5F32AI140566-02	58,627	—
Fluomics: The Next Generation	99	93.855	0255-A131-4609//5U19AI135972-02	142,395	—
Food Allergy Outcomes Related to White and African American Racial Differences (FORWARD)		93.855	5R01AI130348-03 REVISED	799,534	582,252
Harnessing MUC16-IgG Interactions to Enhance HIV Vaccine Function		93.855	5R01AI125171-04	593,751	175,524
High vs. Standard Dose Flu Vaccine in Adult Stem Cell Transplant Recipients	271	93.855	VUMC62776//5U01AI32004-02	83,833	—
HOPE in Action: A clinical trial of HIV-to-HIV deceased donor kidney transplantation	118	93.855	2003649393//5U01AI134591-02	16,071	—
Hormones in allergic disease		93.855	5R01AI127783-03	446,723	—
Host-Pathogen Interactions in a Failing Global lineage of MTBC:M.africanum	204	93.855	USTTBNWU/1R01AI1110386-02-2016	15,194	—
Identification of the Initial Targets of Transmission		93.855	5R37AI094595-08	688,591	169,179
Identification of the Siglec-8-induced mode of eosinophil death and extracellular factors governing Siglec-6/8 expression and function	216	93.855	107905120//3U19AI070535-12S1	79,902	—
Identifying Kawasaki Disease-Specific Antibodies and Antigens		93.855	5R21AI140029-02 REVISED	172,494	71,742
Immunology and Molecular Pathogenesis Training Program		93.855	5T32AI007476-23	293,819	—
IMPAACT Network Leadership and Operations Center (LOC) Grant - CRS 4001 PF	16	93.855	915377-NW//5UM1AI068632-13	8,290	—
Impact of CCR5 Blockade in HIV+ Kidney Transplant Recipients	217	93.855	9254sc//5U01AI118594-04	56,052	—
Implementation strategies for a new point-of-care test for early infant diagnosis	118	93.855	2002785688 Amd 3 // R01AI116324	5,687	—
Influenza virus receptors on human airway epithelial cells	181	93.855	5-53557//5R01AI114730-04	65,161	—
Initiators, biomarkers and mechanisms of epithelial dysfunction and immune pathogenesis in chronic rhinosinusitis and aspirin exacerbated respiratory disease (AERD)		93.855	5R01AI137174-02	803,485	—
Innate Immune Surveillance of HIV-1 During Transmission and Systemic Infection	180	93.855	60088-12935-NWU//1R01AI127302-02	168,028	—
Integrating Mechanistic Insights from Diverse Models to Prevent CMV Reactivation following Transplantation		93.855	5P01AI112522-05	2,496,152	16,016
ITN085ST (PHARAOH) - A Phase I Trial of Autologous Regulatory T Cell Therapy for Autoimmune Hepatitis	25	93.855	FY19ITN297//5UM1AI109565-06	15,196	—
Keeping it LITE: Exploring HIV Risk in Vulnerable Youth with Limited Interactor	95	93.855	50042-324-NWU01//1UG3AI133676-0	13,381	—
Leveraging immunostimulatory pathways that enhance BCG vaccination for the rational design of synthetic neonatal vaccine formulation		93.855	1R21AI137932-01A1	102,013	—
Lipid Regulation of the Development of Responsiveness to Allergen in Neonates and Infants		93.855	5U01AI131337-02 REVISED	3,716	2,265
MACS Fibroscan Subcontract		93.855	2004208580//UM1AI035043	105,000	—
Mechanisms of Gonococcal Pili Antigenic and Phase Variation	118	93.855	5R37AI033493-26	492,960	—
Mechanisms of MCMV reactivation in immunodeficient transplant recipients		93.855	5R01AI112911-04	119,796	—
Mechanistic Studies of Patatin-like Toxins		93.855	5R01AI053674-13	(1,131)	—
Metabolic and Immune Consequences of Antibiotic-Related Microbiome Alterations during TB Treatment		93.855	1R21AI148033-01	7,359	—
Modeling concurrent cytomegalovirus infection and transplantation tolerance		93.855	5R01AI114824-02	(8,014)	—
Modeling concurrent cytomegalovirus infection and transplantation tolerance	66	93.855	A031106//7R01AI114824-04	7,727	—
Molecular mechanism of V. vulnificus MARTX toxin in pathogenesis and food safety		93.855	5R01AI092825-08	313,102	—
Molecular Mechanism of V. Vulnificus MARTX Toxin in Pathogenesis and Food Safety		93.855	5R01AI092825-05 REVISED	(177,155)	—
Molecular Regulation of Systemic Inflammation		93.855	5R01AI120625-03 REVISED	60,940	—
Mucosal mechanisms of altered HIV susceptibility in adolescents	241	93.855	SPC-000886//5R01AI28782-04	5,608	—
Multicenter AIDS Cohort Study		93.855	5U01AI035039-26	3,094,834	344,679
Neurotropic herpesvirus envelopment and microtubule-mediated transport	4	93.855	310227//5R01AI125244-02	34,787	—
Neurotropic herpesvirus envelopment and microtubule-mediated transport	3	93.855	310227//5R01AI125244-04	63,204	—
Next-Generation Phylogenetics-targeted Partner Service Models for Combined HIV Prevention	219	93.855	FP066835-A//1R01AI136056-01	166,328	—
Northwestern University Allergy Immunology Research Program (NUAIR)		93.855	5T32AI083216-10	267,292	58,675
Northwestern University Infectious Diseases Education and Science (NuDeas)		93.855	5T32AI095207-08	174,652	—
Novel Proteoform Biomarkers of Acute Rejection in Liver Transplant Recipients		93.855	5R21AI135827-02	204,500	—
Novel therapies to modulate the inflammatory alloresponse in renal grafts (CTOT-21)	217	93.855	11156sc//5U01AI113362-05	39,767	—
Nuclear rotation and cellular reorganization during Cytomegalovirus infection		93.855	1R01AI141470-01	207,158	—
Optimizing Clinical Use of Polymyxin B: Teaching an Old Drug to Treat Superbugs	242	93.855	3004163905//5R01AI119446	17,213	—
Optimizing the diagnosis of pediatric Clostridium difficile infection	16	93.855	901507-NW//5K23AI23525-02	12,425	—

NORTHWESTERN UNIVERSITY
 Supplementary Schedule of Expenditures of Federal Awards
 Year ended August 31, 2019

Cluster title/Federal grantor/Subagency/Project title	Pass-through ID number	CFDA	Sponsor award number	Federal expenditures	Passed-through to subrecipient
Department of Health and Human Services (continued):					
Pathogenesis of Jielongvirus	226	93.855	SUB00001474//1R01AI128924-01A1	\$ 79,507	—
Pathogenesis of Rebound SIV/HIV Viremia After Antiretroviral Therapy	93.855	93.855	5P01AI131346-03 REVISED	1,693,187	643,244
Patient-Oriented Research on Hospital-Acquired Pathogens	93.855	93.855	4K24AI104831-05	829	829
PHARAOH: A PHase I Trial Of Autologous Regulatory T Cell Therapy for Autoimmune Hepatitis	25	93.855	FY19ITN289//5UM1AI109565-06	54,735	—
Phenotypic and functional plasticity of mast cells in homeostasis and allergy (NRSA Predoctoral Fellowship for Krishan Dilip Chhibba, BA.	93.855	93.855	5F30AI129237-03	33,204	—
Pig-to-Monkey Islet Xenotransplantation	243	93.855	N004761502//1U01AI120130-04	106	—
Post-transcriptional regulation of Crp in Yersinia pestis	93.855	93.855	5R21AI111018-02	158,130	—
Poxvirus manipulation of the host cell protein synthesis machinery	93.855	93.855	5R01AI127456-03	433,468	—
Probing the Functions of KLF2 Downregulation	93.855	93.855	5R21AI119137-02	134,448	—
Protocol Funds, Leadership and Operations Center (LOC), AIDS Clinical Trials Group (ACTG) [UM1AI068636]	214	93.855	20191266//7UM1AI068636-13	103,563	—
Protocol ITN056ST: Evaluation of Donor Specific Immune Senescence and Exhaustion as Biomarkers of Operational Tolerance Following Liver Transplantation in Adults	25	93.855	FY19ITN158//5UM1AI109565-06	150,684	—
Rapid discovery of millions of intact biosynthetic gene pathways for natural product compounds treating infectious diseases from the majority of un-sequenced filamentous fungi with a novel FAC-NGS tool	110	93.855	Agmt 5/22/19//1R44AI140943-01A1	2,245	—
Reassessing Legionella pneumophila Recognition during Intracellular Infection of Human Macrophages	93.855	93.855	1R21AI137458-01A1	73,689	—
REDD1 dissociates the therapeutic and adverse effects of glucocorticoids in skin	93.855	93.855	5R01AI126366-02	395,370	—
Regulation of Allergic Inflammation by Histamine	93.855	93.855	5R01AI076456-10	62,364	—
Regulation of cytosolic pattern recognition receptor signaling in macrophages	93.855	93.855	2R01AI099009-06A1 REVISED	108,454	—
Regulation of food allergy and anaphylaxis by IL 33	93.855	93.855	5R01AI105839-05	241,435	—
Regulation of HPV Replication by Sirtuin Deacetylases	93.855	93.855	5R21AI133984-02	170,735	—
REPRIEVE A5332 Women's Ancillary Study	31	93.855	5R01AI123001-02//BWH AGMT 11/23/16	4,579	—
Role of mTOR in inflammatory monocytes in HIV infection	93.855	93.855	5F30AI131937-03	38,222	—
Role of Thymic Stromal Lymphopoietin in Chronic Rhinosinusitis	93.855	93.855	5R01AI104733-04	127,596	—
Roles of Early Life Colonization and Environmental Antigens on Childhood Asthma	93.855	93.855	1R21AI121742-01	46,404	19,299
Siderophores of Legionella pneumophila	93.855	93.855	5R01AI139054-02	393,275	—
Stenotrophomonas Maltophilia Type IV Secretion: Modulator of Both Host-Cell Apoptosis and Intercellular Killing	93.855	93.855	1R21AI139596-01A1	21,872	—
Structural and Functional Studies of gp42 and HLA Class 2 in EBV Entry	93.855	93.855	5R01AI076183-15	88,234	—
Structure and Function of EBV Protein Complexes that Trigger Epithelial Cell Entry	93.855	93.855	5R01AI137267-02	660,261	322,185
Studies of human B cell responses and antibody production during chronic airway inflammation	93.855	93.855	1R56AI131239-01A1	28,784	—
Successful Clinical Response In Pneumonia Therapy (SCRIPT) Systems Biology Center	93.855	93.855	5U19AI135964-02	2,256,999	45,762
Sustained Long Acting Prevention Against HIV Program Operation	93.855	93.855	5UM1AI120184-04	2,229,287	1,052,917
T regulatory cell responses during viral infection	93.855	93.855	5R21AI132848-02	257,157	—
Targeting Siglec-8/F to Treat Eosinophil and Mast Cell Related Disorders	93.855	93.855	5R01AI072285-11	64,931	—
Telomere Length and Molecular Mechanisms of Aging among HIV-infected Individuals on ART	31	93.855	1165293//5UM1AI068636-11	47,637	—
The Influence of Early Integration Events on HIV Latency and Reactivation Potentia	93.855	93.855	5K22AI136691-02	140,631	—
The non-canonical role of the CRISPR Cas2 nuclease in infection by Legionella pneumophila	93.855	93.855	5R21AI123462-02	91,416	—
The regulation and function of CD1d-restricted T cells	93.855	93.855	5R01AI043407-18	63,639	—
The role of FEZ1 in early HIV-1 infection	93.855	93.855	9R01AI150559-06A1	8,854	—
The Role of Group 1 CD1-restricted T Cells in Infectious Disease	93.855	93.855	5R01AI057460-15	457,896	44,082
The Role of MHC class Ib in T cell development and infectious disease	93.855	93.855	4R01AI040310-19	19,132	—
The role of non-classical MHC class I molecules in immune responses to Mycobacterium tuberculosis infection	93.855	93.855	5R01AI141083-02	555,251	—
The roles of Sirt1, a deacetylase, in immune tolerance and autoimmunity	93.855	93.855	5R01AI079056-09	(9,253)	—
The roles of Synoviolin in immune tolerance and autoimmunity	93.855	93.855	5R01AI108634-04	103,468	—
Third Coast Center for AIDS Research	93.855	93.855	5P30AI117943-05	2,365,158	750,814
Tocopherol regulation of the development of responsiveness to allergen early in life	93.855	93.855	5R01AI127695-02 REVISED	5,427	3,534
Type II Secretion and Legionella pneumophila Infection	93.855	93.855	5R01AI043987-19	131,718	—
UCLA-ACTG Minority HIV Investigator Mentoring Program Award	214	93.855	1560 G WA796//7UM1AI068636-13 REVISED	41,235	—
Urinary ProAdrenomedullin to Risk Stratify Children with Community-Acquired Pneumonia	16	93.855	901574 NU//1R03AI147112-01	3,659	—
US Prevalence, Distribution and Determinants of Adult and childhood Food Allergy (UPDATE-FA)	16	93.855	901526-NU//R21AI135702-02	86,889	—
Using siglecs and their ligands to treat allergic diseases SALTAD	93.855	93.855	5U19AI136443-02	1,910,659	1,291,832
ZIP Immunology Consensus Substudy	99	93.855	0255-8661-4609//5U19AI118610-03	18,100	—
				36,083,837	6,844,127
100K spontaneous mutations: the foundation for an evolutionary systems biology of C. elegans	225	93.859	UFDSP00012271 //R01GM127433	17,762	—
A Computational Biology Approach to Mapping Nucleosomes in Stem Cells	93.859	93.859	5R01GM107177-04 REVISED	7,363	—
A Quantum Dot Probe for Nanosecond-Timescale Imaging of Fast Biological Processes	93.859	93.859	5R21GM127919-02	195,666	—
Activation Mechanisms of Store-Operated Calcium Channels	93.859	93.859	5R01GM114210-04 REVISED	242,090	—
Activities of Nucleoprotein Complexes Visualized in Single-Molecule Experiments	93.859	93.859	4R01GM105847-04	23	—

NORTHWESTERN UNIVERSITY
 Supplementary Schedule of Expenditures of Federal Awards
 Year ended August 31, 2019

Cluster title/Federal grantor/Subagency/Project title	Pass-through ID number	CFDA	Sponsor award number	Federal expenditures	Passed-through to subrecipient
Department of Health and Human Services (continued):					
Algorithms for Glyco-Proteome Detection		93.859	5R01GM115739-02	\$ 437,278	—
Analysis of lamin-chromatin interactions and their regulation of chromosome organization and gene expression	36	93.859	5-10742-01//R01GM106023	324,465	—
Analysis of Novel Virus-Induced RNAs		93.859	5R01GM111652-04	113,895	—
Analyzing the role of chromatin compaction in nuclear mechanics, structure, and function		93.859	1K99GM123195-01A1	97,490	—
Anesthesia-induced learning deficiency and brain hyperoxia	151	93.859	EH16-011-S1 Amd 3/5R01GM112715-04	25,162	—
Assembly and epigenetic inheritance of the human centromere		93.859	2R01GM111907-06	29,277	—
Assembly and epigenetic inheritance of the human centromere		93.859	5R01GM111907-05	304,139	—
Biological Transition Metals		93.859	5R01GM111097-47S1	802,208	—
Biosynthetic studies on an unusual amino acid monomer deriving the discovery of novel natural products through genome mining		93.859	5F32GM122397-02	59,117	—
Biotechnology Predoctoral Training Program		93.859	2T32GM008449-26	50,082	—
Biotechnology Predoctoral Training Program		93.859	5T32GM008449-25	323,859	—
Cadherin-catenin regulation in dividing epithelial cells		93.859	5R01GM129312-02	302,337	—
Capturing Transient Protein Structures on Multiple Spatial and Temporal Scales		93.859	5R01GM115761-04	314,819	—
Carbene Catalysis Strategies for Organic Synthesis		93.859	5R01GM073072-13	188,664	13,431
Cell signaling in regeneration and tissue scaling		93.859	1R01GM129339-01A1	94,234	—
Cellular and Molecular Basis of Disease Training Program		93.859	2T32GM008061-36	(1,944)	—
Cellular and Molecular Basis of Disease Training Program		93.859	5T32GM008061-37	795,840	—
Center for the Structural Biology of Cellular Host Elements in Egress, Trafficking, and Assembly of HIV (CHEETAH Center)	263	93.859	10044932-10//2P50GM082545-12	313,711	—
Characterization of new methanobactins and their biosynthetic enzymes		93.859	1F32GM131665-01	34,421	—
Characterization of pmoD		93.859	5F32GM119191-03	51,456	—
Characterization of the antiviral and nuclear regulatory functions of FEZ1 & NEK1		93.859	5R01GM101975-05S1	(984)	—
Chemistry of Life Processes Predoctoral Training Program		93.859	2T32GM105538-07	306,352	—
Chemistry of Life Processes Predoctoral Training Program		93.859	5T32GM105538-05 REVISED	(25,751)	—
Coboglobins-Cobalt-Substituted Hemoglobins and Myoglobin		93.859	3R01GM111097-45S1	(302,286)	—
Control and Function of Ndr/LATS Signaling Systems		93.859	5R01GM084223-09 REVISED	30,851	—
Cryo ptychography combined with x-ray fluorescence analysis of metals in cells		93.859	2R01GM104530-06 REVISED	270,120	14,724
Cytoskeletal mechanisms of oocyte polarity		93.859	3R01GM124029-02S1	279,122	—
Defining the molecular and cellular mechanism of epigenetic transcriptional memory		93.859	5R01GM118712-04	299,169	—
Development of Affinity Rod Scaffolds for Cryo-EM Sample Preparation	164	93.859	11000768-046//1R21GM127958-01A1	74,293	—
Development of dictyBase, an online informatics resource		93.859	5R01GM064426-16	409,997	—
Developmental Dynamics of Ciliated Epithelia		93.859	3R01GM069970-09S1	277,508	—
Direct Determination of the Distribution of Fitness Effects of Spontaneous Mutations in Caenorhabditis Elegans	225	93.859	UFDSP00010414 // R01GM107227-03	(2,577)	—
Dissecting functional cooperation among subunits in a catalytic ribonucleoprotein	155	93.859	60045478 Amd 001 // R01GM120582	141,608	—
DNA zip codes and the spatial organization of the yeast genome		93.859	4R01GM080484-09	694	—
DNA zip codes and the spatial organization of the yeast genome		93.859	5R01GM080484-12	298,539	—
Dynamics and allostery in protein-RNA regulation	155	93.859	60060542 Amd 002 // R01GM120923	53,360	—
Elucidating the cellular functions of E3 ubiquitin ligase by orthogonal ubiquitin transfer (OUT)	88	93.859	SP0013463-01//2R01GM104498-06A1	72,484	—
Eukaryotic Post-Translational Modifications		93.859	5R01GM067193-12	(74)	—
Genetic Analysis of Beneficial Bacterial Colonization	266	93.859	790K182//R35GM119627	55,973	—
High Throughput Screening for Small-molecules Facilitating Prion Study		93.859	5R01GM110045-03	(5)	—
Impact of genetic variants on gene regulation and 3D genome organization in human diseases		93.859	7R35GM124820-03	23,550	—
Information Processing by Post-Translational Modification		93.859	152213.5081815.0003 Amd 3 // 5R01GM105375-04	20,704	—
Integrated Empirical and Translational Research to Diversify the Scientific Workforce		93.859	5R35GM118184-04	592,645	25,940
Integrative informatics approach to develop safe glucocorticoid therapies		93.859	5R01GM112945-04	173,971	—
International Population Study on Macronutrients and BP - INTERMAP		93.859	R01HL050490	(6,939)	(6,939)
Investigating the molecular mechanism of mitochondrial tethering		93.859	5R01GM120303-03	368,497	—
Mechanisms of hnRNP in Alternative Splicing Regulation During EMT		93.859	5R01GM110146-03 REVISED	(2,470)	—
Mechanistic investigation of long non-coding RNAs in Drosophila oogenesis		93.859	1F32GM122349-03	66,886	—
Medical Scientist Training Program		93.859	5T32GM006152-33	1,411,371	—
Mentoring for Success: Developing Fundamental Skills for Biomedical Research		93.859	5R25GM079300-13	608,125	—
Metalloenzymes and metal homeostasis		93.859	5R35GM118035-04	647,655	—
Metalloregulation by MerR and Fur Protein Families		93.859	5R01GM038784-30	354,700	—
Microbial Succession and Adaptive Immune Responses in the Premature Infant		93.859	5R01GM108494-05	88,398	68,585
Microtubule motors and generation of cell polarity		93.859	5R01GM052111-20	387,166	—
Microtubule motors, cytoskeletal organization and cell polarity		93.859	1R35GM131752-01	6,055	—
Modeling scientific workforce dynamics using social network analysis	93	93.859	152451.5080936.0403//5U01GM112623-04	(3,149)	—
Molecular Biophysics Training Program at Northwestern University		93.859	5T32GM008382-27	310,325	—
Molecular Mechanisms of Basolateral Targeting in Polarized Epithelial Cells		93.859	5R01GM070736-12	199,889	—
Molecular Regulation of Radial Intercalation		93.859	5R01GM113922-03	452,210	—
National Infrastructure for Standardized and Portable EHR Phenotyping Algorithms	117	93.859	183980//3R01GM105688-07S1	158,344	—
National Infrastructure for Standardized and Portable EHR Phenotyping Algorithms	117	93.859	190583//5R01GM105688-07	99,880	—

NORTHWESTERN UNIVERSITY
 Supplementary Schedule of Expenditures of Federal Awards
 Year ended August 31, 2019

Cluster title/Federal grantor/Subagency/Project title	Pass-through ID number	CFDA	Sponsor award number	Federal expenditures	Passed-through to subrecipient:
Department of Health and Human Services (continued):					
National Resource for Translational and Developmental Proteomics		93.859	5P41GM108569-05	\$ 1,353,970	—
Neural Crest Ontogeny and the Control of Stem Cell Attributes		93.859	5R01GM116538-04	239,967	—
New Methods and Strategies for the Concise Synthesis of Bioactive Polycyclic Molecules		93.859	5R01GM124089-02	304,354	—
Non-coding RNAs and their mechanisms and functions		93.859	5R35GM118144-03	481,143	—
Northwestern University Interdepartmental Neuroscience Postbaccalaureate Research Education Program		93.859	5R25GM121231-03	225,110	—
Postdoctoral Pathways – Broadening Access to Career Advancement	30	93.859	4500002877 // 1R25GM121257 - 01A1	141,660	—
Prion-mediated protein aggregation/co-aggregation and cellular consequence		93.859	1R01GM126318-01A1	279,695	—
Probing Cellular Membrane Processes by Single Particle Orientation and Rotational Tracking	88	93.859	SP00012129-01//1R01GM115763	95,017	—
Regulation and function of bacterial 100S ribosome		93.859	7R01GM121359-03	15,319	—
Regulation and Function of Intermediate Filaments in Cell Mechanics		93.859	3P01GM096971-05S1	66,463	65,957
Regulation and Function of Intermediate Filaments in Cell Mechanics		93.859	5P01GM096971-05	(224)	—
Regulation and Function of Intermediate Filaments in Cell Mechanics		93.859	5P01GM096971-07	1,203,226	372,948
Regulation of chromosome segregation during oocyte meiosis		93.859	5R01GM124354-02	388,573	—
Regulatory Roles of Zinc Fluxes in Metalloprotein Occupancy and Cell Cycle Progression		93.859	5R01GM115848-04	128,006	—
RNA Ligation Pathways in Mammalian Unfolded Protein Response		93.859	5R01GM120307-03	273,201	—
SampleStream: A Radically Simplified Platform for Protein Sample Preparation		93.859	Agmt 2/15/2018 // 1R43GM121130-01A1	16,855	—
Selective inhibition of nitric oxide synthase for multiple indications	111	93.859	1R35GM131788-01	147,984	—
Selective inhibition of nitric oxide synthase for multiple indications		93.859	5R01GM049725-23	347,402	46,993
Social signals that regulate C. elegans development		93.859	1R01GM126125-01A1	170,149	—
Specific inhibition of transcription factors with Cobalt-Schiff Base Complexes		93.859	5R01GM121518-03	276,060	—
Structural and biophysical studies of DNA topoisomerases		93.859	2R01GM051350-21A1	(23)	—
Structural and biophysical studies of proteins, nucleic acids, and their complexes		93.859	5R35GM118108-03	736,573	—
Structure and function of desmosomal cadherins	54	93.859	1(GG011995-01)//5R01GM118584-03	182,641	—
Structure and Function of Mammalian Copper Transporters		93.859	5R01GM115211-02	71,736	—
Supplement request for TIRF microscope for studies on the role of Microtubule regulators in HIV-1 infector	54	93.859	1(GG010108-21)//3P01GM105536-05S1	149,981	—
Targets for Design of Drug Combinations that Select against Antibiotic Resistance		93.859	5R01GM113238-04 REVISED	93,872	92,091
Team Dynamics, Networks, & Assembly (Team DNA)	214	93.859	1295 G UA135/5R01GM112938-04	125,865	—
Team Dynamics, Networks, and Assembly (Team DNA)	214	93.859	1295 G TA411-1//5R01GM112938-04	120,261	—
The Dictyostelium Stock Center		93.859	2R01GM087371-10	47,459	—
The Dictyostelium Stock Center		93.859	5R01GM087371-09 REVISED	170,991	—
The role of innate immunity in the traumatic brain injury-induced immune suppression syndrome		93.859	5K08GM117341-04	220,579	—
The role of the microtubule regulators Kif4 and EB1 in HIV-1 infection - Project 2	54	93.859	1(GG010108-17)//5P01GM105536-05	350,536	—
Tube size control by Src and Yorkie/YAP		93.859	5R01GM108964-04 REVISED	1,202	—
Understanding the Structural/Functional Basis of HIV Replication in Macrophages	217	93.859	10996sc//5P50GM082250-12	85,292	—
Violence Exposure and Cardiovascular Risk in Adolescence		93.859	1F32HL146005-01	28,386	—
				21,858,701	693,730
A Cognitive Test Battery for Intellectual Disabilities		93.865	201402548-02//1R01HD076189-01A1	13,865	—
Application of Targeted Reinnervation for People with Transradial Amputation	166	93.865	CC#81930 CL4098/5R01HD081525-05	3,848	—
Assessing microenvironment and endothelial cell instruction of testis function		93.865	5F31HD089693-03	28,075	—
Bilateral Priming Plus Task Specific Training for Severe Upper Limb Hemiparesis		93.865	5R01HD091492-03	358,181	249,632
Biomechanics and Walking in Cerebral Palsy: Ankle Foot Orthoses - Footwear Combinations	182	93.865	11865SUB//1R21HD09482301	4,075	—
Center for Reproductive Health After Disease		93.865	5P50HD076188-05 REVISED	297,270	—
Cognitive Architecture of Bilingual Language Processing		93.865	5R01HD059858-08	247,721	—
Constraint induced movement therapy for walking in individuals post stroke	166	93.865	CC# 81388 CL4442//1R01HD082216	11,985	—
Cortical Priming to Optimize Gait Rehabilitation Post Stroke	229	93.865	7201//5R01HD075777-05	11,775	—
Determination of the Recruitment of Indirect Motor Pathways in Chronic Hemiparetic Stroke		93.865	1R21HD099710-01	4,935	—
Deubiquitinating Enzymes as Targets for Male Contraception	16	93.865	901501-NU Amd 01//5U01HD084046-04	68,555	—
Development of a Portable Synergy Resistant EMG-driven FES Device for Intuitive Control of Grasp and Release During Functional Arm Activities Following Stroke		93.865	5R21HD094073-02	184,320	—
Development of a serum biosignature for ectopic pregnancy	250	93.865	564595//R01HD076279-05	52,750	—
Development of a standardized measure of social-communication abilities for children with neurodevelopmental disorders	217	93.865	10364sc//1R01HD093012	49,926	—
EASI: Shear Wave Elastography Assessment for Predicting Success of Labor Induction	266	93.865	858K531//1R01HD096361_01	28,184	—
Effect of a patient-centered decision app on TOLAC: An RCT	217	93.865	8231sc//5R01HD078748-05	135,439	—
Effect of Injury Severity and Location on Spasms Post SCI		93.865	5K01HD084672-05	134,938	—
Effect of Neural Constraints on Movement in Stroke		93.865	4R01HD039343-15	54,308	2,724

NORTHWESTERN UNIVERSITY
 Supplementary Schedule of Expenditures of Federal Awards
 Year ended August 31, 2019

Cluster title/Federal grantor/Subagency/Project title	Pass-through ID number	CFDA	Sponsor award number	Federal expenditures	Passed-through to subrecipient
Department of Health and Human Services (continued):					
Effects of a Prenatal Depression Preventive Intervention on Parenting and Young Children's Self-Regulation and Functioning (EPIC)		93.865	1R01HD097215-01A1	\$ 58,586	—
Effects of device-assisted practice of activities of daily living in a close-to-normal pattern on upper extremity motor recovery in individuals with moderate to severe stroke		93.865	5R01HD095187-02	103,776	—
Endometriosis and Retinoids		93.865	5R37HD0038691-20	419,980	—
Engineering Career Development Center in Movement and Rehabilitation Sciences		93.865	4K12HD073945-05	(560)	(560)
Exploring novel regulatory mechanisms underlying enhancer activation and cell fate transition		93.865	1K99HD094906-01A1	50,567	—
Extremely Long Lived Proteins and Female Reproductive Aging		93.865	1R21HD098498-01 REVISED	20,724	—
Fertility Decision-Making in Transgender Youth	16	93.865	901547-NU//1R21HD097459-01	21,358	—
Firearm Involvement Among Parents and Their Adolescent Children: A Prospective Longitudinal Study of At-Risk Youth		93.865	1R01HD093935-01	325,210	—
Genes, Androgens and Intrauterine Environment in PCOS		93.865	3P50HD044405-15S1	161,373	100,345
High-performance, low-cost, passive prosthetic knees optimized to replicate physiological gait in multiple mobility scenarios	130	93.865	S4256-PO176307//5R03HD092676-02	43,957	—
Homeostatic to reactive hyaluronan matrices in ovarian reproductive aging		93.865	5R01HD093726-02	356,627	84,634
Improve dynamic lateral balance of humans with SCI	166	93.865	CL5253//1R01HD083314	15,469	—
Infant attention in the context of language		93.865	5F32HD095580-02	56,841	—
Influence of rapid sensory feedback on motor learning following stroke		93.865	1F32HD094552-01 REVISED	(2,915)	—
Integrative Genomics, Epigenomics and Bioinformatics Analyses of Human Uterine Fibroids		93.865	1R01HD089552-03	676,138	118,232
Intensive Combination Approach to Rollback the Epidemic (iCARE) in Nigerian Adolescents		93.865	5UG3HD096920-02	407,160	92,949
Intensive Rehabilitation Research Grant Writing Workshops in the United States		93.865	MUSC18-033-8D222//5R25HD074546-08	13,143	—
Interdisciplinary Engineering Career Development Center in Movement and Rehabilitation Sciences		93.865	5K12HD073945-08	898,715	615,267
Intimate Partner Violence in Sexual Minority Female Adolescents and Young Adults		93.865	010314-006//5R01HD086170-04	449,236	—
Linking language and cognition in infancy: Entry points and developmental change	221	93.865	5R01HD083310-05	412,017	—
Maternal psychological stress, adverse birth outcomes, and the role of inflammatory mediators in the placenta		93.865	1F32HD100076-01	4,198	—
Maternal, Infant, and Child Health Outcomes of Sexual Minority Women: An Opportunity for Improving Health Equity	263	93.865	NW10048964//1R01HD0914505-01	14,177	—
Maternal-Fetal Medicine Units Network -- The Northwestern Study Center		93.865	3UG1HD040512-20S1	264,398	31,326
MFMU Network Capitation Agreement	85	93.865	Agmt 4/25/14//U10HD036801	552,280	69,622
Molecular Basis of Altered Drug Metabolism During Pregnancy	229	93.865	16572//5R01HD089455-02	329,071	—
More Money, More Problems? Understanding the Hidden Costs of Social Mobility	248	93.865	5112051//1R21HD095448-01 REVISED	184,424	—
Motor impairment related changes in muscles properties in chronic stroke		93.865	5R01HD084009-04	278,828	75,523
Motor Learning in a Customized Body-Machine Interface for Persons with Paralysis	166	93.865	CC#81750//R01HD072080	34,691	—
Neuromuscular Mechanisms Underlying Poor Recovery from Whiplash Injuries		93.865	5R01HD079076-05	247,139	30,759
Novel Pediatric Neurocognitive Screening Using Central Auditory Tests	60	93.865	R1064JLM//5R01HD095277-02	30,504	—
Oncofertility Consortium Annual Conference		93.865	5R13HD063248-09	23,712	—
Optimization of Drug Dosing in Pregnant Women through Research and Education (OPRC)	128	93.865	1423 NU//5U54HD047905-14	924	—
Optimizing Medication Management for Mothers with Depression during Pregnancy (OPTI-MOM)		93.865	5U54HD085601-05	854,076	44,104
Origin of Chronic Diseases of Aging Among Rural African Young Adults	226	93.865	SUB00001828//1R01HD091046-01A1	43,759	—
Origins of Increased Motoneuron Excitability in Hemispheric Stroke	166	93.865	7125//R01HD089952	64,343	—
Pathophysiology and Rehabilitation of Neural Dysfunction		93.865	3T32HD007418-25S1	(84,602)	—
Pathophysiology and Rehabilitation of Neural Dysfunction		93.865	5T32HD007418-28	357,213	—
Pathways linking Early Adversity and Support to Behavioral and Physical Health	249	93.865	203344NU//1R01HD091235-02	50,622	—
Patient navigation to improve outcomes among low-income women in the postpartum period		93.865	1R01HD098178-01	54,642	—
PED Screen: Pediatric Sepsis EHR Registry, Clinical Outcomes, and Predictive Model		93.865	5R01HD087363-02 REVISED	590,601	582,484
Pediatric HIV/AIDS Cohort Study (PHACS) Coordinating Center (CC) (U01)	202	93.865	TUL-HSC-566640-18/19//5U01HD052104-14	15,464	—
Pharmacokinetics of Risperidone Across Pregnancy		93.865	5K23HD087529-03	187,473	—
Pharmacologic strategies to use the levonorgestrel implant in HIV-infected women	246	93.865	34-2009-2031-001//5R01HD085887-04	17,130	—
Prevalence and Correlates of School-Based Medicaid-Funded Services for Children with Autism Spectrum Disorder	260	93.865	19-84104//5P2CHD065752-09	8,945	—
Preventing the Intergenerational Transmission of Antisocial Behavior: Successful Child Socialization Strategies in Families with a Parental History of Incarceration		93.865	5R21HD092671-02	279,958	—
Probing Mediator 12 function in uterine fibroids		93.865	5R21HD082781-02	103	—
Psychosocial Intervention, Maternal Inflammation, and Birth Outcomes: Centering vs Routine Prenatal Care (PIINC)	151	93.865	EH17-256-S2-1//5R01HD092446-02	65,193	—
Regulation of NOD-like receptors in juvenile influenza A virus infection	263	93.865	10034012-CHIC//5K12HD047349-14	1,065	—
Remediating Academic and Non-Academic Skills Deficit among Disadvantaged Youth	219	93.865	FP053700-3//P01HD076816	91,842	—
Research Career Development in Obstetrics and Gynecology		93.865	5K12HD050121-14	319,160	—
Role of Muscle stem cells in sarcomere addition and contracture development	166	93.865	80184 // 1R03HD094602-01	659	—
Rural African American Young Adults' Pathways to Psychosocial and Physical Health	226	93.865	SUB00000358//2R01HD030588-24 Amdnd 4	158,436	—
Study of Ovarian Aging and Reserve in Young Women (SOAR)	242	93.865	SUBK00009462//5R01HD088638-03	8,188	—
SweetMama: Leveraging technology for diabetes education and support to low-income pregnant women		93.865	5R21HD094271-02	117,662	—
Targeted problem reactivation and incubation during slow-wave sleep		93.865	5R03HD087111-02	27,912	—
The Chicago Longitudinal Study (CLS) Health Screening Examination	243	93.865	A005404701//2R01HD034294-23	(296)	—
The Effects of Injury Timing on Neural Microstructural Complexity and Motor Impairments in Cerebral Palsy		93.865	1R03HD094615-01A1	69,964	—
The Reproductive Window in Young Adult Cancer Survivors	216	93.865	55368070 // R01HD080952-05 Amd. 003	13,804	—

NORTHWESTERN UNIVERSITY
 Supplementary Schedule of Expenditures of Federal Awards
 Year ended August 31, 2019

Cluster title/Federal grantor/Subagency/Project title	Pass-through ID number	CFDA	Sponsor award number	Federal expenditures	Passed-through to subrecipient
Department of Health and Human Services (continued):					
Understanding Diverging Profiles of Academic and Physical Health Outcomes in African American Youth		93.865	5R01HD093718-02	\$ 368,564	30,828
Upper-Extremity Torque Perceptual Impairments in Chronic Hemiparetic Stroke		93.865	5K25HD096116-02	136,023	—
Uterine Leiomyoma Research Center Program		93.865	5P01HD057877-10	1,248,569	163,919
				<u>13,208,370</u>	<u>2,291,788</u>
A test of the calcium hypothesis of Alzheimers disease		93.866	5R21AG060267-02	154,343	—
A Therapeutic Wearable Sensor for Dysphagia	186	93.866	Awd 4/18/2019//1R41AG062023-01	28,369	—
A Universal Medication Schedule to Promote Adherence to Complex Drug Regimens		93.866	5R01AG046352-05	376,210	107,152
A wearable acoustomechanic sensor system for quantifying social interactions of patients with dementia	279	93.866	Agmt 3/15/19 // 1R43AG060812-01	59,464	—
A5361s Pitavastatin to REduce Physical Function Impairment and FRailty in HIV (PREPARE)	31	93.866	A5361/FY17.830.004/5R01AG054366-02	8,670	—
Alterations of Sleep and Circadian Timing in Aging		93.866	5P01AG011412-20	1,792,610	486,989
Alzheimer's Disease Cooperative Study - A4	253	93.866	75689162//U19AG010483-25R	2,738	—
Alzheimer's Disease Core Center		93.866	3P30AG013854-23S2	2,182,193	—
Alzheimer's Disease Neuroimaging Initiative (ADNI3)	253	93.866	79634993/WEI2015-01//2U19AG02490411	136,436	—
An Epidemiologic Study of Disparities in Sleep and Cognition in Older Adults (DISCO)		93.866	1R01AG059291-01A1	80,607	—
An Epidemiologic Study of Disparities in Sleep and Cognition in Older Adults (DISCO)		93.866	1R56AG059291-01	348,681	—
Application of Economics & Social Psychology to Improve Opioid Prescribing Safety (AESOPS) Tria	253	93.866	96347693//5R21AG057395-02	73,219	—
ARMADA: Advancing Reliable Measurement in Alzheimer's Disease and cognitive Aging		93.866	3U2CAG057441-03S1	1,929,167	992,264
BACE1 as a Therapeutic Target for Alzheimer's Disease		93.866	2R01AG022560-16	6,072	—
BACE1 as a Therapeutic Target for Alzheimer's Disease		93.866	5R01AG022560-15	3,887	—
Behavioral Economics Applications to Geriatrics Leveraging EHRs (BEAGLE)		93.866	5R21AG057383-02	222,318	8,926
C. elegans Model for Neurodegenerative Diseases of Aging		93.866	5R37AG026647-15	335,037	—
Cardiovascular and HIV/AIDS Effects on Brain Structure/Function and Cognition	251	93.866	CNVA00050794(128001-6)//5R01AG034852-09	104,875	—
Cell non-autonomous regulation of proteostasis in aging and longevity		93.866	1R56AG059579-01 REVISED	248,925	—
Chicago Asian Resource Center for Minority Aging Research (RCMAR)	176	93.866	0916//P30AG059304	25,861	—
COCOA to improve walking performance in Peripheral Artery Disease: the COCOA-PAD Study		93.866	5R21AG050897-02 REVISED	86,126	22,940
Collaborative Care for the Older Injured Patient: A Trauma Medical Home	107	93.866	IN4688176NWI//5R01AG0542493-03	47,799	—
Communication Bridge: A person-centered Internet-based intervention for individuals with primary progressive aphasia		93.866	5R01AG055425-03	514,387	72,187
Connectomic Imaging in Familial and Sporadic Frontotemporal Degeneration	250	93.866	574237//5U01AG052943-03	150,740	—
Decision Making and Implementation of Aging-in-Place/Long Term Care Plans among Older Adults		93.866	1R01AG058777-01A1 REVISED	189,462	—
Determinants of neurodegenerative decline in the aphasic variant of Alzheimer's disease		93.866	3R01AG056258-07S1	480,233	5,609
Developing a Longitudinal Resource for Genetic Research in Behavioral and Health Sciences	266	93.866	636K694//4R01AG041868-04	(21,653)	—
Development of a non-fibrillar amyloid-beta oligomer selective positron emission tomography imaging diagnostic for Alzheimer Disease	2	93.866	Agmt 3/5/17//R41AG054337-01	(73)	—
Disordered Proteostasis as a Driver of Disease in the Aging Lung		93.866	5P01AG049665-04	2,204,035	496,797
Early Onset AD Consortium - the LEAD Study (LEADS)	107	93.866	IN-4683237-NW//5U01AG057195-02	95,700	—
Effects of a Dedicated Nurse Liaison Intervention for Geriatric Patients in the Emergency Department		93.866	1R03AG050945-01A1	64,313	404
Estradiol reduces mitochondrial oxidant stress in SNc DA neurons		93.866	5F32AG058396-03	54,128	—
Exceptional Cognitive Aging: Neuropsychologic, Anatomic and Pathologic Correlates		93.866	3R01AG045571-05S1 REVISED	327,867	—
F31 for Aneesha Nilakantan in Support of: Age-related Impairments of Recollection Precision: Neural Mechanisms and Modulation via Network-targeted Brain Stimulation		93.866	5F31AG057109-02 REVISED	39,312	—
First-in-human SAD & MAD trials for MW151, a novel Alzheimer's disease drug candidate that attenuates proinflammatory cytokine dysregulation	233	93.866	3200002345-19-178//R01AG061898	232,023	—
First-in-human study of MW151, a novel drug targeting neuroinflammation	106	93.866	Agmt 10/31/18//1R44AG060846-01	127,615	—
Frailty and Functional Status in Older Liver Transplant Patients	217	93.866	11172sc//3K23AG048337-05S1	2,866	—
Functional Properties of the Lateral Entorhinal Cortex in Learning and Aging		93.866	5F31AG055331-03 REVISED	46,013	—
Gene Therapy for Alzheimer's Disease	93	93.866	153271.5106938.0002//5R21AG059157-02	72,160	—
Genetic Epidemiology of Caffeine and Cognitive Decline		93.866	5K01AG053477-04	105,333	—
Hepatocyte growth factor to Improve Functioning in PAD: the HI-PAD Study		93.866	1R21AG056903-01	175,921	23,939
High dimensional mediation analysis for DNA methylation markers mediating cardiovascular health metrics and cardiovascular diseases	278	93.866	WU-19-384//1R21AG063370-01	12,806	—
Highly Functional Organic Core Templated High-Density Lipoproteins to Reverse Vascular Disease		93.866	1R21AG062999-01	37,604	—
High-throughput multi-modal analysis of natural variation in C. elegans healthspan	250	93.866	572177 // 1R21AG053638-01A1	78,350	—
Identification of Heterogeneity within the High-Cost Patient Population: A Growth Mixture Modeling Approach (NIH NRSA Predoc Fellowship for Charlotte E. Ward, MPH.)		93.866	5F31AG055235-02 REVISED	37,833	—
Improving Quality & Equity of Emergency Care Decisions (IQED)	253	93.866	10535843//5R21AG057400-02	5,828	—
Integrative Pathways to Health and Illness	266	93.866	834K352//1U19AG051426-01A1	29,865	—
INTERmittent pneumatic ComprESSION for Disability rEversal in PAD: the INTERCEDE Trial		93.866	5R01AG057693-02	560,254	28,099

NORTHWESTERN UNIVERSITY
 Supplementary Schedule of Expenditures of Federal Awards
 Year ended August 31, 2019

Cluster title/Federal grantor/Subagency/Project title	Pass-through ID number	CFDA	Sponsor award number	Federal expenditures	Passed-through to subrecipient
Department of Health and Human Services (continued):					
LEAF 2.0: Randomized trial of a technology-based positive emotion intervention for informal caregivers of individuals with Alzheimer's disease		93.866	5R01AG058613-02	\$ 451,571	139,657
LitCog III: Health Literacy and Cognitive Function among Older Adults		93.866	5R01AG030611-12	789,618	53,672
LOAD risk genes in postsynaptic endosomal trafficking		93.866	1R56AG063433-01	555,378	—
Long-Term Nicotine Treatment of Mild Cognitive Impairment	253	93.866	81622655//6R01AG047992-02	53,660	—
Long-term Outcomes of Knee OA in the OAI Cohort	217	93.866	10477sc	10,586	—
Modeling Ovarian Aging Phenotype in Mechanically Tuned 3D Matrices (NIH NRSA Predoc Fellowship for Emma Gargus, BS.)		93.866	5F30AG058387-02	35,925	—
Molecular and cellular mechanisms of the UNC5C netrin receptor in Alzheimer's disease pathogenesis		93.866	1RF1AG057727-01A1 REVISED	589,843	—
Molecular Mechanisms Underlying Behavioral and Psychological Symptoms in Alzheimers Disease		93.866	5R01AG062249-02	421,333	66,651
Molecular Neuropathology and Mechanisms of BACE1 Elevation in Alzheimer's Disease		93.866	5R01AG030142-10	259,628	—
MRI of Left Atrial Hemodynamic Disorders in Atrial Fibrillation		93.866	3R21AG055954-02S1	167,180	—
National Alzheimer's Coordinating Center	265	93.866	UW5C7728//5U01AG016976-20	59,183	—
National Health Literacy Mapping to Inform Healthcare Policy	248	93.866	5050165//5R01AG46267-04	13,518	—
Noninvasive Stimulation to Improve Hippocampal-Dependent Memory in Older Adults		93.866	3R01AG049002-05S1	369,477	—
Non-Invasive Treatment of Abdominal Aortic Aneurysm Clinical Trial (N-TA3CT)	246	93.866	36-5360-2141-101//4R01AG037120-04	16,970	—
NRSA F31 for Timothy John Hark in support of: Determining and Characterizing Substrates of Protein Degradation Impairments in Models of Alzheimer's Disease		93.866	1F31AG059364-01A1	31,678	—
NRSA in support of Michael Fernandopulle: Mechanisms of autophagic dysfunction in progranulin-related neurodegeneration		93.866	1F30AG060722-01	18,243	—
Optimal Older Donor and Recipient Matching to Enhance Liver Transplant Outcomes		93.866	1R21AG049385-02	52,649	14,761
Optimization of small molecule SERCA2b activators to inhibit neuron loss in Alzheimer's disease	144	93.866	1R41AG062001-01	117,996	—
Personality and Well-being Trajectories in Adulthood		93.866	5R01AG018436-19	534,191	56,422
Physiological role of naturally-occurring amyloid beta oligomers		93.866	5R21AG060203-02	230,267	—
Point-of-Care Wearable Pressure and Temperature Sensor System for Therapeutic Compression Garments and Venous Leg Ulcers	279	93.866	1R43AG059445-01	13,784	—
Prediclinical Alzheimers Disease Drug Development of Novel MAPK Inhibitors		93.866	4U01AG043415-05	(16)	—
Prediclinical development of a selective attenuator of neuroinflammation for MCI/AD	233	93.866	320000125116-257//5U01AG050636-03	205,429	—
PREDICT-AD/FTD: Multimodal Imaging Prediction of AD/FTD and Differential Diagnosis		93.866	5R01AG055121-03	745,101	250,528
Predoctoral and postdoctoral training program in aging and dementia		93.866	5T32AG020506-18	334,676	—
Preparation for End-of-Life Decision Making in Mild Alzheimer's Disease	73	93.866	A011590//1R01AG057714-02 Revised	12,673	—
Production and quality analysis of clinical drug for a novel CNS protein kinase inhibitor therapeutic candidate	145	93.866	Agmt 11/12/18 // 1R24AG062095-01	139,979	—
Proteostasis in Aging and Neurodegenerative Disease		93.866	5P01AG054407-02	1,737,506	1,273,549
Quantifying age-related changes in shoulder muscle coordination in healthy adults		93.866	1F31AG057137-01A1	39,968	—
Reducing High-Risk Geriatric Polypharmacy via EHR Nudges	165	93.866	9920180010//R21AG057396	77,635	—
Regulation of Peripheral Proteostasis		93.866	1RF1AG057296-01	352,494	—
Regulation of tau expression in Alzheimer's disease and aging	99	93.866	0255-1551-4609//5R01AG054008-04	207,377	—
Role of BMP Signaling in the Aging Brain		93.866	5R01AG054429-03	509,831	—
Sex Differences in Central Stress Response and Alzheimer's Disease Neuropathology		93.866	1RF1AG057884-01	372,734	—
Sirtuins: novel determinants and therapeutic target in systemic sclerosis		93.866	1R56AG054207-01	40,556	—
Slow Outward Currents and Learning In Aging Hippocampus		93.866	5R37AG008796-28	876,571	—
Sporadic Alzheimer's Disease modeled with diabetes and high cholesterol in rabbi		93.866	1R56AG050492-01A1	585,696	—
Stellate Ganglion Blockade for the Management of Vasomotor Symptoms		93.866	5R01AG049924-03	602,746	215,503
Stress and Sexuality Divergent Neuropathy in Alzheimer's Disease		93.866	1R56AG053491-01	4,505	2,512
Structural characterization of Aβ strain variation in AD mouse models	253	93.866	110365091//1R01AG061865-01	126,519	—
Sustaining quality of life of the aged: Heart transplant or mechanical support?		93.866	3R01AG047416-05S1	538,093	309,192
Synaptic substrates of age-dependent memory deficits		93.866	2RF1AG017139-15	778,619	339,786
Testing Tele-Savvy, an On-Line Psychoeducation Program for Informal Alzheimer's Caregivers	73	93.866	T882454//1R01AG054079-01	74,166	—
The Effect of High Intensity Walking on Frailty		93.866	5R01AG060162-02	382,674	26,575
The Effect of Home Heating Prices on the Mortality and Morbidity of Older Americans		93.866	5R03AG058113-02	25,001	—
The ENRGISE Study	225	93.866	UFDSP00011851//U01AG050499	194	—
The Mobile Toolbox for Monitoring Cognitive Function		93.866	3U2CAG060426-02S1	1,001,398	375,109
The role of activity induced exosome signaling in synaptic pathology of Alzheimer's Disease		93.866	5R01AG061787-02	371,767	—
UCLA Older Americans Independence Center (Administrative Supplement)	214	93.866	1558 G VA507//5P30AG028748-12	3,390	—
Unacylated Ghrelin to Improve Functioning in PAD: the GIFT Trial		93.866	1R21AG063076-01	9,567	—
Using Patient Outcomes to Inform Surgical Education	250	93.866	567734//5R01AG049757-03	615	—
				<u>28,826,571</u>	<u>5,369,223</u>
A clinically applicable model of retinal oxygen metabolism		93.867	5R21EY027502-02 REVISED	32,908	—
Activation of the Angiopoietin-Tie2 Pathway to Treat Ocular Hypertension and Glaucoma		93.867	5R01EY025799-04	1,035,155	201,429
Ca2+ channels in retinal photoreceptors	231	93.867	W000941480//1R01EY026817-01A1	76,622	—
Cell types and functional circuitry in the mouse retina		93.867	1R01EY030169-01A1	26,811	—

NORTHWESTERN UNIVERSITY
 Supplementary Schedule of Expenditures of Federal Awards
 Year ended August 31, 2019

Cluster title/Federal grantor/Subagency/Project title	Pass-through ID number	CFDA	Sponsor award number	Federal expenditures	Passed-through to subrecipient:
Department of Health and Human Services (continued):					
Clinical optical coherence tomography for retinal metabolic imaging	156	93.867	2R44EY026466-001/2R44EY026466-02	\$ 36,449	—
Diabetic Retinopathy Clinical Research Network Chair Grant		93.867	5U10EY023207-05	174,232	117,264
F31 in support of Sam Cooler-Functional specialization by asymmetric receptive fields in the retina		93.867	5F31EY029593-02	44,502	—
Function of Basal Synapses at Mammalian Photoreceptors		93.867	5R01EY012141-22	333,388	—
Functional Divergence at the Mouse Type 6 Bipolar Cell Terminal		93.867	1F31EY030344-01	14,394	—
GABAergic Retinal Ganglion Cells in the Mammalian Retina		93.867	1F31EY030360-01	12,559	—
Investigating nanoscale neuronal damages in early glaucoma towards clinical optical detector		93.867	5R01EY029121-02	294,279	140,643
Investigating oxygen metabolism in diabetic retinopathy		93.867	5R01EY026078-04	431,139	218,099
Macular Edema Treatment Trials Associated with MUST (META-MUST)		93.867	Sub#2002749092/5U10EY024527-04	579	—
Mechanisms underlying the formation of the cornea and ocular surface epithelium	118	93.867	5R01EY028304-02	307,287	—
Microvasculature in Colon Field Carcinogenesis: Clinical-Biological Implications		93.867	BMC ID 6610-01//R01CA224911	264,251	—
Multidisciplinary Visual Sciences Training Program		93.867	5T32EY025202-05	146,717	—
Natural dynamics of attention in primate prefrontal cortex		93.867	5F32EY027185-02 REVISED	560	—
Neural Mechanisms of Fixation Choice While Searching Natural Scenes		93.867	5R01EY021579-07	337,912	64,314
Novel circuit mapping strategies to reverse engineer the retina		93.867	1DP2EY026770-01	723,176	—
Oxygen delivery and metabolism in diabetic retinopathy using visible-light optical coherence tomography		93.867	5F30EY026472-04	38,493	—
Role of Host Cell Factors in Herpes Simplex Virus (HSV) Keratitis		93.867	5R01EY023977-04	480,925	—
Spatially resolved measurements of retinal metabolism		93.867	1R01EY029306-01A1	79,749	—
The Mechanical Basis of Primary Open Angle Glaucoma		93.867	5R01EY019696-10	661,041	499,507
The Role of MicroRNAs in Corneal Epithelial Homeostasis		93.867	5R01EY019463-08	84,065	—
The Roles of Autophagy in Limbal/Corneal Epithelia		93.867	5R01EY028560-02	890,357	—
Ultra-fast Scalable OCT Systems based on a New Photon Detector		93.867	5R21EY029516-02	96,121	—
				<u>6,623,671</u>	<u>1,241,256</u>
A FAIR Public Repository for Experimentally Verified Proteoforms		93.879	1R21LM013097-01	18,409	—
A New Generation Clinical Decision Support System		93.879	0038305 (124684-1)/5R01LM011663-04	36,814	—
A Novel Graph Processing Architecture to Ascertain & Monitor Care Coordination	251	93.879	5K01LM011973-03	(205)	—
Bayesian Generative Methods for Extracting and Modeling Relations in EHR Narratives		93.879	1R21LM012618-02	190,858	19,885
Enhancing clinical trials participation through library partnerships		93.879	5G08LM012688-03	35,697	—
Implementing and Evaluating a Machine Learning Tool for Entity Resolution in Drug Use and Sexual Contact Networks of YMSJ		93.879	5R21LM012578-02	158,580	18,972
Improving Physician Adoption of Pharmacogenomic Clinical Decision Support via Implementation Science Methodologies		93.879	5F31LM012492-02	33,634	—
Informatics Platform for Mammalian Gene Regulation at Isoform-level		93.879	5R01LM011297-07	337,878	—
Multidimensional Computer Adaptive Testing for Patient Reported Outcomes		93.879	5R01LM011962-04	291,240	104,954
Predocctoral Training Program in Biomedical Data Driven Discovery (BD3)		93.879	5T32LM012203-05 REVISED	229,316	—
				<u>1,332,221</u>	<u>143,811</u>
Diabetic Retinopathy Clinical Research Network	116	93.988	Agmt 12/13/12 // U10 EY14231	18,645	—
Building capacity for patient-centered outcomes research to improve the quality and impact of HIV care in Tanzania		93.989	1D43TW010946-01A1	34,374	—
Building Research And Innovation in Nigeria's Science - (BRAINS)	234	93.989	SP0031902-60041063//5D43TW010134-03	126,169	—
Developing Innovative Interdisciplinary Biomedical Engineering Programs in Africa		93.989	5D43TW009374-05	(29,828)	—
Developing Innovative Interdisciplinary Biomedical Engineering Programs in Africa		93.989	5D43TW009374-05	14,208	14,208
Expanded Multidisciplinary NeuroAIDS Research Training to Improve HIV Outcomes in Nigeria		93.989	5D43TW009608-07	195,376	77,396
Fogarty Global Health Training Fellowship Program	93	93.989	116559-5101817//5D43TW010543-03	22,342	—
HIV and Mycobacterial Disease in Mali		93.989	5D43TW010350-04	232,775	132,410
Northwestern and Jos University Research Training Program in HIV and Malignancies		93.989	5D43TW009575-05 REVISED	171,500	49,077
Northwestern/Nigeria Research Training Program in HIV and Malignancies (NN-HAM)		93.989	2D43TW009575-06	65,267	—
Support of Training and Mentoring in Nigeria for Academics (STAMINA)	232	93.989	UJ-STAMINA-NW04//D43TW010130-04	105,666	—
University of Ibadan MEPI Junior Faculty Research Training Program (UI-MEPI-J)	228	93.989	7/225/29/NU-02//D43TW010140-02	91,121	—
				<u>1,028,970</u>	<u>273,091</u>
"NIH Toolbox" Design Consulting for Research Domain Criteria Field Test Battery		93.RD	HHSN271201800720P	101,042	—
A randomized, double-blind, placebo-controlled study of 4-hydroxytamoxifen topical gel in women with mammographically dense breasts -fixed pricing	259	93.RD	00004887/HHSN261201200034I	1,192	—
A real-time, cost-effective, accurate UV measurement and prevention system to reduce skin cancer incidence in consumers	279	93.RD	AGMT 4/24/19//R44CA224658	163,553	—
AMD Ryan Initiative Study (ARIS) LONGITUDINAL STUDY OF EARLY AMD AND RETICULAR PSEUDODRUSEN	72	93.RD	Agmt 4/23/19//HHSN263201700001C	1,196	—
Asthma Cohort Support Contract		93.RD	HHSN275201300013C	327,741	4,479

NORTHWESTERN UNIVERSITY
 Supplementary Schedule of Expenditures of Federal Awards
 Year ended August 31, 2019

Cluster title/Federal grantor/Subagency/Project title	Pass-through ID number	CFDA	Sponsor award number	Federal expenditures	Passed-through to subrecipient
Department of Health and Human Services (continued):					
Cancer Prevention Agent Development Program: Early Phase Clinical Research		93.RD	HHSN261201200035/HHSN26100014	\$ 2,138,410	612,698
Cognitive Assessment and Monitoring Platform For Integrative REsearch (CAMPFIRE II)	43	93.RD	SC1725901/HHSN261201800047C/75N91018C00047	38,148	—
Coronary Artery Risk Development in Young Adults (CARDIA) Study - Chicago Field Center		93.RD	HHSN268201800003I	582,627	—
Coronary Artery Risk Development in Young Adults (CARDIA) Study-Chicago Field Ct		93.RD	HHSN268201300027C	8,477	8,477
Depressive symptom presentation and course, cardiovascular events and mortality in the Coronary Artery Risk Development in Young Adults (CARDIA) Study		93.RD	HHSN268201800003I	90,457	—
Exact neurobiological correlates of key aspects of behavior in real-time		93.RD	HHSN271201800190P	4,447	—
Exact neurobiological correlates of key aspects of behavior in real-time		93.RD	HHSN271201800279P	4,019	—
Examining neural correlates of stimulus-stimulus associations using fMRI and MVPA		93.RD	75N95019P00038	45,508	—
IPA Agreement 8/2016		93.RD	AGREEMENT 8/18/16	85,939	—
Molecular Regulation of Systemic Inflammation		93.RD	0001561149/7R01AI20625-04	55,097	—
Multi-Ethnic Study of Atherosclerosis (MESA) - Task Area 3	265	93.RD	UWSC11311/HHSN268201500003I	14,567	—
Multi-Ethnic Study of Atherosclerosis (MESA) Chicago Field Center Subcontract	265	93.RD	UWSC8539/HHSN268201500003I	397,238	—
Pediatric HIV/AIDS Cohort Study (PHACS): Understanding Maternal HIV Disease through Pregnancy and the Postpartum Period and its Role in Child Health Outcomes		93.RD	TUL-HSC-556639-18/19/U01HD052104-14	21,986	—
Pharmacokinetics and Safety of Commonly Used Drugs in Lactating Women and Breastfed Infants	66	93.RD	2335518/HHSN-275201000003I	643	—
Phase II Multi-Center, Prospective, Randomized, Double-Blind Study of Nitazoxanide in Acute and Chronic Norovirus in Hematopoietic Stem Cell and Solid Organ Transplant Recipients		93.RD	HHSN272201600016C	667,221	301,528
Protocol Implementation	231	93.RD	HHSN2722013-15-0045 Task B	24,639	—
Role of Valve-Mediated Hemodynamics on Bicuspid Aortopathy	223	93.RD	FY19.954.005_AMD1/5R01HL133504-04	169,828	—
Structural Genomics Centers for Infectious Diseases		93.RD	HHSN272201700060C	4,691,710	3,262,917
SurvivorConcierge: Extending Cancer Survivorship Care Beyond the Clinic Using a Smartphone-enabled Monitoring, Navigation and Tailored Intervention Program	274	93.RD	HHSN261201500013C	106,150	—
Targeting KRas Switch I with highly specific bacterial endopetidase	159	93.RD	17-40-BIAN/HHSN26120080001E	295	—
The COPD Caregiver's Toolkit: A Novel Resource for Supporting COPD Caregivers, Educating and Empowering Families Affected by COPD, and Improving the Quality of COPD Care Delivery	171	93.RD	HHSN268201400042U // #PMP5-NHLB-0504	5,658	—
The Subclinical Vascular Contributions to Alzheimer's Disease: The Multi-Ethnic Study of Atherosclerosis (MESA) Multisite Study of Aβ	277	93.RD	101720-551083/5R01AG058969-02	121,104	—
Top Down Proteomics of KRas Proteoforms	123	93.RD	17X183 // HHSN261200800001E	85,954	—
Using 3-D Primary Mucosal Cultures to Study Antibody Function at Mucosal Barriers	80	93.RD	0000958776/5UM1-A1068618-13	33,190	—
Office of Minority Health:					
Clinical Trials Awareness Modules for the Lupus Conversations Academic-Community Partnership		93.137	5CPIMP181168-02-00	282,641	127,841
Office of the Assistant Secretary for Health:					
National Lupus Outreach and Clinical Trail Education Program (Lupus program)-LUPUS CONVERSATIONS Project		93.137	1CPIMP171141-01-00	55,105	32,064
Re-Entry Community Linkages (RE-LINK)		93.137	5 CPIMP161134-04-00	367,828	18,833
				<u>422,933</u>	<u>50,897</u>
Office of the Director, National Institutes of Health:					
Biochemical Basis of Chromatin Folding and Chromosome Condensation		93.310	5DP5OD024587-03	422,638	—
Data and Research Support Center Linkage Pilot	271	93.310	VUMC65034/5U2COD023196-02	76,053	—
ECHO Consortium on Perinatal Programming of Neurodevelopment	99	93.310	0255-2292-4609/4UG3OD023337-03	5,877	—
ECHO PRO Research Resource: A Developmentally-based Measurement Science Framework for Assessing Environmental Exposure and Child Health		93.310	1U24OD023319-01 REVISED	5,541,926	1,229,046
Environmental Contributors to Child Health Originating from the National Fetal Growth Study (ECCHO-NFGS)	136	93.310	MUSC16-087-8C267/5UG3OD023316-02	231,657	10,061
Illinois Precision Medicine Consortium (IPMC)		93.310	1UG3OD023189-01 REVISED	1,066,066	1,066,066
Infrastructure: Illinois Precision Medicine Consortium (IPMC)		93.310	3OT2OD026557-01S1	9,284,148	6,309,695
Lifecourse Approach to Developmental Repercussions of Environmental Agents on METabolic and Respiratory health (LA DREAMERS)	253	93.310	94743768/UG3OD023287	13,413	—
Precision Medicine Initiative Cohort Program Coordinating Center (U2C)	271	93.310	VUMC60724/5U2COD023196-02 REVISED	190,481	—
The role of steady state broadly neutralizing antibody tissue levels in preventing distal site SHIV replication		93.310	5K01OD024882-03	421,946	227,981
TOP2A effects on transcription in gliomas: implications for personalized therapy		93.310	7DP5OD021356-05	481,783	—
				<u>17,735,788</u>	<u>8,842,849</u>
Amlyoid Beta Oligomer Induction of Alzheimer's Disease in Nonhuman Primates	177	93.350	Agmt 2/16/18 // 1R43OD023025-01A1	3,059	—
Acquisition of a Thermo Fisher Scientific Q Exactive UHMR mass spectrometer		93.351	1S10OD025194-01	794,501	—
Animal Models for SCN2A Neurodevelopmental Disorders		93.351	5R21OD025330-02	159,421	—
PAGES (Progressing through the Ages: Global Climate Change, Evolution, and Societal Well-being)	230	93.351	076638-15799/R25OD020203-01A1	50,049	—
Tandem Genetically Encoded Voltage and Calcium Indicator Mice for Optical Physiology of Excitable Cells		93.351	1R21OD025345-01A1	64,838	—
The 10x Chromium System for High-Throughput Single Cell Genomics		93.351	1S10OD025120-01A1	78,013	—
Understanding the mechanism(s) of systemic antibody delivery, distribution, and localization to mucosal sites in the in vivo macaque model		93.351	5K01OD026571-02	132,335	22,247
				<u>1,279,157</u>	<u>22,247</u>
Science Club Summer Camp: Training Teachers and Youth in Authentic STEM Practice		93.859	5R25GM129223-05	297,711	55,913
Department of Health and Human Services Total				<u>376,498,795</u>	<u>60,191,511</u>

NORTHWESTERN UNIVERSITY
 Supplementary Schedule of Expenditures of Federal Awards
 Year ended August 31, 2019

Cluster title/Federal grantor/Subagency/Project title	Pass-through ID number	CFDA	Sponsor award number	Federal expenditures	Passed-through to subrecipient
Department of Homeland Security:					
Development of a Real-Time Decision Support System for Proactive Response, including Recourse Planning, under Uncertain Active Cascading Emergencies	18	97.061	18-409 // 2017-ST-061-QA001-01	\$ 136,093	—
Chalcogenide semiconductors for g-ray detection from earth abundant elements		97.077	14DNARI00006-05-00	199,178	—
Department of Homeland Security Total				335,271	—
Department of Justice:					
National Institute of Justice:					
Trajectories of Delinquency and the Juvenile Justice Systems Response		16.541	2013-JF-FX-0057	(309)	—
Firearm Involvement in Delinquent Youth and Collateral Consequences in Young Adulthood: A Prospective Longitudinal Study		16.560	2016-R2-CX-0039	169,380	—
Firearm involvement of parents and their adolescent children: A prospective intergenerational study of high-risk youth		16.560	2017-IJ-CX-0019	251,824	—
				421,204	—
Evaluating a Cognitive Behavioral Approach for Improving Life Outcomes of Underserved Young Women: A Randomized Experiment in Chicago	219	16.726	FP064531 // 2016-JU-FX-0002	73,079	—
Office of Justice Programs:					
Field-generated innovations to address elder abuse, neglect and financial exploitator		16.582	2017-VF-GX-K136	273,355	2,700
Metropolitan Family Services Legal Aid Society Needs Assessment	138	16.582	Agreement 4/19/17//2012-VF-GX-K022	38	—
				273,393	2,700
Department of Justice Total				767,367	2,700
Department of Labor:					
Islands of Labor: Reservation Labor Markets and American Indian Well-Being	23	17.RD	NU-2017-001//DOL-OPS-15-C-0060	308	—
Department of Labor Total				308	—
Department of State:					
U.S. Educational Partnerships	17	19.RD	Agmt 9/26/2017//S-IS400-16-GR-0042	29,796	—
Department of State Total				29,796	—
Department of Transportation:					
Federal Highway Administration:					
Models and policy tools for emerging transportation services: Promoting socially inclusive outcomes		20.215	693JJ31945046	5,069	—
Developing Analysis, Modeling, and Simulation (AMS) Tools for Connected and Automated Vehicle (CAV) Applications	124	20.RD	P010198023 NO. R5 // DTFH6116D00030	53,699	—
Development of an Analysis/Modeling/Simulation (AMS) Framework for V2I and CV Environment	124	20.RD	P010198023 R2 // DTFH6116D00030	833	—
Estimation of Travel Time Distributions Along User-Defined Travel Paths	124	20.RD	P010198023 NO. R4 // DTFH6116D00030	46,987	—
Fundamentals of Travel Time Reliability Guide	124	20.RD	P010198023 R1 // DTFH6116D00030	79	—
Implementation of Analysis, Modeling and Simulation Tools for Road Weather Connected Vehicle Applications	124	20.RD	P010203492 Mod 2//DTFH6116D00053 R3	13,633	—
Integrated Modeling for Road Condition Prediction (IMRCP) Phase 3	124	20.RD	P010203492//D5FH6116D00053	58,734	—
Role of Calibration in Quantitative Alternatives Analysis	124	20.RD	P010203492 R1 // DTFH6116D00053	15,942	—
Tools for Tactical Decision-Making/Advancing Methods for Predicting Performance	124	20.RD	P010198023 NO. R3 // DTFH6116D00030	10	—
Department of Transportation Total				194,986	—
Department of Veterans Affairs:					
Clinical Impact of Respiratory-Swallow Training on Refractory Dysphagia in OP HNC Funding		64.RD	36C24E18C0051	800	—
Edward Hines, Jr. VA Hospital:					
Elisa Gordon VA IPA - Spark Seed Funding		64.018	Agmt 04/25/18	2,924	—
Intergovernmental Personnel Act (IPA) Assignment Agreement for Jennifer Kahr		64.018	IPA Agmt Signed 05/31/2017 (578/151)	6,584	—
Intergovernmental Personnel Act (IPA) Assignment Agreement for Mengnan Wu		64.018	578/151	16,514	—
Intergovernmental Personnel Act (IPA) for Geoffrey Brown		64.018	IPA Agmt - 578/151	76,310	—
IPA Agreement for Kwang-Youn A. Kim: Maneuverability Enhancement Following Spinal Cord Injury		64.018	578/151	7,595	—
				109,927	—
Jesse Brown VA Medical Center:					
Intergovernmental Personnel Act (IPA) Assignment Agreement for David Z. Ivancic		64.018	IPA Agmt Signed 08/31/18	70,925	—
Intergovernmental Personnel Act (IPA) Assignment Agreement for Elisa J. Gordon (NU Supervisor: David Brentem)		64.018	IPA Agmt. Signed 11/08/18	9,427	—
Intergovernmental Personnel Act (IPA) Assignment Agreement for Elspeth Beauchamp		64.018	Agmt Signed 08/31/18	77,800	—
Intergovernmental Personnel Act (IPA) Assignment Agreement for Ewa Kosciuczuk (537/151)		64.018	IPA Agmt. Signed 10/05/18	10,293	—
Intergovernmental Personnel Act (IPA) Assignment Agreement for Hao Wang		64.018	IPA AGMT. Signed 09/05/18	40,468	—
Intergovernmental Personnel Act (IPA) Assignment Agreement for Linda India		64.018	IPA 10/15/18	1,588	—

NORTHWESTERN UNIVERSITY
 Supplementary Schedule of Expenditures of Federal Awards
 Year ended August 31, 2019

Cluster title/Federal grantor/Subagency/Project title	Pass-through ID number	CFDA	Sponsor award number	Federal expenditures	Passed-through to subrecipient
Department of Veterans Affairs (continued):					
Intergovernmental Personnel Act (IPA) Assignment Agreement for Lindsey Kreutzer		64.018	IPA Agmt. Signed 10/15/2018	\$ 9,312	—
Intergovernmental Personnel Act (IPA) Assignment Agreement for Meagan Shallcross		64.018	IPA Agmt. Signed 10/15/2018	22,909	—
Intergovernmental Personnel Act (IPA) Assignment Agreement for Mengjia Kang		64.018	IPA Agmt Signed 10/31/18	13,019	—
Intergovernmental Personnel Act (IPA) Assignment Agreement for Michael Cavanaugh		64.018	IPA Agmt Signed 01/25/18	4,601	—
Intergovernmental Personnel Act (IPA) Assignment Agreement for Michael Dixon		64.018	Agmt Signed 11/07/2017	4,826	—
Intergovernmental Personnel Act (IPA) Assignment Agreement for Paul Cheresh		64.018	IPA AGMT Signed 01/09/2019	54,371	—
Intergovernmental Personnel Act (IPA) Assignment Agreement for Salvatore Condello (FY17)		64.018	IPA Agmt Signed 08/31/18	29,899	—
Intergovernmental Personnel Act (IPA) Assignment Agreement for Saul Soberanes		64.018	IPA Agmt 09/21/18	16,517	—
Intergovernmental Personnel Act (IPA) Assignment Agreement for Saul Soberanes		64.018	IPA Agmt Signed 09/19/18	50,306	—
Intergovernmental Personnel Act (IPA) Assignment Agreement for Seok-Jo Kim		64.018	IPA Agmt Signed 04/12/2017	3,221	—
Intergovernmental Personnel Act (IPA) Assignment Agreement for Shantel Olivares: Molecular Mechanisms of Nonalcoholic Fatty Liver Disease		64.018	IPA Agmt Signed 11/09/2017	61,528	—
Intergovernmental Personnel Act (IPA) Assignment Agreement for Tom Kniecik		64.018	IPA Agmt. Signed 10/15/2018	22,116	—
Intergovernmental Personnel Act (IPA) Assignment Agreement for Yanni Yu		64.018	Yanni Yu IPA FY19	71,441	—
Intergovernmental Personnel Act (IPA) Assignment Agreement for Weiqi Huang		64.018	IPA AGMT: Signed 07/11/2019	6,799	—
IPA for Paul Cheresh		64.018	IPA Agmt Signed 11/13/2017	6,041	—
Leigh Ann Fall - Intergovernmental Personnel Act (IPA) Assignment Agreement		64.018	IPA AGMT: Signed 05/03/19	26,822	—
VA IPA for Christina Spaulding		64.018	IPA AGMT: Signed 04/24/2019	27,158	—
VA IPA for Kazumi Ebine		64.018	537/151	(2,874)	—
VA IPA for Thao Pham FY19		64.018	IPA Agmt. Signed 12/21/2018	56,902	—
				<u>695,215</u>	—
VA Sierra Pacific Network:					
Intergovernmental Personnel Act (IPA) Assignment Agreement for Benjamin Schalel		64.018	IPA Agmt. Signed 08/08/2018	17,883	—
				<u>823,825</u>	—
Department of Veterans Affairs Total					
Institute of Museum and Library Services:					
Getting to know their data doubles: An inquiry into student perceptions of privacy issues associated with academic library participation in learning analytics	107	45.312	IN-4370124-NU // LG-96-18-0044-18	11,402	—
				<u>11,402</u>	—
Institute of Museum and Library Services Total					
National Aeronautics and Space Administration:					
A simulation pipeline for the study of kilonovae light curves and r-process nucleosynthesis in compact binary mergers	247	43.001	18042-02//80NSSC18K0565	35,020	—
Biologic and Resource Analog Investigations in Low Light Environments [BRALILE]	27	43.001	BMSSA-006 // 80NSSC17M0054	78,800	—
Chandra Observations of Extreme Mass Loss from the Progenitors of Luminous Type IIn SNe	185	43.001	G07-18045A	28,238	—
Continued Chandra Observations of GW170817	185	43.001	DD8-19100X/NAS8-03060	27,357	—
Continued Chandra Observations of GW170817 (Proposal 19408644-C)	185	43.001	DD8-19101A/NAS8-03060	10,460	—
Continued Chandra-NuSTAR Monitoring of the Unprecedented Metamorphosis of SN2014C at t>1500 days since Explosio	185	43.001	G09-20060A/NAS8-03060	6,142	—
Continued X-Ray Monitoring of GW170817 with Chandra	185	43.001	DD7-18096A // NAS8-03060	18,007	—
Evolution of hydrogen in the inner solar system: volatile abundances and isotopic compositions in CAIs and chondrules from primitive carbonaceous chondrites	36	43.001	3-10829-1255-01//80NSSC18K604	28,151	—
Late-time Monitoring of GW170817 across the Electromagnetic Spectrum	185	43.001	G09-20058A/NAS8-03060	10,009	—
Late-time X-rays to map the Zoo of Engine-driven Stellar Explosions	185	43.001	G09-20056X/NAS8-03060	8,391	—
Late-time X-rays to map the Zoo of Engine-driven Stellar Explosions	185	43.001	G07-18057X // NAS8-03060	14,646	—
Late-time X-rays to map the Zoo of Engine-driven Stellar Explosions	185	43.001	G08-19044X // NAS8-03060	35,456	—
Life Underground	253	43.001	65904754 Amd. 4 // NNA13AA92A	18,376	—
Mapping extreme mass loss from evolved massive stars with coordinated Chandra-NuSTAR observations	185	43.001	G07-18054A // NAS8-03060	8,884	—
Probing Plasma Properties in Supernova Remnants observed by XMM-Newton	161	43.001	5841-NU-NASA-F03G//NNX15AF03G	24,534	—
Probing the Energetics and Environments of Hydrogen-poor Core-Collapse SNe	185	43.001	G06-17053A/NAS8-03060	300	—
Source of Energy and pre-explosion progenitor evolution of Super-luminous Supernovae	185	43.001	G08-19047A/NAS8-03060	37,343	—
Source of Energy and pre-explosion progenitor evolution of Super-luminous Supernovae	185	43.001	G07-18046A/NAS8-03060	23,391	—
The Balloon-Borne Large Aperture Telescope for Polarization - BLASTPol	250	43.001	573659 // 80NSSC18K0481	106,320	—
The Late-time X-ray Behavior of Short Gamma-ray Bursts: Implications for Energetics and Rates	185	43.001	G08-19025X //NAS8-03060	24,230	—
The Triggering Mechanisms and Accretion Modes of AGN: New Cosmological Simulations to Interpret Chandra Surveys	185	43.001	TM7-18007X//NAS8-03060	14,597	—
The unprecedented metamorphosis of SN2014C: from a H-stripped explosion to a strongly interacting supernove	185	43.001	G06-17054A//NAS8-03060	18,775	—
Tracking the Evolution of an X-ray Counterpart to a Gravitational Wave Event	185	43.001	G07-18024X//NAS8-03060	48,179	—
				<u>625,606</u>	—
Project FUSION: Facilitating Unified Systems of Interdependent Organizational Networks	226	43.003	SUB00001667//80NSSC18K0511	117,712	—
Multiple Undergraduate Research Projects	230	43.008	2015-05200-09(078131-15789)-AB425-03//NNX154AAI05H	67,615	—

NORTHWESTERN UNIVERSITY
 Supplementary Schedule of Expenditures of Federal Awards
 Year ended August 31, 2019

Cluster title/Federal grantor/Subagency/Project title	Pass-through ID number	CFDA	Sponsor award number	Federal expenditures	Passed-through to subrecipient
National Aeronautics and Space Administration (continued):					
Air-Carbon Boundary Layer Chemistry for Hypersonic Ablation	140	43.012	G201-19-W7671//80NSSC19K0220	\$ 7,535	—
Biosignature Preservation in Sulfate-Dominated Hypersaline Environments	130	43.RD	S4664 - PO 248450//80NSSC18K1088	54,500	—
Chip-Scale Active Fast Light Gyroscope and Accelerometer using Integrated Photonic Technology	64	43.RD	Agmt 10/23/18 // 80NSSC18P2077	34,556	—
Combining Statistical Samples of Resolved-ISM Simulated Galaxies with Realistic Mock Observations to Fully Interpret HST and JWST Surveys	188	43.RD	HST-AR-14562.001-A//NAS5-26555	50,465	—
Design and fabrication of strain-balanced low dark current short-wavelength infrared photodetectors based on type-II superlattices with optical response from 0.4 to 2.5um	152	43.RD	80NSSC18C0170	33,050	—
Fast Light Enhanced Active Gyroscopes, Accelerometers and Fiber-Optic Sensors	64	43.RD	Agmt 5/30/16 // NNX16CM03C	1,283	—
Joint HAWC+/ALMA study of magnetic fields in Ophiuchus	205	43.RD	SOFIA 05-0133 01 // NAS2-97001	37,900	19,017
Late-time monitoring of GW170817 across the electromagnetic spectrum	188	43.RD	HST-GO-15606.001-A//NAS5-26555	632	—
Magnetic Field Structure in Perseus at 0.01 pc Scale	205	43.RD	SOF 05-0081 Santos // NAS2-97001	13,364	—
Metallicity and Azimuthal Angle Diagnostics of Inflows and Outflows: Interpreting HST Measurements of Circum-Galactic Gas Flow	188	43.RD	HST-AR-14293.001-A//NAS5-26555	13,357	—
Plug and Play: Utilizing MOFs in Preexisting Carbon Dioxide Removal Assemblies for Enhanced Performance, Smaller Footprint, and Lower Energy Consumption	154	43.RD	Agmt 2/6/19//80NSSC18P2140	19,234	—
Preparation and Characterization of Sn- and Sb-based Zintl Phases as Promising Thermoelectric Materials	35	43.RD	1538068-004//NN12AA01C	82,804	—
Probing CO-dark Gas within the Planck Galactic Cold Clumps	188	43.RD	HST-GO- 15104.001-A//NAS5-26555	58,874	—
Project AMIGA: Mapping the Circumgalactic Medium of Andromeda	188	43.RD	HST-GO-14268.022-A	2,048	—
Quantifying the Diversity of Relativistic Transients with Radio Observations	188	43.RD	HST-HF2.51403.001-A//NAS5-26555	100,972	—
Underlying Hosts or Highly-Kicked? Determining the Nature of Host-less Short Gamma-ray Bursts with HST	188	43.RD	HST-GO-14685.007-A Amd. 3 and Amd. 4//NAS5-26555	44,762	—
NASA Ames Research Center:					
Effects of Spaceflight on Gastrointestinal Microbiota in Mice: Mechanisms and Impact on Multi-System Physiology		43.007	NNX15AL05G-000012	285,549	—
NASA George C. Marshall Space Flight Center:					
The Columnar to Equiaxed Transition and Dendrite Fragmentation		43.003	NNX17AD48G-000006	92,117	—
Microstructure Evolution in Freeze-Cast Materials		43.007	80NSSC18K0196-P00001	34,973	—
NASA Goddard Space Flight Center:					
Biofilms in the Deep Subsurface: Implications for Planetary Habitability		43.001	80NSSC18K1267	44,822	—
Correcting and Coating Thin Walled X-ray Optics via a Combination of Controlled Film Deposition and Magnetic Smart Materials		43.001	NNX17AE10G-000001	73,276	—
Deciphering Kepler's Planetary Systems		43.001	NNX14AD21G 000005	93,999	—
Detailed mapping of extreme mass loss with coordinated NuSTAR-XMM Observations		43.001	80NSSC19K0646	10,271	—
Detailed mapping of extreme mass loss with coordinated NuSTAR-XMM observations		43.001	NNX17AC44G-000002	8,499	—
Detailed Mapping of Extreme Mass-Loss From Evolved Massive Stars With Swift		43.001	80NSSC18K0575	1,564	—
Dynamical Modeling of Dense Star Clusters with a Parallel Monte Carlo Code		43.001	NNX14AP92G/000005	(6,253)	—
Energy and Geometry of Jet-driven Explosions in the Local Universe		43.001	80NSSC17K0052	1,545	—
Late-time X-ray Behavior of Short Gamma-Ray Bursts: Implications for Energetics and Rates		43.001	80NSSC18K0189	3,929	—
Lipid Biomarkers of the Deep Subsurface Biosphere		43.001	NNX15AM08G 000002	182,341	—
Mapping Extreme Mass Loss from Massive Stars with FERMI and the VLA		43.001	80NSSC18K1732	52,762	—
Probing the Mass-Loss History of Massive Stars with Swift		43.001	NNX17AD82G	1,925	—
Supernova Remnant Observations and Dark Matter Searches with Micro-X		43.001	80NSSC18K1445-P00002	636,981	—
Supernova Remnant Observations with Micro-X		43.001	NNX16AL94G-000001	(41,890)	—
Supernova Remnant Observations with Micro-X		43.001	NNX16AL94G-000001	185	185
The Physics, Observational Signatures, and Consequences of AGN-Driven Galactic Winds		43.001	80NSSC18K1096 P0001	50,931	—
The Strontium Isotope Composition of Neoproterozoic Carbonates: Implications for the Carbon Cycle and the Evolution of the Biosphere		43.001	80NSSC17K0245	106,167	—
X-ray Observations of Rapid, Luminous and Blue Stellar Explosions		43.001	80NSSC19K0384	52,205	—
				<u>1,273,259</u>	<u>185</u>
Convective Effects on Solid/Liquid Interface Dynamics in the Freeze-Casting Process					
		43.008	NNX16AI78A	57,850	32,056
Further Development of Aperture: A Precise Extremely large Reflective Telescope Using Re-configurable Elements		43.009	NNX16AL31G-000001	19,216	9,998
Compact Robust Integrated PPM Laser Transceiver Chip Set with High Sensitivity, Efficiency, and Re-Configurability		43.012	NNX16AE02G 000003	58,835	16,920
Efficient and Scalable Fabrication of Solid Oxide Fuel Cells via 3D-Printing		43.012	80NSSC17K0192-P00004	66,842	—
				<u>125,677</u>	<u>16,920</u>
NASA Lyndon B. Johnson Space Center:					
A US-Russian Collaborative Proposal for Data Collection in HERA: The Relationship between Composition, Interpersonal Relations, and Team Effectiveness in Space Crews					
	62	43.002	501237SG138-004//NNX16AQ48G	76,653	—
CREWS: Crew Recommender for Effective Work in Space		43.003	NNX15AM32G-000012-000013	147,232	73,205
SCALE: Shared Cognitive Architectures for Long-term Exploration		43.003	80NSSC19K0221-P00008	319,964	51,976
SCALE: Shared Cognitive Architectures for Long-term Exploration		43.003	RG026-G1 // NNX15AM26G	(173,004)	—
Team Task Switching in Astronaut Crews on the International Space Station: Integrating Multiteam Membership, Multiteam Systems		43.003	80NSSC18K0276-P00008	390,199	—
multi-tasking, & Multidimensional Networks to Monitor & Enable Functional Work Shifts in Astronaut Crews					
Team Task Switching in Astronaut Crews on the International Space Station: Integrating Multiteam Membership, Multiteam Systems, Multitasking & Multidimensional Networks to Monitor & Enable Functional Work Shifts in Astronaut Crews		43.003	RF890-G1 // NNX15AK73G	(149,638)	—
	87	43.003		<u>534,153</u>	<u>125,181</u>

NORTHWESTERN UNIVERSITY
 Supplementary Schedule of Expenditures of Federal Awards
 Year ended August 31, 2019

Cluster title/Federal grantor/Subagency/Project title	Pass-through ID number	CFDA	Sponsor award number	Federal expenditures	Passed-through to subrecipient
National Aeronautics and Space Administration (continued): NRI: Collaborative Research: Integrating Physics Models and Control Methodologies for Enhanced Legged Locomotion on Yielding Terrain		43.007	NNX15AR24G 000007	\$ 95,421	—
National Aeronautics and Space Administration Total				3,960,937	203,357
National Endowment for the Humanities: Metal Soap Protrusions on Georgia O'Keeffe's Paintings: Establishing a New Quantitative Imaging Paradigm for Linking Scientific Research and Preservation		45.149	PR-258900-18	137,751	3,665
Tools for Listening to Texts-in-Performance		45.169	HAA-258799-18	60,053	—
National Endowment for the Humanities Total				197,804	3,665
National Science Foundation: 3D Braided Composite Structures - Experimental Characterization and Modeling of Fracturing Behavior		47.041	CMMI-1435950	(458)	—
Advancing Dynamic Relief Response: Integration of New Data Streams and Routing Models		47.041	CMMI-1265786	(117)	—
An Optimal Design of Experiments Approach for Reliable Risk Assessment with Error-prone Electronic Medical Records		47.041	CMMI-1436574	107	—
Anti-ferromagnetic Electric-field-controlled Memory Devices		47.041	ECCS-1853879	2,240	—
CAREER: Engineering Non-Growth Metabolism for High-Yield Biochemical Production		47.041	CBET-1452549-003	81,399	—
CAREER: Mechanics of Geomaterials Exposed to Multi-Physical Perturbations: Innovating Science, Training and Education through Fundamental Principles		47.041	CMMI-1351534-005	57,362	—
CAREER: Modeling Soil-Machine Interaction for Advances in Civil Construction and Terrestrial Robotics		47.041	CMMI-1846817	45,530	—
CAREER: Prediction of multiscale emergent dynamics in decentralized cell populations		47.041	CBET-1653315	56,927	—
CAREER: Rational design of a biomimetic nanomaterial library to probe mechanisms behind virus-induced immunopathology		47.041	CBET-1453576	74,107	—
CAREER: Transformative mobility analysis: Mixed Methods framework		47.041	CMMI-1847537	22,375	—
CBET-EP SRC A Game-Changing Approach for Tunable Membrane Development: Novel Covalent Organic Framework Active Layers Supported by Solvent Resistant Materials	230	47.041	087147-16468-01/CBET-1706219	43,853	—
CDI-Type I: Discovery of Novel Biochemical Pathways		47.041	CBET-0835800	(10,981)	—
Collaborative Research: 2018 Mixed-Integer Programming Workshop		47.041	CMMI-1841303	2,436	—
Collaborative Research: Analysis and Solution Methods for Function Robust Optimization Models		47.041	CMMI-1361942	37,422	—
Collaborative Research: Concurrent Design of Quasi-Random Nanostructured Material Systems (NMS) and Nanofabrication Processes using Spectral Density Function		47.041	CMMI-1662435	35,026	—
Collaborative Research: Electrorotational fluid instabilities		47.041	CBET-1704996	74,346	—
Collaborative Research: Elucidation and Evaluation of Strategies to Mitigate Secondary Reactions in Cellulose Pyrolysis for Enhanced Production of Hydrolysable Anhydrosugars		47.041	CBET-1435228	58,556	—
Collaborative Research: Formation and Stability of Eutectic Nanostructures in Laser-Irradiated Particle Suspensions		47.041	CMMI-1663196	(3,989)	—
Collaborative Research: Fundamentals of Material Behavior and Structure in Making Laminated Metal Composites with Assistance of Electrica Current in Bonding Operation		47.041	CMMI-1463459	32,636	—
Collaborative Research: GOALI: Modeling and optimizing patient-flow dynamics in hospitals and hospital networks		47.041	CMMI-1763100	81,933	—
Collaborative Research: Innovation in Sustainable Mass Timber Building Systems		47.041	CMMI-1762757	82,907	—
Collaborative Research: Model-Based Multidisciplinary Dynamic Decisions in Design		47.041	CMMI-1537641	92,245	—
Collaborative Research: Quantitative Analysis of Liposome Deformation at Nanoscale Using Resistive Pulse Sensing in Solid State Nanopores		47.041	CMMI-1740011	102,841	—
Collaborative Research: RAPID: Spatial variability of small-strain stiffness, Go, and effects on ground movements related to geotechnica construction		47.041	CMMI-1841584	93,200	—
Conference: Concepts for Advancing Sustainable Urban Systems (SUS) Research Networks: SUSPIRE: Sustainable Urban Systems: Predictive Interconnected, Resilient and Evolving		47.041	CBET-1929942	45,348	—
Control of Hybrid Locomotion with Impacts		47.041	CMMI-1436297	601	—
Convergence: RAISE: Auto-regulatory Scaffolds for Directed Evolution of Non-living Functional Materials		47.041	CMMI-1848613	175,533	27,548
Convergence: RAISE: Systems Approaches for Vulnerability Evaluation and Urban Resilience (SAVEUR)		47.041	CBET-1848683	123,768	44,795
CPS: Medium: Information based Control of Cyber-Physical Systems operating in uncertain environments		47.041	ECCS-1837515	121,070	—
CPS: Synergy: An Integrated Simulation and Process Control Platform for Distributed Manufacturing Process Chains		47.041	CMMI-1646592-002	219,108	—
Curved Waterjet-Guided Laser Micro-Manufacturing		47.041	CMMI-1234491	(345)	—
Data-driven multiscale damage and failure prediction		47.041	CMMI-1762035-001	119,974	—
Decision-Flow Queueing Networks for Analysis of Knowledge-Based Service Operations Systems		47.041	CMMI-1826353	92,572	—
Design and exploration of high-temperature steels for electric power generation applications		47.041	CMMI-1462850	69,775	—
Diffraction-grating coupled surface emitting Terahertz quantum cascade laser source for high power, room temperature continuous wave operator		47.041	ECCS-1607838	155,352	—
DMREF: Collaborative Research: A Data-Centric Approach for Accelerating the Design of Future Nanostructured Polymers and Composite Systems	66	47.041	333-2389/1818574	33,309	—
EAGER ISN: Unraveling illicit supply chains with a citizen science approach	249	47.041	203496NU//CMMI-1842369	90,891	—
EAGER: Cloud-Computing and High-Speed Internet Enabled Manufacturing		47.041	CMMI-1148709	(3,055)	—
EAGER: MOCVD Growth of beta-(Al,In,Ga)2O3 for Transistor Applications		47.041	ECCS-1748339	61,363	—
EFRI 2-DARE: Scalable Growth and Fabrication of Anti-Ambipolar Heterojunction Devices		47.041	EFRI-1433510	282,782	82,089
EFRI C3 SoRo: An integrated approach towards computational design, fabrication and understanding of bio-hybrid soft architectures capable o adaptive behavior	230	47.041	093088-175159//EFMA-1830881	68,299	—
EFRI C3 SoRo: Strong Soft Robots—Multiscale Burrowing & Inverse Design	243	47.041	A007037602 // EFMA-1830950	14,384	—

NORTHWESTERN UNIVERSITY
 Supplementary Schedule of Expenditures of Federal Awards
 Year ended August 31, 2019

Cluster title/Federal grantor/Subagency/Project title	Pass-through ID number	CFDA	Sponsor award number	Federal expenditures	Passed-through to subrecipient:
National Science Foundation (continued):					
EFRI CEE: Epigenomic Regulation Over Multiple Length Scales: Understanding Chromatin Modifications Through Label Free Imaging and Multi-Scale Modeling	219	47.041	FP068540-01-PR// EFMA-1830969	\$ 202,006	—
EFRI CEE: Macrogenomic engineering via modulation of chromatin nanoenvironment		47.041	EFMA-1830961	294,130	8,565
EFRI-BioFlex: Miniature, Low-cost Fiber-optics Technology for Measurement of Tissue Structure at Sub-diffractive Length Scales: A Platform for Cancer Screening		47.041	EFRI/EFMA-1240416-004	1,904	—
EFRI-CEE: Epigenetic Cell Reprogramming In Situ: A Novel Tool for Regenerative Engineering		47.041	EFMA-1911283-001	493,909	—
Electric Field Guided Micro Additive Manufacturing Process		47.041	CMMI-1463411	75,950	—
Electromechanical Properties and Deformation of Biomembranes		47.041	CMMI-1748049	102,454	—
Engineering a recombinant methane monooxygenase to convert methane to methanol for the production of fuels and chemicals	163	47.041	PNU-001/1534743	3,935	—
Engineering a secretion-based, high-titer protein production process in bacteria		47.041	CBET-1706125	106,856	—
Engineering Research Center for Innovative and Strategic Transformation of Alkane Resources - CISTAR	164	47.041	10001437-044 Amd 1//1647722-EEC	536,449	—
Equitable and Efficient Scarce Resource Allocation using Stochastic Fractional Optimization		47.041	CMMI-1763035	55,202	—
Exploiting Network Structure in Routing Problems: Applications to School Bus Routing		47.041	CMMI-1727744-002	188,776	—
Exploring local confinement of ultrafast light to enable nondestructive acoustic metrology at the nanoscale		47.041	ECCS-1611356	84,329	—
Fractal Mechanics of Stretchable Piezoelectrics for Mechanical Energy Harvesting		47.041	CMMI-1400169	55	—
Friction in Full View		47.041	CMMI-1400618	59,281	—
From the Nuclear Pore Complex to Smart Artificial Nanochannels		47.041	CBET-1833214	27,532	—
Functionalities Emerging in Adaptive Brain Networks through Selective Synchronization of Neurons by Targeted Feedback		47.041	CMMI-1435358	101,607	—
GOALI/Collaborative Research: Reliable Prediction of Endurance Life of Ultra-High-Strength Aerospace Rolling-Element Bearings		47.041	CMMI-1434834	27,196	—
GOALI: Advanced biomanufacturing with inducible feedback promoters		47.041	CBET-1803747	109,969	51,386
GOALI: Charge Interactions in Transport of Mixed Solutes in Nanofiltration Membranes		47.041	CBET-1840816	2,175	—
GOALI: Computer Simulation Analytics		47.041	CMMI-1537060	31,628	—
GOALI: Models and Methods for Marathon Course Design using Multi-Objective Approaches		47.041	CMMI-1405231	2,776	—
GOALI: Strength Loss in Clays During Earthquake and Other Cyclic Loading		47.041	CMMI-1434876	1,829	—
Green Simulation: A Methodology for Reusing the Output of Past Computer Simulation Experiments		47.041	CMMI-1634982	115,683	—
I-Corps: Clinical Workforce Schedule Optimization Technology		47.041	IIP-1764312	12,151	—
Investigating the impact of tumor heterogeneity on sustained low dosage immunotherapy via a peritumoral immunotheranostic hydrogel		47.041	CBET-1806007	124,935	—
iSee: A Smart Device based Depression Behavior Monitoring and Analytics Service for College Students	139	47.041	RC106479NU//1632051	5,586	—
Magnetic microrollers as a platform for active transport	147	47.041	IB00177512 - F0276-01 // CBET-1706562	58,895	—
Magnetically Controlled- Laser Induced Plasma Micro-Machining (MC-LIPMM)		47.041	CMMI-1563244	135,914	—
Market Expectations, Long Term Risk, and Stochastic Spectral Theory		47.041	CMMI-1536503	71,388	—
Mixed-Integer Programming Approaches for Risk-Averse Multicriteria Optimization		47.041	CMMI-1907463	64,215	—
Monolithic Nanofabrication: A Bottom-up Approach for Manufacturing Nanotextured Surfaces		47.041	CMMI-1462633 001	23,778	—
Multidimensional Network Analysis for Analyzing and Predicting Complex Customer-Product Relations in Engineering Design		47.041	CMMI-1436658	1,251	—
NASCRE 4 - Making Boundaries Malleable: Advancing Reaction Engineering through New Materials, Unique Chemistries and Advanced Computation		47.041	CBET-1902139	30,000	—
NCS-FO: How Ecology Induces Cognition: Paleontology, Machine Learning, and Neuroscience		47.041	ECCS-1835389	245,528	—
Neuroprotective Engineering Based on Innate Responses to Stroke		47.041	CBET-1403036	81,042	—
NNCI: Soft and Hybrid Nanotechnology Experimental (SHyNE) Resource		47.041	ECCS-1542205	980,250	255,980
NRI: Task-Based Assistance for Software-Enabled Biomedical Devices		47.041	CBET-1637764	180,486	—
On-demand Generation of Diamond-like-carbon Layers for Efficient Lubrication of Mechanical Systems		47.041	CMMI-1662606	26,639	—
PFI: AIR-TT SAFE (Situational Awareness for Events): A Data Visualization System		47.041	IIP-1640736	34,115	—
PFI: BIC - Smart CROwdsourced Urban Delivery (CROUD) System		47.041	IIP-1534138	218,372	58,462
PFI: BIC: A Smart, "Always-on" Health Monitoring System		47.041	IIP-1534120-002	50,315	50,315
PFI-RP: Bioresorbable Integrated Photonic Sensing Platform for Brain Implant	254	47.041	261006670061// IIP-1827693	54,471	—
Planning Grant: Engineering Research Center for Accelerated Catalytic Design and Characterization (ACDC)		47.041	EEC-1840619	45,731	—
Planning Grant: Engineering Research Center for Democratizing Manufacturing Accessibility for Designers (DEMAND)		47.041	EEC-1840621	19,376	—
Process Modeling and Enhancements of Laser-Induced Plasma Micro-Machining (LIP-MM)		47.041	CMMI-1335014	(527)	—
Processing of Advanced Foam Scaffolds for Iron-Air Battery Applications		47.041	CMMI-1562941 001	132,913	—
RAISE-EQUIP: Single-Chip, Wall-Plug Photon Pair Source and CMOS Quantum Systems on Chip	30	47.041	4500002864/ECCS-1842692	63,492	—
RAPID: Addressing Geographic Disparities in the National Organ Transplant Network		47.041	CMMI-1743896	40,555	—
REU SITE: RESEARCH EXPERIENCE FOR UNDERGRADUATES IN NANOSCALE SCIENCE AND ENGINEERING PROPOSAL		47.041	EEC-1757818	65,726	—
Robust Multi-Criteria Optimization With Application to Radiation Therapy		47.041	CMMI-1463489	48,459	—
RoL: EAGER: DESYN-C3 Moving information across synthetic membranes via engineered sensors		47.041	CBET-1844219	15,548	—
RoL: RAISE: DESYN-C3: A platform for Modular Pseudo-Organelles for Compartmentalization and Control of Pseudo-Cell Processes		47.041	CBET-1844336	41,999	—
SampleStream: A Sample Preparation Platform for Biologics	111	47.041	Agmt 8/15/2017 // IIP-1721594	8,457	—
Scanning Ultrasound Probe for Semiconductor Sub-Surface Metrology		47.041	ECCS-1842662	109,816	—
SNM: Collaborative Research: 3D Nanomanufacturing by Imprint and Strain Engineering (3D NISE)	118	47.041	2003142248 Amd 3 // 1635443	152,351	—
SNM: Customized Inkjet Printing of Graphene-Based Real-time Water Sensors	267	47.041	1727846//183405339/AAC5754	120,067	—
SNM: Robust Scalable Nanomanufacturing of Photonic Structures		47.041	EEC-1530734	312,111	104,540
Spectroscopic photon localization microscopy for super-resolution molecular imaging		47.041	CBET-1706642 001	129,802	—

NORTHWESTERN UNIVERSITY
 Supplementary Schedule of Expenditures of Federal Awards
 Year ended August 31, 2019

Cluster title/Federal grantor/Subagency/Project title	Pass-through ID number	CFDA	Sponsor award number	Federal expenditures	Passed-through to subrecipient
National Science Foundation (continued):					
Stability and Optimality Properties of Sequential Action Control for Nonlinear and Hybrid Systems		47.041	CMMI-1662233	\$ 98,978	—
Strong and Multifunctional Geopolymer Composites: A Multi-Scale Study		47.041	CMMI-1829101	101,078	6,028
SusChEM: Integrated Materials and Process Systems Development for Sustainable Carbon Capture		47.041	CBET-1604890	124,143	—
SusChEM: Using theory-driven design to tailor novel nanocomposite oxides for solar fuel production		47.041	CBET-1438721	(2,933)	—
Unlocking Efficiencies in Earthmoving for Future Infrastructure: Modeling Plowing and Cutting Processes in Soils		47.041	CMMI-1742849	90,377	—
UNS: Controlling mixing and segregation of granular media using unsteady flows		47.041	CBET-1511450	80,218	—
				9,555,331	689,708
1st COFI Workshop on Precision Electroweak		47.049	PHY-1928439	25,644	—
2nd COFI Workshop on Gravitational Waves		47.049	PHY-1834816	9,987	—
3he in Confinement		47.049	DMR-1602542	130,581	—
A Sheaf-Theoretic Approach to M5-Brane Geometry		47.049	DMS-1708503	64,925	—
Accretion and Star Formation Induced by the Galactic Center Supermassive Black Hole Sgr A'		47.049	AST-1517246 002	83,670	—
ACME: Advanced Cold Molecule Electron Electric Dipole Moment Search	281	47.049	GR105078(CON-80001598)/PHY-1404146	68,488	—
Advanced Algorithms for Colloids with Induced Many-Body Interactions		47.049	DMR-1610796-001	93,503	—
Algorithms for Nonlinear Nonconvex Optimization under Uncertainty		47.049	DMS-1522747	79,392	—
Allosterically Regulated Supramolecular Capsules and Receptors Assembled via the WLA		47.049	CHE-1709888	168,112	—
Analysis on Manifolds		47.049	DMS 1502632 005	476,304	—
Antihydrogen and Antiproton Studies		47.049	PHY-1903757	594,497	—
APS Conference for Undergraduate Women in Physics II	14	47.049	CWC-031/PHY-1622510	24,509	—
Atomistic Studies of Concentrated Multicomponent Nickel-Based Alloys Utilizing Atom-Probe Tomography and Vacancy-Mediated Lattice Kinetic Monte Carlo Simulations		47.049	DMR-1610367 002	155,409	—
Bioengineering Single Crystal Growth		47.049	DMR-1508399-002	139,131	—
Black Holes in Dense Star Clusters		47.049	AST-1716762	117,531	—
CAREER: An Integrated Inferential Framework for Big Data Research and Education		47.049	DMS-1841569/002	50,277	—
CAREER: Complexity of Disordered Systems		47.049	DMS-1653552	93,202	—
CAREER: Ligand Engineering of Structure and Electronic Function in Complex Metal Oxyfluorides		47.049	DMR-1454688-005	93,489	—
CAREER: Photocrosslinked Dynamic Covalent Crosslinkers for Light-Responsive Polymer Networks		47.049	CHE-1847948	25,878	—
CAREER: Planet Formations in the Age of Kepler		47.049	AST-1352369	101,957	—
CAREER: Synthesis and Studies of One-Dimensional Magnets Supported by Bulky, Redox-Active Benzoquinonoid Bridging Ligand:		47.049	DMR-1351959 004	87,053	—
CAREER: Synthesis of molecular electronic-spin based qubits enabled by new empirically derived design principles		47.049	CHE-1455017	78,029	—
CAREER: The Physics of Stellar Feedback and Star Formation Regulation in Galaxies		47.049	AST-1652522	111,222	—
CAREER: Theories for Magnetic Properties of Lanthanide and Actinide Complexes		47.049	CHE-1351598	43,933	—
CAREER: Understanding the Role of Structure on Ionic/Electronic Properties in Polymeric Mixed Conductors		47.049	DMR-1751308-001	84,791	—
CCI Phase II: Center for Sustainable Nanotechnology	266	47.049	630K475 Amd 3 // CHE-1503408	71,470	—
CDS&E: Organization and Dynamics of Charged Molecules in Heterogeneous Media		47.049	DMR-1611076 No. 001	79,165	—
CEMRI: Multifunctional Nanoscale Material Structures		47.049	DMR-1121262 Amd 009	(168,300)	—
Center for Sustainable Polymers	243	47.049	A004088505 Amd. 3 // CHE-1413862	389,463	—
Center for Sustainable Polymers	243	47.049	A008060101/CHE-1901635	19,036	—
Center for the Chemistry of Molecularly Optimized Networks	66	47.049	333-2440/ CHE-1832256	93,253	—
Collaborative Research: Algorithms for Large-Scale Stochastic and Nonlinear Optimization		47.049	DMS-1620022	50,695	—
Collaborative Research: Axion Resonant InterAction Detection Experiment (ARIADNE)		47.049	PHY-1826505	6,712	—
Collaborative Research: Axion Resonant InterAction Detection Experiment (ARIADNE) - a continuation proposa		47.049	PHY-1806671	107,209	—
Collaborative Research: Designer Glass Ceramics		47.049	DMR-1600837	70,287	—
Collaborative Research: Enhancing Access to Radio Spectrum for Real-time Monitoring and Control		47.049	AST-1547328	85,328	—
Collaborative Research: Factorization Homology, Deformation Theory, and Duality		47.049	DMS-1812057	113,838	—
Collaborative Research: Fluctuating Hydrodynamics of Suspensions of Rigid Bodies		47.049	DMS-1418672	(438)	—
Collaborative Research: High-Throughput Quantification of Solid State Electrochemistry for Next Generation Energy Technologies		47.049	DMR-1505103 004	132,321	—
Collaborative Research: Integrated Computational and Experimental Studies of Solid Oxide Fuel Cell Electrode Structural Evolution and Electrochemical Characteristics		47.049	DMR-1506925-002	123,434	—
Collaborative Research: Misaligned Short GRBs from Structured Jets in the Dawn of Gravitational Wave Astronomy		47.049	AST-1815304	45,683	—
Collaborative Research: Predictive theory, synthesis and characterization of a new type of transparent conductor without doping		47.049	DMR-1806912	104,082	—
Collaborative Research: The SuperCDMS SNOLAB Experiment		47.049	PHY-1809730-001	268,691	—
Collaborative Research: Tolerance-Enforced Simulation of Stochastic Processes		47.049	DMS-1720433	59,851	—
Collaborative Research: WoU-MMA: Multi-scale and multi-messenger modeling of jets in active galactic nuclei		47.049	AST-1911080	142	—
Collaborative Research:CDS&E: Mining Physically Predictive Cosmological Simulations		47.049	AST-1715216	59,105	—
Collaborative Research:Ultrafast Excited State Electron and Nuclear Coherences in Transition Metal Dimer Complexes and Their Roles in Photochemistry		47.049	CHE-1665021	110,935	—
Collective dynamics of particles at fluid interfaces		47.049	DMS-1716114	143,325	—
Complex algebraic dynamics and geometry		47.049	DMS-1600718-001	121,035	—
Conference: Dynamics Days 2019		47.049	DMS-1852561	18,000	—
Correlative Tools for in Situ Analysis of Single Nanoparticles and their Ligands		47.049	CHE-1808502	132,065	—

NORTHWESTERN UNIVERSITY
 Supplementary Schedule of Expenditures of Federal Awards
 Year ended August 31, 2019

Cluster title/Federal grantor/Subagency/Project title	Pass-through ID number	CFDA	Sponsor award number	Federal expenditures	Passed-through to subrecipient
National Science Foundation (continued):					
Deposition, Equilibrium Structure and Mechanical Response of Polyelectrolyte Complexes		47.049	DMR-1710491	\$ 174,309	—
DMREF/Collaborative Research: Computationally Driven Targeting of Advanced Thermoelectric Materials		47.049	DMR-1333335 002	33,935	—
DMREF: Collaborative Research: Accelerating Thermoelectric Materials Discovery via Dopability Predictions		47.049	DMR-1729487-001	77,409	—
DMREF: Collaborative Research: Structure Genome of Metal-Insulator Transitions		47.049	DMR-1729303	186,298	—
DMREF: Collaborative Research: Synthesis, Characterization, and Modeling of Complex Amorphous Semiconductors for Future Device Applications		47.049	DMR-1729016	170,398	—
DMREF: Collaborative Research: Tackling disorder and ensemble broadening in materials made of semiconductor nanostructures		47.049	DMR-1629383	7,325	—
Donor-Acceptor Energy Transfer in the Presence of Photonic and Plasmonic Structures		47.049	CHE-1760537	113,639	—
Dynamical aspects of Ramsey theory		47.049	DMS-1700147	35,851	—
Dynamics with a Combinatorial Bent		47.049	DMS-1800544-001	69,874	—
EAGER: Bulk Nanostructured Metals from Twinned Nanowires		47.049	DMR-1747776	89,164	—
EAGER: Enabling Quantum Leap: Driven Non-Equilibrium Room Temperature Quantum States		47.049	DMR-1838507	69,449	—
Elliptic and parabolic PDEs on manifolds		47.049	DMS-1709544	97,560	—
Emphasis Year in Noncommutative Geometry		47.049	DMS-1839515	30,062	—
Equidistribution of Torus Orbits		47.049	DMS-1846333	47,955	—
Geometric Analysis on complex manifolds		47.049	DMS-1810278-002	82,855	—
Global Harmonic Analysis		47.049	DMS-1506591-001	39,950	—
Global Harmonic Analysis		47.049	DMS-1810747	74,976	—
GOALI : Collaborative Research: An Experimental and Theoretical Study of the Microstructural and Electrochemical Stability of Solid Oxide Cells		47.049	DMR-1912530	319	—
Gravitational-Wave Inference from Binary Compact Objects		47.049	PHY-1607709 0002	173,086	—
High-Pressure Synthesis of Missing Pnictide Superconductors		47.049	DMR-1801632-001	125,862	—
Hodge theory and birational geometry		47.049	DMS-1700819 002	94,024	—
Homotopy theory of foliations and diffeomorphism groups		47.049	DMS-1810644	15,292	—
Interfacial ordering in aqueous solutions: X-ray scattering studies		47.049	DMR-1612876	135,000	—
Investigation of High Strain-Rate Deformation and Failure of FCC and BCC Nanostructures		47.049	DMR-1408901-003	43,196	—
IRES: Nanomaterials undergraduate Research in Germany (NanoRING)		47.049	IIA-1460031	31,070	—
Joint US-Africa Materials Advanced Studies Institute		47.049	DMR-1539724	13,090	—
JUAMI (Joint Undertaking for Africa Materials Institute)		47.049	DMR-1756245	192,726	—
Kahler manifolds with curvature lower bound		47.049	DMS-1709894	48,481	—
Lepton Magnetic Moments and Fine Structure Constant		47.049	PHY-1903756	298,142	—
Linear Partial Differential Equations on Singular Spaces		47.049	DMS-1600023	11,041	—
Materials Chemistry of Superprotonic Solid Acids		47.049	DMR-1807234	178,027	—
Materials Research Science and Engineering Centers for Northwestern University	219	47.049	FP037621-02 // DMR-1420709	18,568	—
Measuring gravity at the micron scale with laser-cooled trapped microspheres: a continuator		47.049	PHY-1806686 001	219,437	—
Midwest Dynamical Systems Seminar		47.049	DMS-1600654	25,551	—
Midwest Probability Colloquium 2017-2019		47.049	DMS-1744209-001	23,596	—
Midwest Topology Seminar		47.049	DMS-1747457	8,068	—
Moduli of Galois representations and applications		47.049	DMS-1802037	60,512	—
Molecular Ion Entanglement Detection by Single-Molecule Fluorescence		47.049	PHY-1404455-002	144	—
Molecular Plasmonics: Single Molecule and Ultrafast Surface-Enhanced Raman Spectroscopy		47.049	CHE-1506683	242,548	—
MRI: Acquisition of a High-Performance Computing Cluster to Unveil the Sources of Gravitational Waves		47.049	PHY-1726951	349,924	—
MRSEC: Center for Multifunctional Materials		47.049	DMR-1720139	3,031,983	93,365
MRSEC: Center for Nanoscale Science	161	47.049	5204-NU-NSF-0620-1// DMR-1420620	58,447	—
Nanoscale Curvature Effects on the Properties of Anisotropic Nanomaterials		47.049	CHE-1507790	49,598	—
New Lewis Bases for Chemical Catalysis		47.049	CHE-1665141	80,380	—
New Stereoselective Fragment Coupling Reactions for Organic Synthesis		47.049	CHE-1361173	34	—
New Stereoselective Fragment Coupling Reactions for Organic Synthesis		47.049	DMR-1508730-003	58,098	—
Nonequilibrium States of Topological Quantum Fluids and Unconventional Superconductors		47.049	CHE-1464916	36,196	—
Nonlinear Optical Surface Studies of Iron and its Oxides		47.049	DMS-1764421	913,942	—
Northwestern University Quantitative Biology Center (NUQuB)		47.049	DMR-1822422	182,953	45,484
Nucleic Acid Nanostructures and their Cellular Transport Mechanisms		47.049	DMR-1808258	152,172	—
OP: Coherence and Energy Transfer Processes in Lattice Plasmon Lasers		47.049	DMR-1905986	6,674	—
Optical Spin Orientation and Transport in Layered Mono- and Di-chalcogenide Semiconductors		47.049	CHE-1464488	45,817	—
Organo-f-Element Chemistry: Integrated Synthetic, Mechanistic, and Catalytic and Thermochemical Studies		47.049	DMR-1507101 001	119,907	—
Oxide Surfaces, From Bulk to Nanoparticles		47.049	CHE-1807278	34,853	—
Plasmon-Driven Chemistry as Revealed by Ultrafast SERS, Single Molecule SERS, and Electrochemical TERS		47.049	3003700315 // DMR-1509033 Amd 2	21,346	—
Predictive Computational Modeling of Two-Dimensional Materials: Defects and Morphologies	242	47.049	DMS-1612437	48,191	—
Properties and Applications of the Microlocal Category		47.049	CHE-1836392	31,862	—
QLC: EAGER: Collaborative Research: Developing Experiment and Theory for Entangled Photon Spectroscopy		47.049	DMR-1710104	61,698	—
Quantum Interference and Coherence Effects on Charge Transport in Organic Semiconductors		47.049	AST-1757792	107,108	—
REU Site: Preparing a Diverse Workforce through Interdisciplinary Astrophysics Research		47.049	DMS-1547394	419,317	—
RTG: Interdisciplinary Training in Quantitative Biological Modeling		47.049	DMR-1508731/003	201,482	—
Shape and Dimensional Precision in Polymeric Nanostructures		47.049	DMS-1809011	78,776	—
Singularities and Smoothness in Geometric Partial Differential Equations		47.049			—

NORTHWESTERN UNIVERSITY
 Supplementary Schedule of Expenditures of Federal Awards
 Year ended August 31, 2019

Cluster title/Federal grantor/Subagency/Project title	Pass-through ID number	CFDA	Sponsor award number	Federal expenditures	Passed-through to subrecipient
National Science Foundation (continued):					
Size Effect on the Evolution of Kirkendall Pores in Ti-Coated Ni Wires		47.049	DMR-1611308	\$ 117,520	32,946
Solid State Chemistry of Complex Chalcogenides		47.049	DMR-1708254	269,928	—
Solid-State Oxides and Oxide-Fluorides		47.049	DMR-1608218	123,975	—
Solid-State Oxides and Oxide-Fluorides		47.049	DMR-1904701	40,386	—
Solution-Processed Monodisperse Nanoelectronic Heterostructures		47.049	DMR-1505849	54,846	—
Spectrum Sharing in the Shadow of Uncertainty: Risk, Incentives and Investment		47.049	AST-1343381	(3)	—
Spectrum Sharing in the Shadow of Uncertainty: Risk, Incentives and Investment		47.049	AST-1343381	2,956	2,956
Spin Dynamics of Photogenerated Multi-Spin Systems		47.049	CHE-1565925	143,286	—
Statics and Dynamics of Spatially and Dimensionally Constrained Oxides		47.049	DMR-1507810-001	134,651	—
Structures and excited state dynamics of self-assembled photonic structures.		47.049	CHE-1465045	(218)	—
Studying the Processes of Assembly and Stimuli-Responsive Morphological Transformations in Solvated Macromolecular Nano-Assemblies		47.049	CHE-1905270	226	—
Supernova Progenitors, Stellar Remnants, and their Binary Companions		47.049	AST-1517753	145,728	—
Surfaces of Secondary Organic Aerosol Particles		47.049	CHE-1607640	267,781	161,625
SusChEM: Visible Light-Driven Reduction of Carbon Dioxide using Heavy Metal-Free Colloidal Quantum Dots as Sensitizers		47.049	CHE-1664184	143,938	—
Symmetry Breaking in Non-Hermitian Plasmonic Lattices		47.049	DMR-1904385	4,078	—
Synthetic, Mechanistic, and Catalytic Studies of Electrophilic d- and f-Element Complexes		47.049	CHE-1856619	3,920	—
Telecom-Band Rotational Cooling of a Heavy Molecular Ion		47.049	PHY - 1806861	240,783	—
The 41st Stochastic Processes and Applications (SPA 2019)		47.049	DMS-1906251	20,945	—
The Center for Chemistry at the Space-Time Limit (CaSTL)	212	47.049	2014-3122 Mod 7//CHE-1414466	354,808	—
The Science and Fundamental Understanding of the Radio Frequency Surface Resistance of Nitrogen Doped SRF cavities		47.049	PHY-1734332	158,225	—
Total Tomography of III-V Non-Planar Heterostructures		47.049	DMR-1611341	103,952	—
Toward physically-predictive modeling of massive black hole growth and feedback in galaxy formation		47.049	AST-1517491 002	73,302	—
Transient Physicochemical Properties of Nanomaterials		47.049	CHE-1808590	3,698	—
U.S. CMS Operations at the LHC (High Luminosity (HL) LHC CMS Detector Upgrade Project Trigger & DAQ; TT)	58	47.049	78877-11096-SUB0000175-01//PHY-1624356	64,588	—
Unconventional Heteroanion Ceramics: 2D Layered Seleno- and Thio-Phosphates		47.049	DMR-1929356	7,018	—
Unfolding the Dynamic and Colorful Lives of Compact Object Mergers		47.049	AST-1814782	46,697	—
Unveiling the Obscured Formation of Stars and Galaxies: Large-Scale Legacy Surveys with a New Three Color High Resolution Imaging Polarimeter on a 50-m Telescope	236	47.049	17-009589 D Amd. 1 // AST-1636621	118,128	—
Voltage-dependent interfacial structure and properties of room temperature ionic liquids: operando X-ray studies		47.049	CHE-1665255	39,977	—
Workshops: Homotopy Harnessing Higher Structures		47.049	DMS -1833295	21,576	—
				<u>17,392,845</u>	<u>336,376</u>
Australia cretaceous climate and tectonics: oceanic anoxic events and cooling within the l. cretaceous greenhouse at SHL	54	47.050	71(GG009393) // OCE-1450528-2	11,426	—
CAREER: South Greenland's Holocene Climate History Reconstructed Using Three Paleolimnological Approaches		47.050	PLR-1454734	191,329	—
CO2 evasion from the Greenland ice sheet		47.050	PLR-1304686/002	348	—
Collaborative Research: Assessing the Impact of Small, Canadian Arctic River Flows (SCARFs) to the Freshwater Budget of the Canadian Archipelago		47.050	PLR-1304675	(2,221)	—
Collaborative Research: NSF/EAR-BSF: Coupled Sand and Clay Motion, Bed Morphodynamics, and Porewater Exchange		47.050	EAR-1734300	35,020	—
Collaborative Research: Evolution of the Midcontinent Rift as a Rift/Lip Hybrid		47.050	EAR-1550108	29,225	—
Critical Zone Observatory Network for Intensively Managed Landscapes	230	47.050	072212-14695	96,816	—
EAGER: FEW: Life cycle comparison of water, energy, nutrient, and carbon requirements of urban and conventional food production strategies		47.050	EAR-1541891	(62)	—
ELT Collaborative Research: Perturbation of the Marine Food Web and Extinction During the Oceanic Anoxic Event at the Cenomanian/Turonian Boundary		47.050	EAR-1338312-005	(604)	—
Hazards SEES Type 2: From Sensors to Tweeters: A Sustainable Sociotechnical Approach for Detecting, Mitigating, and Building Resilience to Hazards	251	47.050	0036115 (011529-3) // OCE-1331463	1,981	—
Hydration State of the Transition Zone and Lowermost Mantle		47.050	EAR-1452344-002	4,924	—
INSPIRE Track 1: Earthcasting fluvial systems: Physical, ecological, and biogeochemical dynamics		47.050	EAR-1344280	(13,547)	—
INSPIRE Track 1: Earthcasting fluvial systems: Physical, ecological, and biogeochemical dynamics		47.050	EAR-1344280	11,973	11,973
Superdeep Diamonds from the Transition Zone and Lower Mantle		47.050	EAR-1853521	50,638	—
The Ca and Sr (radiogenic and stable) isotope geochemistry of weathering in Iceland		47.050	EAR-1613359	86,209	—
				<u>503,455</u>	<u>11,973</u>
A Low-Cost Integrated Agent-based Modeling and Physical Computing Platform		47.070	IIS-1438813	3,250	—
AF: Small: Collaborative Research: Boolean function analysis meets stochastic design		47.070	CCF-1814706	12,495	—
AF: Small: Non-revelation Mechanism Design		47.070	CCF-1618502	97,324	—
AIf: Collaborative Research: Algorithms for Probabilistic Inference in the Real World		47.070	CCF-1637585	70,243	—
AIf: Mechanism Design and Machine Learning for Peer Grading		47.070	CCF-1733660	167,945	—
BD Spokes: SPOKE: MIDWEST: Collaborative: Advanced Computational Neuroscience Network (ACNN)	107	47.070	BL-4831218-NWUC//IIS-1636893	2,406	—
BD Spokes: SPOKE: MIDWEST: Collaborative: Integrative Materials Design (IMaD): Leverage, Innovate, & Disseminate		47.070	IIS-1636909	13,092	—
BIGDATA: Collaborative Research: F: Stochastic Approximation for Subspace and Multiview Representation Learning		47.070	IIS -1840866	216,378	—

NORTHWESTERN UNIVERSITY
 Supplementary Schedule of Expenditures of Federal Awards
 Year ended August 31, 2019

Cluster title/Federal grantor/Subagency/Project title	Pass-through ID number	CFDA	Sponsor award number	Federal expenditures	Passed-through to subrecipient
National Science Foundation (continued):					
BIGDATA: EAGER: Catalyzing Research in Multimodal Learning Analytics		47.070	IIS-1832234	\$ 96,239	8,103
BIGDATA: IA: Collaborative Research: Asynchronous Distributed Machine Learning Framework for Multi-Site Collaborative Big Brain Data Mining		47.070	IIS-1837999	17,248	—
CAP: Collaborative Research: Building a Network to Advance Collaborative Research on Young Children's Learning through Public Media Asset		47.070	IIS-1239599	9,104	—
CAREER: Advancing Online Social Support for Older Adults with Disabilities		47.070	IIS-1551574-003	118,678	—
CAREER: Beyond Worst-Case Analysis: New Approaches in Approximation Algorithms and Machine Learning		47.070	CCF-1652491 001	16,657	—
CAREER: Coherent Computational Imaging: Micro Measurements in a Macro World		47.070	IIS-1453192	33,714	—
CAREER: Computational Journalism: Integrating Algorithms and People in the Production of News Information		47.070	IIS-1845460	53,169	—
CAREER: Design and Synthesis of Energy-efficient Time-domain Computing for Intelligent Edge Processing		47.070	CCF-1846424	5,509	—
CAREER: Efficient Query Processing for Private Data Federations		47.070	CNS-1846447	26,665	—
CAREER: Energy-Efficient and Energy-Proportional Silicon-Photonic Manycore Architectures		47.070	CCF-1453853-004	77,934	—
CAREER: Enhancing Critical Reflection on Data by Integrating Users' Expectations in Visualization Interactor		47.070	IIS-1930642	23,956	—
CAREER: Robot Learning from Motor-Impaired Instructors and Task Partners	166	47.070	81454 Amd 3 //IIS-1552706	80,466	—
CAREER: SOStiCe: Software Synthesis with Timing Contracts for Cyber-Physical Systems		47.070	CCF-1634701 002	81,348	—
CAREER: Understanding and addressing geographic inequalities in location-aware technologies		47.070	IIS-1707296-003	54,590	—
CAREER: Web Information Extraction: Scaling and Integration		47.070	IIS-1951029 005	55,421	—
CC'DNI CI Engineer: Integrating Campus Cyberinfrastructure and Research Computing at Northwestern University		47.070	ACI-1541457	285,839	—
CHS: Large: Collaborative Research: TextureShop: Tools for the Composition and Display of Virtual Texture		47.070	IIS-1518602 003	233,640	—
CHS: Medium: Collaborative Research: Understanding online creative collaboration over multidimensional networks		47.070	IIS-1514427	81,835	—
CHS: Small: Assessing the Role of Platform Algorithms in Shaping News Attention		47.070	IIS-1717330	125,458	—
CHS: Small: Collaborative Research: Pathways to Community Success: Advancing a Comparative Science of Online Collaborative Organization		47.070	IIS-1617468	53,127	—
CHS: Small: Collaborative Research: RUI: Human-centered Semantic Relatedness		47.070	IIS-1707319	35,456	—
CHS: Small: Collaborative Research: Structured Data Peer Production: Addressing Challenges and Leveraging Opportunities		47.070	IIS-1815507/001	71,511	—
CHS: Small: Collaborative Research: The Presentation of Self in Networked Life		47.070	IIS-1617387 001	98,855	—
CHS: Small: Coordination of Opportunistic Actions to Produce Globally Effective Behaviors for Physical Crowdsourcing		47.070	IIS-1618096	91,009	—
CHS:Small: Robust Interactive Audio Source Separation		47.070	IIS-1420971	14,385	—
CIF21 DIBBS: PD: Ontology-enabled Polymer Nanocomposite Open Community Data Resource	169	47.070	A12761 Amd 01 // ACI-1640840	99,986	—
Collaborative Research: Chameleon: A Large-Scale, Reconfigurable Experimental Environment for Cloud Research		47.070	CNS-1419138	11,437	—
Collaborative Research: Chameleon: A Large-Scale, Reconfigurable Experimental Environment for Cloud Research		47.070	CNS-1743324-003	91,352	—
Collaborative Research: NCS-FO: Discovering dynamics in massive-scale neural datasets using machine learning		47.070	IIS-1835345	58,743	—
Collaborative Research: SI2-SFI: Scalable Infrastructure for Enabling Multiscale and Multiphysics Applications in Fluid Dynamics, Solid Mechanics, and Fluid-Structure Interaction		47.070	ACI-1450374	136,276	—
Collaborative Research: SI2-SFI: Software Framework for Electronic Structure of Molecules and Solids		47.070	ACI-1550481	95,944	—
Collaborative Research: TRIPODS Institute for Optimization and Learning		47.070	CCF-1740735	6,647	—
Computer Science for All: Researcher Practitioner Partnerships Workshops (CS for All: RPP), Chicago and Los Angeles		47.070	CNS-1821362	853	—
CPS: Breakthrough: Collaborative Research: A Framework for Extensibility-Driven Design of Cyber-Physical Systems		47.070	CCF-1834324	107,182	—
CPS: Synergy: Collaborative Research: Learning Control Sharing Strategies for Assistive Cyber-Physical Systems	166	47.070	CC# 81394 CL 4811 // 1544741	42,415	—
CPS: Synergy: Collaborative Research: Mutually Stabilized Correction in Physical Demonstrator		47.070	CNS-1329891	(277)	—
CPS: Synergy: Securing the Timing of Cyber-Physical Systems		47.070	CNS-1839511	66,291	9,718
CRI: CI-SUSTAIN: Rocket on Alternative Platforms	149	47.070	502648-78050-01//CNS-1823244	117,547	—
CRII: CHS: Automatically Praising Learning Process to Promote the Growth Mindset in Computer Science		47.070	IIS-1755628	2,930	—
CRII: CHS: Early Detection of Collective Misconceptions with Network-aware Machine Learning Tools		47.070	IIS-1755873	42,842	—
CRII: CHS: Remote Paper Prototype Testing for Mobile Applications		47.070	IIS-1464315	46,590	—
CRII: CSR: Systems and Tooling Enabling Adaptive Intermittent Computing		47.070	CNS-1850496	41,992	—
CSR: Medium: Collaborative Research: Interweaving the Parallel Software/Hardware Stack		47.070	CNS-1763743 001	161,860	—
CSR: Small: Development of Distributed Neural Processing Electronics for Whole-body Computing and Biomedical Sensor Fusion		47.070	CNS-1816870	83,167	—
CyberTraining: CIU: The LSST Data Science Fellowship Program		47.070	OAC-1829740	143,299	—
DCL: SaTC: Early-Stage Interdisciplinary Collaboration: Privacy Enhancing Framework to Advance Behavior Models		47.070	CNS-1915847	1,111	—
DIP: Collaborative Research: CRAFT: An Online Learning Platform for Scaffolding the Crowd Feedback Loop for Design Innovation Educator		47.070	IIS-1530833	89,764	—
DIP: Digital Studios for Social Innovation Networks		47.070	IIS-1441552	265,125	—
DIP: Modeling in Levels		47.070	IIS-1824536	65,171	—
EAGER: Developing Partnership Structures to Collaboratively Grow Urban STEM Hubs		47.070	IIS-1824536	(1,317)	—
EAGER: PUF-Locked Circuit Obfuscation for Counterfeit and Piracy Prevention		47.070	CNS-1651695 001	40,389	—
Equitable Computer Science for All Learning Ecosystems: Developing Underserved Students' Computational Making Literacies Through Community-Embedded Out of School Time Programming		47.070	CNS-1838916	195,617	34,067
EXP: Advancing Early STEM Learning through Haptic Feedback Displays		47.070	IIS-1522921	128,224	—
EXP: Agile Research Studios: Scaling Cognitive Apprenticeship to Advance Undergraduate and Graduate Research Training in STEM		47.070	IIS-1623635	105,831	—
EXP: Readily Available Learning Experiences: Turning the Entire Web into Scaffolded Examples to Bridge Conceptual Knowledge Gaps for Novice Web Developers		47.070	IIS-1735977	90,569	—
GENI Multi-Service Exchange (SDX)	24	47.070	Agmt 9/28/16 Mod 3 // CNS-1536090	3,327	—

NORTHWESTERN UNIVERSITY
 Supplementary Schedule of Expenditures of Federal Awards
 Year ended August 31, 2019

Cluster title/Federal grantor/Subagency/Project title	Pass-through ID number	CFDA	Sponsor award number	Federal expenditures	Passed-through to subrecipient:
National Science Foundation (continued):					
GPU-Enabled General Relativistic Simulations of Misaligned Black Hole Accretion Systems		47.070	OAC-1811605-001	\$ 9,511	—
III: Small: Collaborative Research: Algorithms for Query by Example of Audio Databases		47.070	IIS-1617497	88,221	—
III: Small: Collaborative Research: Automatically Generating Contextually-Relevant Visualizations Relatedness		47.070	IIS-1702440	(2,493)	—
III: Small: Quantifying Multifaceted Perception Dynamics in Online Social Networks	104	47.070	SA17-0018-S001//1618244	39,171	—
INSPIRE: Glitch Zoo: Teaming Citizen Science with Machine Learning to Deepen LIGO's View of the Cosmos		47.070	IIS-1547880-002	164,734	47,820
IRNC: RXP: StarLight SDX - A Software Defined Networking Exchange for Global Science Research and Educator		47.070	ACI-1450871	511,169	298,932
Making Minecraft Multimodal: A Naturalistic Platform for Collaborative Learning and Creating		47.070	IIS-1822865	90,203	—
NeTS: SMALL: Broadband Service Reliability: Characterization And Improvement		47.070	CNS-1619317	77,998	—
NeTS: Small: Collaborative Research: Leveraging Personalized Internet Services to Combat Online Trolling		47.070	CNS-1615837	15,314	—
NeTS: Small: Incentivizing Internet-Scale Web Mining with Webcoin		47.070	CNS-1810582	38,107	—
NeTS: Small: Mashup Content Harvesting for an Open Internet		47.070	CNS-1526052	214,448	—
NRI: Autonomous Synthesis of Haptic Languages		47.070	IIS-1426961	4,013	—
NRI: Electroense imaging for underwater telepresence and manipulation		47.070	IIS-1427419-005	67,190	33,592
NSCI S12-SSE: The Njetiness software framework for precision perturbative QCD calculations in particle and nuclear physics		47.070	OAC-1740142	112,229	—
NSFSaTC-BSF: CORE: Small: The Utilitarian Implications of Privacy Protections		47.070	CNS-1718670	149,395	—
RI: Medium: Collaborative Research: Next-Generation Statistical Optimization Methods for Big Data Computing		47.070	IIS-1840857	153,198	—
RI: Small: A Unified Compositional Model for Explainable Video-based Human Activity Parsing		47.070	IIS-1815561	56,802	—
RI: Small: Collaborative Research: Information-driven Autonomous Exploration in Uncertain Underwater Environments		47.070	IIS-1717951	85,920	—
RI: Small: Modeling and Learning Visual Similarities under Adverse Visual Conditions		47.070	IIS-1619078	124,151	—
RI: Small: Dynamic In-Hand Robotic Manipulation		47.070	IIS-1527921	66,049	—
S&AS: INT: Autonomous Multi-Robot Visual Monitoring for Urban, Agricultural, and Natural Resource Management	215	47.070	S-001096/IIS-1724341	16,781	—
SaTC: STARRS: ICM: Invariant Carrying Machine for Hardware Assurance		47.070	CNS-1441695	104,118	—
SCC: I4all (interests for all): A smart socio-technical infrastructure to identify, cultivate, and sustain youth STEAM interests in a diverse mid-sized American city		47.070	CNS-1831685	497,644	67,965
SCH:INT: Collaborative Research: High-throughput Phenotyping on Electronic Health Records using Multi-Tensor Factorization		47.070	IIS-1417819	(840)	—
SHF: Small: Collaborative Research: ALETHEIA: A Framework for Automatic Detection/Correction of Corruptions in Extreme Scale Scientific Executions		47.070	CCF-1619253	11,570	—
SHF: Small: Collaborative Research: Designing a Programming Language for Patient-Oriented Prescriptions		47.070	CCF-1526109	4,713	—
SHF: Small: Greybox Computing: An Associative Computing Methodology with Instruction Directed Power and Clock Management		47.070	CCF-1618065-001	103,166	—
SHF: Small: Thermal Monitoring in 3D Integrated Circuits with Bimetallic Thin Film Thermocouples		47.070	CCF-1422489/001	(1,070)	—
SHF: Medium: Collaborative Research: Scalable Algorithms for Spatio-temporal Data Analysis		47.070	CCF-1409601	234,010	—
Sustained-Petascale in Action: Blue Waters Enabling Transformative Science and Engineering		47.070	067846-17001//1238993	45,833	—
TWC SBE: Medium: Collaborative: Incentive Compatible Wireless Security	230	47.070	CNS-1314620	14,160	—
TWC: TTP Option: Medium: Collaborative: Identifying and mitigating trust violations in the smartphone ecosystem		47.070	CNS-1408790	(1,293)	—
WiFiUS: Collaborative Research: Ultra-low latency and High Reliability for Wireless IoT		47.070	CNS-1701921	55,651	—
XPS: EXPL: CCA: Merging Parallel Run-times and Operating Systems		47.070	CCF-1533560 001	118,283	—
XPS: FULL: FP: Design and Synthesis of New Energy-efficient Self-healing Computing Electronics with Real-time Configurability		47.070	CCF-1533656	153,299	—
				8,187,098	500,197
Biophysical Studies of Metalloenzymes		47.074	MCB-1515981 001	248,324	—
Biophysical Studies of Metalloenzymes		47.074	MCB-1908587	21,385	—
CAREER: Discovery of the molecular mechanisms underlying microevolution of phenotypic plasticity in a developmental trait		47.074	IOS-1751035	105,878	—
CAREER: Mapping the proteomic landscape of neural systems.		47.074	IOS-1846234	64,001	—
CAREER: Uncovering Quantitative Design Principles of RNA Regulators for Synthetic Biology		47.074	MCB-1650040 002	60,788	41,461
CEIN: Predictive Toxicology Assessment and Safe Implementation of Nanotechnology in the Environment	214	47.074	0521 G RA112-005 Amd. 4// DBI-126	(605)	—
Collaborative Research: EAGER: Customized cell biosensors for interrogating cancer cell physiology		47.074	MCB-1745753	19,156	—
Collaborative Research: A New Twist on Muscle Contraction		47.074	IOS-1456623	6,814	—
Collaborative Research: Bilateral BBSRC-NSF/BIO: Synthetic Biology for Lignin Utilization		47.074	MCB-1614953	112,445	—
Collaborative Research: Glycoengineering Without Borders: Bacterial Cell-Free Glycoprotein Synthesis		47.074	MCB-1413563	6	—
Collaborative Research: Repurposing the translation apparatus for mirror image polypeptide synthesis		47.074	MCB-1716766	104,335	—
Collaborative Research: Uncovering the Role of Sirtuins in Linking Food Availability and Stress Tolerance Through Multi-Scale Signaling Networks in Mussels		47.074	IOS-1557495	47,390	—
CRCONS: Functional imaging and computational models of place field integration in pyramidal cell dendrites		47.074	IOS-1516235-001	118,554	—
Dissecting the anatomy of regulatory divergence		47.074	IOS-1708519	83,726	—
EAGER: Toward engineering a synthetic enhancer in <i>Caenorhabditis elegans</i>		47.074	MCB-1748307	90,565	—
IDBR: Development of Higher Eigenmode Ultrasound Bioprobe for Sub-Cellular Biological Imaging		47.074	DBI-1256188	21,323	—
Mechanisms of sensory control of developmental rate		47.074	IOS-1755244	50,507	—
RAPID: Collaborative Research: A cell-free synthetic biology platform for water quality monitoring – field testing and validation at the Camp Fire site		47.074	MCB-1929912	69,388	—
Regulation of Nuclear Receptor Function during <i>Drosophila</i> Development	235	47.074	27790-24573001//IOS-145714	(5)	—

NORTHWESTERN UNIVERSITY
 Supplementary Schedule of Expenditures of Federal Awards
 Year ended August 31, 2019

Cluster title/Federal grantor/Subagency/Project title	Pass-through ID number	CFDA	Sponsor award number	Federal expenditures	Passed-through to subrecipient
National Science Foundation (continued):					
Reticulosplinal Execution of Innate Decision-Making		47.074	IOS-1456830	\$ 137,270	—
REU Site: Synthetic Biology (SynBREU)		47.074	DBI-1757973	92,554	—
Synthetic Biology of Yeast	210	47.074	00009607 // 1330914	(586)	—
The Response of Primary Mesenchyme Cells to VEGF		47.074	IOS-1456837	196,382	—
The Vibrissotactile Natural Scene		47.074	IOS-1558068	123,863	—
				<u>1,773,458</u>	<u>41,461</u>
Applications of Dynamic Information Design		47.075	SES-1851883	8,811	—
CAREER: Comparative Statics and Dynamic Models		47.075	SES-1151410/003	30,133	—
CAREER: Crime Victimization Patterns in American Cities		47.075	SES-1840443	(936)	—
Collaborative Research: An Investigation Into Long Term Human Coastal Adaptation		47.075	BCS-1530345	12,363	—
Collaborative Research: Dynamic Mechanisms without Transfers		47.075	SES-1530608	16,035	—
Collaborative Research: Evidence in Economic Models		47.075	SES-1919494	24,925	—
Collaborative Research: NCS-FO: Sleep's role in determining the fate of individual memories		47.075	BCS-1533512	12,995	—
Collaborative Research: Time-Sharing Experiments for the Social Sciences (TESS): Proposal for Renewed Support, 2016-2015		47.075	SES-1628057	331,459	140,331
Collaborative Research: Understanding Team Success and Failure		47.075	SMA-1829344	79,548	—
Collaborative Research: Using Web Data to Study Campaigns and Representation		47.075	SES-1823696	47,713	—
CompCog: Reading as a rational process of visual information gathering		47.075	BCS-1734217	59,858	—
Connectome mapping algorithms with application to community services for big data neuroscience	107	47.075	BL-4831222-NU//BCS-1734853	6,792	—
Constructions of Traditional Medicine during Decolonization and the Global Cold War		47.075	SES-1456984-003	21,455	—
Coordination and Information Design		47.075	SES-1730483	104,239	—
Doctoral Dissertation Improvement Award: The Role of Heritage in Community Organization		47.075	BCS-1630141	4,405	—
Doctoral Dissertation Improvement Grant: Power Relations in the Context of Agricultural Production		47.075	BCS-1818785	848	—
Doctoral Dissertation Research in DRMS: Where Does Innovation Come From? Exploring the Dynamic Processes of Organizing and Managing Social Entrepreneurship and Innovation		47.075	SES-1730079	(163)	—
Doctoral Dissertation Research: Cultural and Social Dimensions of Anti-Mullerian Hormone Screening Technologies		47.075	BCS-1823543	4,377	—
Doctoral Dissertation Research: Intergenerational impacts of culture change-The role of traditional foods in shaping the cardiometabolic health of Alaska Native people		47.075	BCS-1613340	14,191	—
Doctoral Dissertation Research: More than just sun and skin: Investigating the social and developmental determinants of vitamin D production		47.075	BCS-1848357	1,173	—
Doctoral Dissertation Research: Organizational Emergence in the Era of Racial Risk: The Black Guerilla Family and the Aryan Brotherhood in California		47.075	SES-1703056	1,095	—
Doctoral Dissertation Research: Quantifying the Costs of Human Reproduction using the 'Epigenetic Clock		47.075	BCS-1751912	409	—
Doctoral Dissertation Research: Social Evaluations in Organizational Philanthropy		47.075	SES-1637182	(1,813)	—
Doctoral Dissertation Research: Standardizing Persecution in US Asylum Adjudications		47.075	SES-1702602	1,386	—
Doctoral Dissertation Research: The Intergenerational Consequences of Incarceration		47.075	SES-1628126	2,035	—
Doctoral Dissertation Research: The Online Processing of NP-Ellipsis and the Mechanisms of Antecedent Retrieval		47.075	BCS - 1749580	2,920	—
Doctoral Dissertation Research: The Regeneration of Human Settlements amidst Ruins after Episodes of Societal Collapse		47.075	BCS-1806248	5,166	—
Doctoral Dissertation Research: The Role Socioeconomic and Cultural Variation in Neurotrauma Recovery		47.075	BCS-1756617	2,438	—
EAGER: Collaborative Research: Group Dynamics and Success in Science and Research		47.075	SMA-1747623	13,506	—
Econometric Tools for Analysis of Derivatives Data		47.075	SES-1530748	2,316	—
Fiduciary Duty, Financial Regulation, and the Market for Retirement Products		47.075	SES-1824463	117,996	—
INSPIRE: Gradient Symbolic Computation	118	47.075	2001990798 // BCS-1344269-001	12,799	—
Manipulating and classifying memory processing during sleep		47.075	BCS-1461088 002	(214)	—
Manipulating and classifying memory processing during sleep		47.075	BCS-1461088 002	101,907	101,907
Motor exploration and motor learning during child development	139	47.075	RC107136NU//1654929	8,453	—
NCS-FO: Collaborative Research: Understanding the neural basis for sensorimotor control loops using whisker-based robotic hardware platforms		47.075	BCS-1734981	143,774	—
NSF/SBE-BSF: Integration of kinesthetic and tactile information in perception, action, and learning	166	47.075	1464/CL5296/1632259	141,629	—
Postdoctoral Fellowship: The Emergence and Consequences of Global Mathematics in the Twentieth and Twenty-first Centuries		47.075	SES-1826891	54,577	—
Problem-Solving Sociology Workshops		47.075	SES 1823709	49,786	—
RCN: Building a Community of Practice for Household Water Insecurity Research	196	47.075	M1803245 // BCS-1759972	31,058	—
Spatial Intelligence Learning Center	195	47.075	330161-18110-7343-Amd 5//SMA-1041707	17,136	—
Studies of memory reactivation during sleep using intracranial recordings		47.075	BCS-1829414	162,721	—
Surviving the Terminal Classic Maya Collapse: Settlement and Household Archaeology at Aventura, Belize		47.075	BCS-1732129	29,347	—
The Development of Relational Processing in Infancy		47.075	BCS-1729720	189,454	—
The Downside of Social Mobility: Status-Based Identity Uncertainty, Academic Achievement & Psychological Well-Being		47.075	BCS-1531016	32,878	—
Workshop: Advances in Experimental Political Science		47.075	SES-1822286	18,149	—
				<u>1,921,129</u>	<u>242,238</u>

NORTHWESTERN UNIVERSITY
 Supplementary Schedule of Expenditures of Federal Awards
 Year ended August 31, 2019

Cluster title/Federal grantor/Subagency/Project title	Pass-through ID number	CFDA	Sponsor award number	Federal expenditures	Passed-through to subrecipient:
National Science Foundation (continued):					
"CT-flying" the High-School Science Curriculum to Broaden Participation in Computational Science		47.076	DRL-1842374	\$ 365,584	—
A Whole-School Model for Integrating Computational Thinking in High School Science and Mathematics		47.076	DRL-1640201 004	881,607	183,649
An investigation of the impact of culture and experience on reasoning about complex ecological phenomena among students from diverse backgrounds		47.076	DRL-1713368	200,774	—
An investigation of the impact of culture and experience on reasoning about complex ecological phenomena among students from diverse backgrounds		47.076	DRL-1946478	61,682	—
Broadening Participation in Computer Science Through Music, Dance, and Coding Across Learning Spaces		47.076	DRL-1837661	189,164	15,115
Building theories of scientific phenomena: Comparing and Integrating aggregate pattern-based and agent-based computational approaches		47.076	DRL-1842375	227,285	—
CAREER: Blocks, Stickers, and Puzzles: Rethinking Computational Literacy Experiences in Informal Environments		47.076	DRL-1451762-005	155,246	—
CAREER: Investigation of Undergraduate Learning Contexts Considering Ethical, Racial, and Disciplinary Identities of Students in Engineering and Computer Science		47.076	HRD-1855494	21,207	—
Collaborative Research: NSF INCLUDES Alliance: An Alliance to Develop an Inclusive and Diverse National Faculty for Broadening Success of Underrepresented 2-Year and 4-Year STEM Students	20	47.076	Agmt 5/16/19//HRD-1834518	20,664	—
Collaborative Research: Adapting and Implementing a Geospatial High School Course in Career and Technical Education Clusters in Urban Settings		47.076	DRL-1759360	196,628	—
Collaborative Research: Advancing Early STEM Learning Opportunities Through Tinkering and Reflection		47.076	DRL-1515788-002	151,741	—
Collaborative Research: AGEP Transformation Alliance: CIRTL AGEP - Improved Academic Climate for STEM Dissertators and Postdocs to Increase Interest in Faculty Careers		47.076	HRD-1647146	35,979	—
Collaborative Research: Cognitive and Neural Indicators of School-based Improvements in Spatial Problem Solving		47.076	DRL-1420599	6,471	—
Collaborative Research: Engaging Introductory Astronomy Students in Authentic Research through Citizen Science		47.076	DUE-1525725	33,197	—
Collaborative Research: Group-Based Cloud Computing for STEM Education Project		47.076	DRL-1614745	26,195	13,824
Collaborative Research: IUSE: EHR - Enhancing and Expanding Experiential Learning Modules across Disciplines and Institutions		47.076	DUE-1504952	(259)	—
Collaborative Research: IUSE: EHR - Inclusive Learning and Teaching in Undergraduate STEM Instructor		47.076	DUE-1821684	160,050	1,308
Collaborative Research: Mechanisms of Visuospatial Thinking in STEM		47.076	DRL-1661264 002	136,150	—
Collaborative Research: Mixing Learning Experiences for Computer Programming Across Museums, Classrooms, and the Home Using Computational Music		47.076	DRL-1612619	144,297	—
Collaborative research: Neural and cognitive strengthening of conceptual knowledge and reasoning in classroom-based spatial education		47.076	DRL-1661089	100,793	—
Collaborative Research: Next Generation Science Standards (NGSS) and Designing School System Educational Infrastructure to support Elementary School Science Instruction		47.076	DRL-1761057	155,956	—
Collaborative Research: Strategies: Building a Learning Ecology to Increase STEM Participation Among Middle School Girls		47.076	DRL-1850543	32,486	—
Collaborative Research: Using Educational DVDs to Enhance Young Children's STEM Education		47.076	DRL-1252121	95,089	—
Developing a National Research Agenda for Academic Support in STEM Higher Education		47.076	DUE-1836657	52,158	6,325
Doctoral Dissertation Research: A Geospatial Analysis of Alpine Glacial Variability		47.076	BCS-1812764	7,970	—
EAGER: MAKER: A Cultural Framework for Equity in Maker Practices		47.076	DRL-1723750	110,294	—
EAGER: MAKER: The Design and Engineering of Scientific Instrumentation as a Pathway for Introducing Making into High School Science Classrooms		47.076	DRL-1623550-01	25,376	—
Graduate Research Fellowship Program (GRFP)		47.076	DGE - 1842165	4,121,548	—
Graduate Research Fellowships Program (GRFP)		47.076	DGE-1324585 009	257,429	—
GROW 2017: Strengthening women's representation in the mathematics workforce		47.076	DGE-1723805	42,294	—
INSPIRE Track 1: Primary School Organizations as Open Systems: Strategic External Relationship Development to Promote Student Engagement in STEM Topics		47.076	DRL-1344266/003	3,136	3,136
Learning Ethnographies of New Engineers: A New Approach to Understanding the Transition from School to Work		47.076	DRL-1252372	181,386	—
Learning Labs: Using Videos, Exemplary STEM Instruction and Online Teacher Collaboration to Enhance Elementary Math and Science Practice and Classroom Discourse	191	47.076	SP0026903	35,583	—
Methods for assessing replication		47.076	DRL-1841075	273,567	—
Methods to Protect Privacy in State Longitudinal Data Systems Research Files	220	47.076	5968-NU 02 // DGE-1437953	117,718	—
MOC-Supported Learning Communities for Future STEM Faculty: Multiple Paths to Advance Evidence-based Teaching Across the Nation	139	47.076	RC103138NW//DUE-1347605	34,162	—
NRT-DESE: Training in Data-Driven Discovery - From the Earth and the Universe to the Successful Careers of the Future		47.076	DGE-1450006-004	577,070	—
Preparing Future Faculty to Improve STEM Education: Broadening the National Impact of the CIRTL Network	266	47.076	795K406//1726625	10,314	—
SPREaD: Broadening implementation of an innovative STEAM learning environment: Scaling up FUSE Studios through two models of partnership engagement with industry and schools		47.076	DRL-1657438	527,198	84,261
Using hyperlocal and networked strategies to support computer science education for middle grade students in Chicago		47.076	DRL-1824551	620,162	—
				<u>10,395,351</u>	<u>307,618</u>
IRES: US-Dutch Research Collaboration in Cultural Heritage Science		47.079	IIA-1460143	3,828	—
PIRE: Computationally-Based Imaging of Structure in Materials (CuBISM)		47.079	OISE-1743748	720,784	—
				<u>724,612</u>	<u>—</u>
Rheo-X-Ray Investigation of Structure Development in Polymer Melts Under Uniaxial Extension Flow		47.082	DMR-0907068	(2,366)	—
Science Master's Program in Engineering and Global Health Technologies		47.082	DGE-1011618	(2,381)	—
				<u>(4,747)</u>	<u>—</u>

NORTHWESTERN UNIVERSITY
 Supplementary Schedule of Expenditures of Federal Awards
 Year ended August 31, 2019

Cluster title/Federal grantor/Subagency/Project title	Pass-through ID number	CFDA	Sponsor award number	Federal expenditures	Passed-through to subrecipient
National Science Foundation (continued):					
PIRE: Integrated Computational Materials Engineering for Active Materials and Interfaces in Chemical Fuel Production	230	47.083	077340-1 580 Amd. 03/OISE-1545907	\$ 110,053	—
ACME III: Advanced Cold Molecule Electron Electric Dipole Moment Search	281	47.RD	GR107174CON-80001859//1912513	315	—
National Science Foundation Total				50,558,900	2,129,571
Social Security Administration:					
Regulating Markets for Retirement Products: Evidence from Chile	28	96.007	5002110-S4 // 5 RRC08098402-08-00	1,760	—
Social Security Administration Total				1,760	—
U.S. Agency for International Development:					
Comparing HIV Mucosal Targets in US and Kenyan Populations	112	98.001	7503// AID-OAA-A-16-00032	168,909	—
Global Security Act: Policy Analysis and Measurement	176	98.001	825060//7200AA18LA00003	24,535	—
Next-generation products for prevention of HIV infection in women (Project NIX HIV)	68	98.001	NXS-17-001 // AID-OAA-A-17-00014	258,161	—
Testing the Effectiveness of Tailored Non-Formal Education Interventions Promoting Critical Thinking and Emotional Literacy in the Middle East	242	98.001	3003719520 // AID-OAA-A-15-00075 02	8,399	—
				<u>460,004</u>	<u>—</u>
U.S. Agency for International Development Total				460,004	—
U.S. Environmental Protection Agency:					
The Multi-Ethnic Study of Atherosclerosis and Air Pollution (MESA Air): Next Stage	265	66.509	UWSC10113//838300001-0	59,013	—
U.S. Environmental Protection Agency Total				59,013	—
United States Nuclear Regulatory Commission:					
Service Lifetime Extension of Nuclear Power Plants: Prediction of Concrete Aging and Deterioration Through Accelerated Tests, Nondestructive Evaluation, and Stochastic Multiscale Computations		77.009	NRC-HQ-60-14-G-0003 M0007	7,992	7,992
United States Nuclear Regulatory Commission Total				7,992	7,992
Research and Development Cluster Total				507,461,073	71,088,136
Student Financial Assistance Cluster:					
Department of Education:					
Federal SEOG 2018-2019		84.007	P007A181246	2,185,860	—
Federal Work-Study 2017-2018		84.033	P033A171246	413,836	—
Federal Work-Study 2018-2019		84.033	P033A181246	2,915,233	—
Federal Work-Study 2019-2020		84.033	P033A191246	84,576	—
				<u>3,413,645</u>	<u>—</u>
Federal Perkins Loans - Outstanding as of 9/1/18		84.038		24,280,878	—
Federal Pell Grant 2017-2018		84.063	P063P171371	(2,746)	—
Federal Pell Grant 2018-2019		84.063	P063P181371	7,190,891	—
				<u>7,188,145</u>	<u>—</u>
Federal Direct Loan Program 2017-2018		84.268	P268K181371	86,642	—
Federal Direct Loan Program 2018-2019		84.268	P268K191371	184,559,232	—
Federal Direct Loan Program 2019-2020		84.268	P268K201371	5,622,107	—
				<u>190,267,981</u>	<u>—</u>
Department of Education Total				227,336,509	—
Department of Health and Human Services:					
Health Professionals Student and Primary Care - Outstanding as of 9/1/18		93.342		188,251	—
Department of Health and Human Services Total				188,251	—
Student Financial Assistance Cluster Total				227,524,760	—
Other Programs:					
Corporation for National and Community Service:					
Jumpstart Northwestern	120	94.006	Agmt 10/18/18 //920200	68,756	—
Corporation for National and Community Service Total				68,756	—

NORTHWESTERN UNIVERSITY
 Supplementary Schedule of Expenditures of Federal Awards
 Year ended August 31, 2019

Cluster title/Federal grantor/Subagency/Project title	Pass-through ID number	CFDA	Sponsor award number	Federal expenditures	Passed-through to subrecipient
Other Programs (continued):					
United States Patent and Trademark Office: (SECAF 2030 S&T) Air Force 2030 Science and Technology Organizational and Process Study at Northwestern University Research Conference on Innovation Economics 2019		12.800 11.U01	FA9550-18-1-0302 USPTO MOA No. 16147009-0000-003	\$ 16,066 61,460	— —
Department of Commerce Total				77,526	—
Department of Defense:					
Army: ANN SONIC NICO Workshop on Brain Science and Social Networks		12.431	W911NF1910014	13,342	—
National Security Agency: 41st Stochastic Processes and Applications 2019, Evanston, IL, USA		12.901	H98230-19-1-0003	5,853	—
Department of Defense Total				19,195	—
Department of Health and Human Services:					
Illinois Perinatal Quality Collaborative (ILPQC) - FY20 Federal	102	93.667	FCSYU04929	2,568	—
Illinois Perinatal Quality Collaborative (ILPQC) - IL DHS Extension	102	93.667	FCSXU04929//G1901ILSOSR	124,410	64,731
				126,978	64,731
Administration for Community Living:					
Older Adults Engagement Resource Center	142	93.048	90EECC000 1-01-00	822	—
Centers for Disease Control and Prevention:					
Promoting Adolescent Health Through School-Based HIV-STD Prevention and School-Based Surveillance	46	93.079	15-0303-PRC2//5U87PS004162-03	6,613	6,613
Meeting the Needs of Early Childhood Systems to Integrate Evidence-Based Parenting Programs	22	93.424	33-18-8812//6NU38OT000140-05-02	73,464	28,930
Improving the Health of Illinoisans Through Chronic Disease Prevention	103	93.426	AGMT NO. 93286011G//1NU58DP006511-01-00	50,335	—
Improving the Health of Illinoisans Through Chronic Disease Prevention	103	93.426	03286008H//1NU58DP006511-02-00	3,861	—
				54,196	—
Assuring Comprehensive Prevention and Treatment for Families Affected by HIV to Eliminate Perinatal HIV Transmission in the United States	246	93.939	34-5311-3017-002//NU65PS923665-02-00 Amnd 2	26,508	—
Evaluation Center Extension to Evaluate PrEP Implementation and Data to Care Services	45	93.940	6 NU62PS00521-03-02	169,292	—
Evaluation Center Extension to Evaluate PrEP Implementation and Data to Care Services	45	93.940	CONTRACT PO #42045/236320/50105365//U62PS005021	28,109	17,881
Evaluation of Chicago's Community HIV Services Portfolio	45	93.940	Agreement No. 51549	48,434	—
HIV Prevention Program	45	93.940	50105365-A//5 NU62PS924560-02-00	24,214	—
Integrated HIV Surveillance and Prevention, Component B - Demonstration Project	45	93.940	98537//5 NU62PS5924560-02-00	3,220	—
				273,269	17,881
Diabetes and Heart Disease & Stroke Prevent Programs-Innovative State and Local Public Health Strategies to Prevent and Manage Diabetes and Heart Disease and Stroke					
Illinois Perinatal Quality Collaborative Working Together for Healthier Moms and Babies in Illinois	105	93.945	2018-F1817-004//1NU58DP006625-01-00	18,588	—
The HIV Outpatient Study (HOPS) Activity to Abstract Data from Persons Receiving Ambulatory Care for HIV Infection in the United States (the "Prime Agreement")		93.946	6NU58DP006360-03-01	182,306	75,289
	42	93.U02	Agr. 11/19/2015 // 200-2015-63931	140,235	—
Centers for Medicare & Medicaid Services:					
Great Lakes Practice Transformation Network	108	93.638	5345//L1CMS331444	3,148,326	2,187,625
MACRA-Provider Resource Network (M-PRN)	7	93.U03	SC-17-009//HHSM-500-2017- 0004C	246,969	36,039
Special Innovations Project: PACT as a Local Quality Improvement Intervention	194	93.U04	7-001-T0007//HHSM-500-2014-QIN0101	223,645	—
Health Resources and Services Administration:					
HRSA/SPNS Evidence-Informed Approaches to Improving Health Outcomes for People Living with HIV	141	93.928	18-SA-321001-848//U90HA31882	185,578	—
Illinois Perinatal Quality Collaborative (ILPQC) Title V	103	93.994	Agmt No. 96380057G	215,945	95,918
Substance Abuse and Mental Health Services:					
Center for Child Trauma Assessment, Services and Interventions		93.243	5U79SM080018-04	566,669	1,437
Department of Health and Human Services Total				5,490,111	2,514,463
Department of Homeland Security:					
DHS Center of Excellence for Accelerating Operational Efficiency (CAOE) - Preaward Planning Meeting	18	97.077	Agmt 11/2/2017	(1,634)	—
Department of Homeland Security Total				(1,634)	—
Bureau of Justice Assistance:					
Center on Wrongful Convictions of Youth		16.746	2016-FA-BX-0001	14,388	—
Office on Violence Against Women:					
Northwestern University Proposal for OVW 2014 Grant to Reduce Sexual Assault, Domestic Violence, Dating Violence, and Stalking on Campus		16.525	2014-WA-AX-0006	2,214	—
Department of Justice Total				16,602	—

NORTHWESTERN UNIVERSITY
 Supplementary Schedule of Expenditures of Federal Awards
 Year ended August 31, 2019

Cluster title/Federal grantor/Subagency/Project title	Pass-through ID number	CFDA	Sponsor award number	Federal expenditures	Passed-through to subrecipient
Other Programs (continued):					
Department of Labor:					
Occupational Safety and Health Administration					
Northwestern university machine hazards and machine guarding training for students and young workers ages 16-2-		17.502	SH-31214-17-60-F-17	\$ 8,705	—
Department of Labor Total				8,705	—
Department of State:					
Young African Leaders Initiative					
Young African Leaders Initiative	114	19.009	FY18-YALI-BE-NWU-05	12,746	—
	114	19.009	FY19-YAU-BE-NWU-06//S-ECAGD-18-CA-0022	194,414	—
				207,160	—
Fulbright Pre-Departure Orientation 2017-2018	109	19.U05	FSC1801 NWU 4.23.18//S-ECAGD-18-CA-1024	9,819	—
Fulbright Pre-Departure Orientation 2018-2019	109	19.U06	FSC1901-NWU-3.31.19//S-ECAGD-19-CA-0046	48,824	—
Department of State Total				265,803	—
Institute of Museum and Library Services:					
Avalon Media System: Integrating audiovisual collections with research, digital preservation, and a sustainable developer community					
Beyond the Repository: Integrating Local Preservation Systems with National Distribution Services		45.312	LG-70-17-0042-17	502,847	284,639
		45.312	LG-70-18-0168-18	22,304	16,400
				525,151	301,039
Institute of Museum and Library Services Total				525,151	301,039
National Aeronautics and Space Administration:					
Meteoritic Nanodiamond Analysis by Atom-Probe Tomography					
	278	43.001	PO#2928922C/WU-18-16 Mod 3//NNX16AD26G	91,442	—
National Aeronautics and Space Administration Total				91,442	—
National Endowment for the Arts:					
Caravans of Gold, Fragments in Time: Art, Culture, and Medieval Trans-Saharan Exchange					
National Endowment for the Arts Research Labs	270	45.024	1847267-44-19	41,948	—
		45.024	UNIV59613 // DCA 2017-05	62,002	53,920
				103,950	53,920
National Endowment for the Arts Total				103,950	53,920
National Endowment for the Humanities:					
The American Indian Center of Chicago and Urban Native American Histories					
The Digital Berkeley Folk Music Festival Collection		45.149	PY-258677-18	3,297	—
		45.149	PW-253873-17	149,553	—
				152,850	—
Caravans of Gold, Fragments in Time: Art, Culture, and Medieval Trans-Saharan Exchange		45.164	GI-261115-18	344,396	—
National Endowment for the Humanities Total				497,246	—
U.S. Agency for International Development:					
Promoting Rule of Law in Georgia					
Juventud sin Prisión	69	98.001	AID-114-A-15-00004	\$ 6,004	—
Reinsertion for Youth in Conflict with the Law	168	98.U07	1/19/16//AID-523-A-15-00010	6,061	—
	56	98.U08	NU SP0056964//AID-523-A-16-00003	11,409	—
U.S. Agency for International Development Total				23,474	—
Other Programs Total				7,186,327	2,869,422
Maternal, Infant, and Early Childhood:					
Department of Health and Human Services:					
Mothers and Babies Training and Technical Assistance					
Health Resources and Services Administration:					
Florida Statewide Mothers and Babies Training 2018-19	76	93.870	#15-23//1X10MC31134-01	38,366	—
Mothers and Babies Training and Technical Assistance	102	93.870	FCSYV04131//X10MC31139	2,886	—
				41,252	—
Department of Health and Human Services Total				80,081	—
Maternal, Infant, and Early Childhood Total				80,081	—

NORTHWESTERN UNIVERSITY
 Supplementary Schedule of Expenditures of Federal Awards
 Year ended August 31, 2019

<u>Cluster title/Federal grantor/Subagency/Project title</u>	<u>Pass-through ID number</u>	<u>CFDA</u>	<u>Sponsor award number</u>	<u>Federal expenditures</u>	<u>Passed-through to subrecipients</u>
Medicaid Medical Assistance Program: Department of Health and Human Services: Centers for Medicare & Medicaid Services Illinois Medicaid EHR Incentive Program Education and Outreach Program	101	93.778	2018-37-002	664,504	274,313
Department of Health and Human Services Total				<u>664,504</u>	<u>274,313</u>
Medicaid Medical Assistance Program Total				<u>664,504</u>	<u>274,313</u>
Grand Total				<u>\$ 742,916,745</u>	<u>74,231,871</u>

See accompanying notes to supplementary schedule of expenditures of federal awards

NORTHWESTERN UNIVERSITY

Supplementary Schedule of Expenditures of Federal Awards

Legend for Pass-Through Award Prime Recipients

Year ended August 31, 2019

Sponsor Full Name	Pass-through ID Number
Actualize Therapy, LLC	1
Acumen Pharmaceuticals, Inc.	2
Albert Einstein College of Medicine	3
Albert Einstein College of Medicine, Inc.	4
Alliance for Clinical Trials in Oncology	5
Alliance for Sustainable Energy, LLC, National Renewable Energy Laboratory	6
Altarum Institute	7
Altor BioScience Corporation	8
American College of Rheumatology	9
American Foundry Society Inc.	10
American Heart Association	11
American Lightweight Materials Manufacturing Innovation Institute	12
American Lung Association	13
American Physical Society	14
American Urogynecologic Society	15
Ann & Robert H. Lurie Children's Hospital	16
An-Najah National University	17
Arizona State University	18
Arrevus, Inc.	19
Association of Public and Land-grant Universities	20
Association of State and Territorial Chronic Disease Program Directors, Inc.	21
Association of University Centers on Disabilities	22
Avar Consulting, Inc.	23
BBN Technologies	24
Benaroya Research Institute at Virginia	25
BloodCenter of Wisconsin, Inc.	26
Blue Marble Space	27
Boston College	28
Boston Medical Center	29
Boston University	30
Brigham and Women's Hospital	31
Broad Institute, Inc.	32
Brown University	33
California Institute of Technology	34
California Institute of Technology, Jet Propulsion Laboratory	35
Carnegie Institution of Washington	36
Carnegie Mellon University	37
Case Western Reserve University	38
Cedars-Sinai Medical Center	39
Celdara Medical, LLC	40

NORTHWESTERN UNIVERSITY

Supplementary Schedule of Expenditures of Federal Awards

Legend for Pass-Through Award Prime Recipients

Year ended August 31, 2019

Sponsor Full Name	Pass-through ID Number
Cell Reprogramming & Therapeutics LLC	41
Cerner Corporation	42
Charles River Analytics Inc.	43
Chicago Association for Research and Education in Science	44
Chicago Department of Public Health	45
Chicago Public Schools	46
Children's Hospital Boston	47
Children's Hospital of Philadelphia	48
Cincinnati Children's Hospital Medical Center	49
Citrine Informatics	50
Clarix Imaging Corporation	51
Cleveland Clinic Lerner College of Medicine of Case Western Reserve University	52
Cold Spring Harbor Laboratory	53
Columbia University	54
Community Action Project of Tulsa County, Inc.	55
Consejo Ciudadano de Seguridad y Justicia de Chihuahua, A.C.	56
COPD Foundation	57
Cornell University	58
Dana-Farber Cancer Institute	59
Dartmouth College	60
DCS Corporation	61
DePaul University	62
DermaXon LLC	63
Digital Optics Technologies, Inc.	64
Dow Chemical Company	65
Duke University	66
Eastern Virginia Medical School	68
East-West Management Institute Inc.	69
ECOG-ACRIN Medical Research Foundation, Inc.	70
Elorac, Inc.	71
EMMES Corporation	72
Emory University	73
Engineering and Software System Solutions, Inc.	74
Fermi Research Alliance, LLC, Fermi National Accelerator Laboratory	75
Florida Association of Healthy Start Coalitions, Inc.	76
Florida State University	77
Ford Motor Company	78
Forsyth Institute	79
Fred Hutchinson Cancer Research Center	80
Frontier Science and Technology Research Foundation	81

NORTHWESTERN UNIVERSITY

Supplementary Schedule of Expenditures of Federal Awards

Legend for Pass-Through Award Prime Recipients

Year ended August 31, 2019

Sponsor Full Name	Pass-through ID Number
FuelCell Energy, Inc.	82
Fundação Faculdade de Medicina	83
Gallaudet University	84
George Washington University	85
Georgetown University	86
Georgia Institute of Technology	87
Georgia State University	88
Government of Israel Ministry of Defense Mission to the USA	89
Great Lakes Hemophilia Foundation	90
Greenway Energy LLC	91
Grzybowski Scientific Inventions, Ltd.	92
Harvard University	93
Health Research, Incorporated	94
Hektoen Institute for Medical Research	95
Henry M. Jackson Foundation for the Advancement of Military Medicine	96
Honeywell Federal Manufacturing & Technologies, LLC	97
Howard Brown Health Center	98
Icahn School of Medicine at Mount Sinai	99
ICON Clinical Research, LLC	100
Illinois Department of Healthcare and Family Services	101
Illinois Department of Human Services	102
Illinois Department of Public Health	103
Illinois Institute of Technology	104
Illinois Public Health Institute	105
ImmunoChem Therapeutics, LLC	106
Indiana University	107
Indiana University Purdue University Indianapolis	108
Institute of International Education, Inc.	109
Intact Genomics, Inc.	110
Integrated Protein Technologies, Inc.	111
International AIDS Vaccine Initiative	112
International Business Machines Corporation	113
International Research & Exchanges Board	114
Iowa State University	115
Jaeb Center for Health Research	116
Joan and Sanford I. Weill Medical College of Cornell University	117
Johns Hopkins University	118
Joslin Diabetes Center, Inc.	119
Jumpstart for Young Children, Inc.	120
Kaiser Foundation Research Institute	121

NORTHWESTERN UNIVERSITY

Supplementary Schedule of Expenditures of Federal Awards

Legend for Pass-Through Award Prime Recipients

Year ended August 31, 2019

Sponsor Full Name	Pass-through ID Number
Lehigh University	122
Leidos Biomedical Research, Inc.	123
Leidos, Inc.	124
Los Alamos National Security, LLC, Los Alamos National Laboratory	125
Loyola University Chicago	126
Lynntech, Inc.	127
Magee-Womens Research Institute and Foundation	128
Massachusetts General Hospital	129
Massachusetts Institute of Technology	130
Materials and Electrochemical Research Corporation	131
Mathematica Policy Research, Inc.	132
Mayo Clinic	133
Mayo Clinic Jacksonville	134
Medical College of Wisconsin	135
Medical University of South Carolina	136
Methodist Hospital Research Institute	137
Metropolitan Family Services	138
Michigan State University	139
Montana State University	140
National Alliance of State and Territorial AIDS Directors	141
National Association of Area Agencies on Aging	142
National Jewish Health	143
Neurodon LLC	144
NeuroKine Therapeutics, LLC	145
New England Research Institutes, Inc.	146
New York University	147
New York University School of Medicine	148
Northeastern University	149
Northrop Grumman Corporation	150
NorthShore University HealthSystem Research Institute	151
Nour, LLC	152
NRG Oncology Foundation, Inc.	153
NuMat Technologies, Inc.	154
Ohio State University	155
Opticent Health, Inc.	156
Opto-Knowledge Systems, Inc.	157
Oregon Health & Science University	158
Pancreatic Cancer Action Network, Inc.	159
Pennington Biomedical Research Center	160
Pennsylvania State University	161

NORTHWESTERN UNIVERSITY

Supplementary Schedule of Expenditures of Federal Awards

Legend for Pass-Through Award Prime Recipients

Year ended August 31, 2019

Sponsor Full Name	Pass-through ID Number
Princeton University	162
Protabit LLC	163
Purdue University	164
RAND Corporation	165
Rehabilitation Institute of Chicago	166
Rehabilitation Institute Research Corporation	167
Reinserta un Mexicano, A.C.	168
Rensselaer Polytechnic Institute	169
Research Triangle Institute	170
Respiratory Health Association of Metropolitan Chicago	171
Rho Federal Systems Division, Inc.	172
Rockefeller University	173
Rosalind Franklin University of Medicine and Science	174
Rush University Medical Center	175
Rutgers University, the State University of New Jersey	176
RxGen, Inc.	177
SAFCell, Inc.	178
Salzman Group, Inc.	179
Sanford Burnham Prebys Medical Discovery Institute	180
Scripps Research Institute	181
Seattle Children's Hospital	182
SIMmersion LLC	183
SixPoint Materials, Inc.	184
Smithsonian Astrophysical Observatory	185
Sonica LLC	186
Southern Methodist University	187
Space Telescope Science Institute	188
Spaulding for Children (MI)	189
Stanford University	190
Teaching Channel	191
Technion - Israel Institute of Technolog	192
Technology Assessment and Transfer, Inc.	193
Telligen, Inc.	194
Temple University	195
Texas A&M University System	196
Texas Biomedical Research Institute	197
Thomas Jefferson University	198
Triad National Security, LLC, Los Alamos National Laboratory	199
Tufts Medical Center, Inc.	200
Tufts University	201

NORTHWESTERN UNIVERSITY

Supplementary Schedule of Expenditures of Federal Awards

Legend for Pass-Through Award Prime Recipients

Year ended August 31, 2019

Sponsor Full Name	Pass-through ID Number
Tulane University	202
UChicago Argonne, LLC, Argonne National Laboratory	203
Université de Bamako	204
Universities Space Research Association	205
University of Alabama at Birmingham	206
University of Alberta	207
University of Arizona	208
University of Arkansas for Medical Sciences	209
University of California, Berkeley	210
University of California, Davis	211
University of California, Irvine	212
University of California, Lawrence Berkeley National Laboratory	213
University of California, Los Angeles	214
University of California, Riverside	215
University of California, San Diego	216
University of California, San Francisco	217
University of California, Santa Barbara	218
University of Chicago	219
University of Chicago, National Opinion Research Center	220
University of Cincinnati	221
University of Colorado	222
University of Colorado Denver	223
University of Connecticut Health Center	224
University of Florida	225
University of Georgia	226
University of Houston	227
University of Ibadan	228
University of Illinois at Chicago	229
University of Illinois at Urbana-Champaign	230
University of Iowa	231
University of Jos	232
University of Kentucky	233
University of Lagos	234
University of Maryland, College Park	235
University of Massachusetts Amherst	236
University of Massachusetts Boston	237
University of Massachusetts Lowell	238
University of Massachusetts Medical School	239
University of Memphis	240
University of Miami	241
University of Michigan	242
University of Minnesota	243
University of Missouri-Columbia	244

NORTHWESTERN UNIVERSITY

Supplementary Schedule of Expenditures of Federal Awards

Legend for Pass-Through Award Prime Recipients

Year ended August 31, 2019

Sponsor Full Name	Pass-through ID Number
University of Nebraska at Kearney	245
University of Nebraska Medical Center	246
University of New Hampshire	247
University of North Carolina at Chapel Hill	248
University of Notre Dame	249
University of Pennsylvania	250
University of Pittsburgh	251
University of Rochester	252
University of Southern California	253
University of Texas at Arlington	254
University of Texas at Austin	255
University of Texas at Dallas	256
University of Texas at San Antonio	257
University of Texas Health Science Center at Houston	258
University of Texas M. D. Anderson Cancer Center	259
University of Texas Medical Branch at Galveston	260
University of Texas Southwestern Medical Center at Dallas	261
University of Texas Southwestern Medical School	262
University of Utah	263
University of Virginia	264
University of Washington	265
University of Wisconsin-Madison	266
University of Wisconsin-Milwaukee	267
University of Wisconsin-Whitewater	268
UT-Battelle, LLC, Oak Ridge National Laboratory	269
Vanderbilt University	270
Vanderbilt University Medical Center	271
Veterans Medical Research Foundation of San Diego	272
Vidrio Technologies, LLC	273
Vignet Inc.	274
Virginia Commonwealth University	275
Virginia Polytechnic Institute and State University	276
Wake Forest University Health Sciences	277
Washington University in St. Louis	278
Wearifi, Inc.	279
WestEd	280
Yale University	281

NORTHWESTERN UNIVERSITY

Notes to Supplementary Schedule of Expenditures of Federal Awards

Year ended August 31, 2019

(1) Organization and Scope of Operations

Northwestern University (the University) is a not-for-profit corporation organized under the laws of the State of Illinois, whose charter establishes a Board of Trustees to oversee the implementation of its mission to carry out research and education. All federal expenditures of the University are included in the scope of the U.S. Office of Management and Budget Circular OMB Single Audit Report. The U.S. Department of Health and Human Services has been designated as the University's cognizant agency for the single audit.

(2) Summary of Significant Accounting Policies

Basis of Accounting – The accompanying supplementary schedule of expenditures of federal awards (the Schedule) summarizes the expenditures of the University and its subsidiaries under programs of the federal government for the year ended August 31, 2019. The Schedule is prepared on the accrual basis of accounting. Since the Schedule presents only a selected portion of the operations of the University, it is not intended to, and does not, present the consolidated financial position or changes in net assets of the University.

For purposes of the Schedule, federal awards include all grants, contracts, and similar agreements entered into directly between the University and agencies and departments of the federal government and all subawards to the University by nonfederal organizations pursuant to federal grants, contracts, and similar agreements. Complete CFDA numbers and pass through numbers are provided on the Schedule when available.

Indirect Costs – The University has negotiated indirect cost rates with the U.S. Department of Health and Human Services. The University does not use the de minimis F&A rate described in 2 CFR 200.414 of the Uniform Guidance.

Expenditure and Revenue Recognition – The Schedule presents the expenditures of individual programs on the accrual basis of accounting. All program outlays, including accrued expenditures and capital outlays, are reported as expenditures. Related revenues (which are not presented herein) are recognized up to award amounts for financial statement and program reporting. Award reporting periods do not necessarily coincide with the fiscal reporting period of the University. Negative amounts presented in the Schedule represent adjustments, in the normal course of business, to expenditures reported in prior years.

Pass Through Awards – The University receives certain federal awards from pass through awards of the State of Illinois and other nonfederal organizations. The total amount of expenditures for such pass through awards is included in the Schedule.

Subrecipients – The University passes through certain funds to subrecipient organizations. The total amount of such subrecipient expenditures is included in the Schedule for each federal award, where applicable.

De Minimis F&A – The University applies the 10% de minimis F&A rate to modified total direct costs (MTDC) to subawards if the subrecipient does not receive an approved negotiated F&A rate as described in 2 CFR 200.414 of the Uniform Guidance.

NORTHWESTERN UNIVERSITY

Notes to Supplementary Schedule of Expenditures of Federal Awards

Year ended August 31, 2019

(3) Federal Student Loan Programs

Loans made by the University to eligible students under federal student loan programs and federally guaranteed loans originating with the University and issued to its students during the year ended August 31, 2019, are summarized as follows:

Federal Perkins Loan Program (CFDA 84.038)	\$	—
Federal Direct Loan Programs (CFDA 84.268)		190,267,981
HPSL Primary Care Loans (CFDA 93.342)		<u>—</u>
Total Federal Student Loan Programs	\$	<u>190,267,981</u>

The Perkins and Health Professions Student Loan (HPSL) programs are administered directly by the University and balances and transactions relating to these programs are included in the University's consolidated financial statements. The balances of loans outstanding under the Perkins (CFDA 84.038) and HPSL (CFDA 93.342) programs were \$18,992,170 and \$175,732, respectively, at August 31, 2019. The University incurred \$0 in administrative expenses under the Federal Supplemental Educational Opportunity Grant, Federal Work Study, and Perkins programs for the year ended August 31, 2019.



KPMG LLP
Aon Center
Suite 5500
200 E. Randolph Street
Chicago, IL 60601-6436

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

The Board of Trustees
Northwestern University:

We have audited, in accordance with the auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards*, issued by the Comptroller General of the United States, the consolidated financial statements of Northwestern University (the University), which comprise the consolidated statement of financial position as of August 31, 2019, the related consolidated statements of activities and cash flows for the year then ended, and the related notes to the consolidated financial statements, and have issued our report thereon dated December 20, 2019. Our report contains an emphasis of matters paragraph referring to the University's adoptions, in 2019, of Financial Accounting Standards Board Accounting Standards Update (ASU) No. 2018-08, *Clarifying the Scope and the Accounting Guidance for Contributions Received and Contributions Made*; ASU No. 2016-14, *Not-for-Profit Entities (Topic 958): Presentation of Financial Statements of Not-for-Profit Entities*; and ASU No. 2014-09, *Revenue from Contracts with Customers (Topic 606)*, as amended.

Internal Control Over Financial Reporting

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

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

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

Compliance and Other Matters

As part of obtaining reasonable assurance about whether the University's consolidated financial statements are free from material misstatement, we performed tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements, noncompliance with which could have a direct and material effect on the determination of consolidated 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 results of that testing, and not to provide an opinion on the effectiveness of the University'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 University's internal control and compliance. Accordingly, this communication is not suitable for any other purpose.

KPMG LLP

Chicago, Illinois
December 20, 2019



KPMG LLP
Aon Center
Suite 5500
200 E. Randolph Street
Chicago, IL 60601-6436

Independent Auditors' Report on Compliance for Major Federal Program; Report on Internal Control Over Compliance; and Report on Supplementary Schedule of Expenditures of Federal Awards Required by the Uniform Guidance

The Board of Trustees
Northwestern University:

Report on Compliance for Each Major Federal Program

We have audited Northwestern University's (the University's) compliance with the types of compliance requirements described in the *OMB Compliance Supplement* that could have a direct and material effect on each of the University's major federal program for the year ended August 31, 2019. The University's major federal program is identified in the summary of auditors' results section of the accompanying schedule of findings and questioned costs.

Management's Responsibility

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

Auditors' Responsibility

Our responsibility is to express an opinion on compliance for the University'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 of America; the standards applicable to financial audits contained in *Government Auditing Standards*, issued by the Comptroller General of the United States; and the audit requirements of Title 2 U.S. Code of Federal Regulations Part 200, *Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards* (Uniform Guidance). Those standards and the Uniform Guidance require that we plan and perform the audit to obtain reasonable assurance about whether noncompliance with the types of compliance requirements referred to above that could have a direct and material effect on a major federal program occurred. An audit includes examining, on a test basis, evidence about the University's compliance with those requirements and performing such other procedures as we considered necessary in the circumstances.

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

Opinion on Each Major Federal Program

In our opinion, the University complied, in all material respects, with the types of compliance requirements referred to above that could have a direct and material effect on its major federal program for the year ended August 31, 2019.

Other Matters

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



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

Report on Internal Control Over Compliance

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

A deficiency in internal control over compliance exists when the design or operation of a control over compliance does not allow management or employees, in the normal course of performing their assigned functions, to prevent, or detect and correct, noncompliance with a type of compliance requirement of a federal program on a timely basis. A material weakness in internal control over compliance is a deficiency, or 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 and therefore, material weaknesses or significant deficiencies may exist that have not been identified. We did not identify any deficiencies in internal control over compliance that we consider to be material weaknesses. However, we did identify a certain deficiency in internal control over compliance, described in the accompanying schedule of findings and questioned costs as item 2019-001, that we consider to be a significant deficiency.

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

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



Report on Supplementary Schedule of Expenditures of Federal Awards Required by the Uniform Guidance

We have audited the consolidated financial statements of the University as of and for the year ended August 31, 2019, and have issued our report thereon dated December 20, 2019, which contained an unmodified opinion on those consolidated financial statements. Our audit was conducted for the purpose of forming an opinion on the consolidated financial statements as a whole. The accompanying supplementary schedule of expenditures of federal awards is presented for purposes of additional analysis as required by the Uniform Guidance and is not a required part of the consolidated financial statements. Such information is the responsibility of management and was derived from and relates directly to the underlying accounting and other records used to prepare the consolidated financial statements. The information has been subjected to the auditing procedures applied in the audit of the consolidated financial statements and certain additional procedures, including comparing and reconciling such information directly to the underlying accounting and other records used to prepare the consolidated financial statements or to the consolidated financial statements themselves, and other additional procedures in accordance with auditing standards generally accepted in the United States of America. In our opinion, the supplementary schedule of expenditures of federal awards is fairly stated, in all material respects, in relation to the consolidated financial statements as a whole.

KPMG LLP

Chicago, Illinois
May 28, 2020

NORTHWESTERN UNIVERSITY
Schedule of Findings and Questioned Costs
Year ended August 31, 2019

(1) Summary of Auditors' Results

- (a) Type of report issued on whether the consolidated financial statements were prepared in accordance with U.S. generally accepted accounting principles: Unmodified
- (b) Internal control deficiencies over financial reporting disclosed by the audit of the consolidated financial statements:
 - Material weaknesses: No
 - Significant deficiencies: None reported
- (c) Noncompliance material to the consolidated financial statements: No
- (d) Internal control deficiencies over major program disclosed by the audit:
 - Material weaknesses: No
 - Significant deficiencies: Yes
- (e) Type of report issued on compliance for major program: Unmodified
- (f) Audit findings that are required to be reported in accordance with 2 CFR 200.516(a): Yes
- (g) Major program:
 - Research and Development Cluster – Various CFDA numbers
- (h) Dollar threshold used to distinguish between Type A and Type B programs: \$3,000,000
- (i) Auditee qualified as a low risk auditee: Yes

(2) Findings Relating to the Consolidated Financial Statements Reported in Accordance with *Government Auditing Standards*

None

NORTHWESTERN UNIVERSITY
 Schedule of Findings and Questioned Costs
 Year ended August 31, 2019

(3) Findings and Questioned Costs Relating to Federal Awards:

Finding 2019-001 Inadequate Process for Updating Property Management Records

Federal Agency: Corporation for National and Community Service (CNCS)
 U.S. Agency for International Development (USAID)
 U.S. Department of Agriculture (USDA)
 U.S. Department of Commerce (USDOC)
 U.S. Department of Defense (USDOD)
 U.S. Department of Education (USDE)
 U.S. Department of Energy (USDOE)
 U.S. Department of Health and Human Services (USDHHS)
 U.S. Department of Homeland Security (USDHS)
 U.S. Department of Justice (USDOJ)
 U.S. Department of Labor (USDOL)
 U.S. Department of State (USDOS)
 U.S. Department of Transportation (USDOT)
 U.S. Department of Veterans Affairs (USDVA)
 U.S. Environmental Protection Agency (USEPA)
 U.S. Social Security Administration (USSSA)
 National Aeronautics and Space Administration (NASA)
 National Endowment for the Humanities (NEH)
 National Science Foundation (NSF)
 Nuclear Regulatory Commission (NRC)
 Institute of Museum and Library Services
 All Pass-Through Entities

Program Name: Research and Development Cluster

CFDA # and Program Expenditures: Various (\$507,461,073)

Federal Award Numbers: Various – See table of award numbers

Federal Award Year: Various – See table of award numbers

Questioned Costs: None

Condition Found

The University did not consistently follow property management regulations relative to equipment purchased with federal funding from the Research and Development (R&D) Cluster program.

The University conducts research and development activities in multiple locations on its Chicago and Evanston campuses. Equipment items purchased with federal funds are utilized at both of these locations. The University identifies all equipment in its property management records with individually assigned asset numbers and each individual asset record includes the specific location of the asset, the federal award general ledger account number which funded the purchase of the asset, and other required information. An asset tag with the assigned asset number is affixed to each asset in accordance with University policy.

NORTHWESTERN UNIVERSITY
Schedule of Findings and Questioned Costs
Year ended August 31, 2019

During our physical observation of 45 pieces of equipment purchased with R&D Cluster funds, we noted the following:

- One item included on the R&D Cluster inventory list (with a cost value of \$209,647 and a net book value of \$146,753) could not be located for observation. It was determined that this item had been disposed of previously; however, the property records had not been updated to reflect the disposal.
- Two equipment items (with a cost value of \$384,901 and a net book value of \$184,950) were not properly tagged by the University as of the date of our equipment observation.
- Two equipment items (with a cost value of \$38,824 and a net book value of \$980) were each incorrectly entered into the asset management system a second time, resulting in the duplication of two assets in the fixed asset listing.

While the University has documented policies and procedures which have been communicated and are available to University staff and the University's control procedures include performing a biennial inventory, monitoring procedures to verify equipment records are accurate are not operating at a sufficient level of precision to identify all disposals that have not been reported by decentralized units in a timely manner. In addition, monitoring procedures are not operating at a sufficient level of precision to verify all equipment items are tagged correctly and entered into the asset management system accurately.

As of August 31, 2019, the cost value of equipment purchased with R&D Cluster funds was \$117,347,170 (with a net book value of \$30,464,082).

Criteria

According to 2 CFR 200.313(c), equipment must be used in the program which acquired it or, when appropriate, other federal programs. 2 CFR 200.313(d) requires a non-federal entity to establish a control system to safeguard equipment and to ensure equipment is adequately maintained. 2 CFR 200.313(e) also requires the non-federal entity to request disposition instructions from the federal awarding agency, if required by the terms and conditions of the Federal award, when equipment is no longer needed.

In addition, 2 CFR 200.303 requires nonfederal entities to, among other things, establish and maintain effective internal control over the federal award that provides reasonable assurance that the non-federal entity is managing the federal award in compliance with federal statutes, regulations, and the terms and conditions of the federal award. Effective internal controls should include establishing procedures to ensure equipment inventory records are accurate and updated for disposals in a timely manner.

Cause

In discussing these conditions with University officials, they stated the property records were not updated for disposals or tag updates due to the departments not communicating these updates in a timely manner. In addition, the duplication of two equipment items was due to a gap in the equipment additions review process until detective and preventive controls were implemented in fiscal years 2014 and 2018, respectively.

NORTHWESTERN UNIVERSITY
Schedule of Findings and Questioned Costs
Year ended August 31, 2019

Possible Asserted Effect

Failure to maintain accurate property records results in noncompliance with federal requirements and may result in federal approvals not being obtained when required and federal programs not receiving the appropriate share of proceeds from disposals of equipment purchased with federal funds.

Repeat Finding

A similar finding was reported in the prior year audit as finding number 2018-001.

Statistical Sampling

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

Recommendation

We recommend the University implement procedures to ensure property records are updated in a timely manner, including updated asset tag numbers and equipment disposals.

Views of University Officials

Management agrees. In fiscal year 2020, Accounting Services shall reiterate proper procedures to department Unit Representatives regarding the disposition of equipment, including timely submission of disposal requests and procedures for replacement of equipment under warranty. Accounting Services will continue to perform its own audit of the re-inventories prepared by Unit Representatives as well, gearing its sampling towards higher risk items. Accounting Services shall also stress the importance of affixing property tags on all capital equipment, ensuring the tag numbers match property records, and the process for requesting tag replacements when necessary.

With regards to the two equipment items entered into the property records twice, Management performed an analysis of the University's entire equipment inventory and the related control environment. No duplicates were identified after fiscal year 2014 (detective and preventive controls implemented in fiscal years 2014 and 2018, respectively). The financial statement impact is not material from an annual or cumulative impact perspective.

NORTHWESTERN UNIVERSITY
 Schedule of Findings and Questioned Costs
 Table of Award Numbers
 Year ended August 31, 2019

Name of Federal Program or Cluster (CFDA #)
Research and Development Cluster (Various):
Award Number

JIS-1930642	5DPS0D024587-03	5R21HL132357-02	DMR-1904701
0000225075/(7R01DC014463-02	5F30AG058387-02	5R21LM012578-02	DMR-1905986
00001242/(5R01MH110449-03	5F30AI129237-03	5R21MD011320-02	DMR-1912530
00004892/(HNSN2612012000341	5F30AI131937-03	5R21MH108444-03 REVISED	DMR-1929356
00009607 // 1330914	5F30CA192788-03	5R21MH108863-02 REVISED	DMS 1502632 005
0001552826/(R21A446259-01	5F30CA196118-04 REVISED	5R21MH110374-02 REVISED	DMS-1633295
000504653-SC002/(5R01AR064820-03	5F30CA198185-04	5R21MH115231-02	DMS-1418872
000507860-008/(W81XWH-15-1-0705	5F30CA203292-04 REVISED	5R21MH115301-02	DMS-1506591-001
000514985-001/(7R01HL131110-03	5F30CA203325-04	5R21MH115366-02	DMS-1522747
000518393-002/(1R01AR073850-01	5F30CA203472-04	5R21NR1016745-02 REVISED	DMS-1547394
000519160-003/(1R35CA220502-01A1	5F30CA206413-04	5R21NS090346-02 REVISED	DMS-1600023
0007A-6 Mod 1 // N00014-14-14-2-0002	5F30CA225133-02	5R21NS094999-02	DMS-1600654
00127744/(5R01MH112768-03	5F30DK116481-02	5R21NS096424-02 REVISED	DMS-1600718-001
001-AMend2/(5U01HL128954-04	5F30EY026472-04	5R21NS099662-02 REVISED	DMS-1610278-002
002-AMend1/(5U01HL128954-04	5F30HL134202-04	5R21NS101150-02	DMS-1612437
0036115 (011529-3) // OCE-1331463	5F30HL137279-03	5R21NS103138-02 REVISED	DMS-1620022
0038305 (124684-1)/(5R01LM011663-04	5F30HL140910-02	5R21NS107769-02	DMS-1635352
0038377 (1245412-1)/(5R01MH07553-15	5F30HL142187-02	5R21NS107770-02	DMS-1700147
0041119 (124864-3)/(1R01MD009118-02	5F30MH109249-04	5R21NS109917-02	DMS-1700819 002
0041119(124864-3)/(5R01MD009118-05	5F30NS090817-03 REVISED	5R21OD202530-02	DMS-1708503
0046528 (128659-1)/(5R01MH107540-04	5F30NS090893-05	5R2NS104160-02	DMS-1709544
0047269(128636-2)/(5R01MD010680-04	5F30NS093811-04	5R2SGM079300-13	DMS-1709894
0056353(130910-17)/(SULLTR001857-04	5F31AG055235-02 REVISED	5R25GM121231-03	DMS-1716114
0061277(130820-2)/(R21MH115088-01A1	5F31AG055331-03 REVISED	5R25GM129223-05	DMS-1720433
010085-110021/(1U01NS092076-01A1 R	5F31AG057109-02 REVISED	5R25NS070695-10	DMS-1744209-001
010314-006/(5R01HD086170-04	5F31CA186761-04 REVISED	5R3DC013115-05	DMS-1747457
010635-005/(F8855-17-2-G-95) Mod 3	5F31CA216976-03	5R3M3H103231-05	DMS-1764421
010785-133385/(1U01NS0689-02	5F31CA222801-02	5R34A1009447-02	DMS-180544-001
011275-004/(R305A170640-18	5F31CA232630-02	5R34AT009685-02	DMS-1802037
01353-NOA-NWU03/6D33HP29245-01-01	5F31DC015374-03 REVISED	5R34DA044752-03	DMS-1809011
0169-81148/(5R01CA204231-02	5F31DC015717-02	5R34DK113541-02 REVISED	DMS-1810644
0214047/(1U01HL119991	5F31DC016205-02 REVISED	5R34DK114773-02	DMS-1810747
0254-4051-4609/(5R01CA108671-11	5F31DC017055-02	5R34HL122558-03 REVISED	DMS-1812027
0255-1551-4609/(5R01AG054008-04	5F31DC017062-02	5R34MH100393-03	DMS-1839515
0255-2292-4609/(4UG30D023337-03	5F31DE026952-02 REVISED	5R35CA197450-05	DMS-1841569002
0255-3801-4609/(1R01CA214491-02	5F31DK108544-02	5R35CA197532-04	DMS-1852561
0255-8661-4609/(5U19A118610-03	5F31DK120151-02	5R35CA197599-05	DMS-1906251
0255-8682-4609/(5U19A118610-05	5F31E022414-02	5R35CA197725-06	DMS-1946333
0255-8784-4609/(5R01HL126508-04	5F31EY028593-02	5R35GM118035-04	DRL-1252121
0255-8785-4609/(5R01HL126508-05	5F31HD089693-03	5R35GM118108-03	DRL-1252372
0255-A131-4609/(5U19A135972-02	5F31HL131355-03	5R35GM118144-03	DRL-1344266003
03286008H/(NUS5BDP06511-02-00	5F31HL132454-03	5R35GM118184-04	DRL-1420599
0521 G RA 112-005	5F31HL132552-04	5R37A1008796-26	DRL-1451762 005
0521 G RA276 Amd 5 // 5R01ES022898-05	5F31HL136107-02 REVISED	5R37AG026647-15	DRL-1515788-002
067846-17001/(1238993	5F31LM012492-02	5R37A1033493-26	DRL-1612619
072212-14895	5F31NS095461-02 REVISED	5R37A1094595-08	DRL-1614745
074103-15022/(5P30DA018310-05	5F31NS095476-03 REVISED	5R37AR043380-24	DRL-1623560-01
074974-16734/(DE-SC0012504	5F31NS095652-03 REVISED	5R37HD038691-20	DRL-1640201 004
076415-15405 03 // P015A140048	5F31NS098666-03	5R37HL0481129-23	DRL-1657438
076638-15799/(R25D0D020203-01A1	5F31NS100357-02	5R37HL068546-35	DRL-1661089
077340-1 580 Amd. 03/(OISE-1545907	5F31NS101830-02 REVISED	5R37NS039395-17	DRL-1661264 002
080-27000-S27101/(5R01CA207468-02	5F31NS105451-02 REVISED	5R37NS039395-19	DRL-1713368
080-31050-S27501/(5R1HNS025651-02	5F31NS105486-02	5R37NS041280-20	DRL-1723750
082821-16134 Amd 3 // W31PA01420001	5F31NS106853-02	5R37NS059241-04	DRL-1759360
08649005-32107/(5U01DK97093-05	5F32AA058396-03	5R44CA200601-03	DRL-1761057
087147-16468-01/(CBET-1706219	5F32AI140566-02	5R60CA211271-04	DRL-1824551
0875 G SA507 Amd 6/(3R01MH100117-05S1	5F32CA216996-02	5R60CA211428-04	DRL-1837661
0916/(P30AG059304	5F32CA221327-03	5R60CA211534-04	DRL-1841075
093088-175159/(EFT1-1830881	5F32DA046313-02	5R60CA221848-03	DRL-1842374
1 U01NS093663-01A1	5F32DC015962-02 REVISED	5T32AG020506-18	DRL-1842375
1 (GG008480)/(1R01MH1094696-02	5F32DC017352-02	5T32AI007476-23	DRL-1850543
1 (GG010108-17)/(5P01GM105536-05	5F32EY027185-02 REVISED	5T32AI083216-10	DRL-1946478
1 (GG010108-21)/(3P01GM105536-05S1	5F32GM119191-03	5T32AO095207-08	DUE-1504952
1 (GG011995-01)/(5R01GM118584-03	5F32GM122387-02	5T32AR007611-18	DUE-1525725
1 (GG013015-01)/(5R01ES027845-02	5F32HD055890-02	5T32AR067010-07	DUE-1821684
1000 G SA978 Amd 4 // W911NF-14-1-0378	5F32HL129651-02	5T32CA009560-33	DUE-1836657
1000001715/(5R01HL121293-04	5F32HL131304-03 REVISED	5T32CA070085-23	EAR-1338312-005
10001437-044 Amd 1/(164722-EEC	5F32HL134276-03	5T32CA080621-14	EAR-1344280
100062/(2LCA-DK101-08-06-0000000000	5F32HL136111-02	5T32CA168887-05	EAR-1452344-002
10012005-Sub01/(5R01AR06036-08	5F32HL137282-02 REVISED	5T32CA183183-03	EAR-1541891
1001514516/(5R01HG008348-03	5F32HS025077-02	5T32DK007169-40	EAR-1550108
10034012-CHIC/5K12HD047349-14	5F32HS025330-02	5T32DK062716-14	EAR-1613359
10044932-10/(2P50GM082545-12	5F32MH118718-02	5T32DK077662-13	EAR-1734300
10048539-07/(5U54GM19023-05	5F32NS098737-02 REVISED	5T32DK108738-04	EAR-1835521
100730-11412/(R01CA204231-02	5F32NS101779-02 REVISED	5T32E01009406-09	ECCS-1542205
1007494 NWU Amd 2 // W81XWH-15-1-0527	5F32NS103243-02	5T32EY025022-05	ECCS-1607838
1011902-NWU/(SU24TR002306-03	5F32NS106812-02 REVISED	5T32GM008061-37	ECCS-1611356
1013080-005_Northwestern/(3U10CA180888-06S1	5F99CA222988-02	5T32GM008152-33	ECCS-1748339
1035860/(W81XWH-17-1-0302	5F99CA234945-02	5T32GM08382-27	ECCS-1835389
1036460/(R01HD0931-01	5F99NS105182-02 REVISED	5T32GM084949-25	ECCS-1837515
104170196/(FA9550-18-1-0142	5G08LM102688-03	5T32GM105538-05 REVISED	ECCS-1842662
104773c	5K01AG053477-04	5T32HD007418-28	ECCS-1853879
1052650/(5U01AI110658-04	5K01AR066739-04 REVISED	5T32HL007909-20 REVISED	EEC-1530734
10533943/(5R21AG057400-02	5K01AR072773-02	5T32HL069771-15 REVISED	EEC-1576718
107905120/(5U19A1070535-12S1	5K01DK089454-05	5T32HL076139-14	EEC-1840819
10571442/(W911NF1810359 S3002254	5K01DK101675-05	5T32HL062953-08	EEC-1840621
1098SUB/(U54HL119810	5K01DK114395-02	5T32HL134633-03	EFMA-1830961
1099630/(5P50GM082250-12	5K01DK116925-02	5T32LM102203-05 REVISED	EFMA-1911283-001
110007/(SUM1AI068636-12 REVISED	5K01HD084672-05	5T32MH115882-02	EFRI/EFMA-1240416-004
11000730-01/(5R21NS106696-02	5K01HL121162-05	5T32NS1041234-17	EFRI-1433510
11000788-046/(R21GM127859-01A1	5K01HL133531-04	5T32NS047987-13	EH15-107-32/(5R01HL130093-04
110140/(SUM1AI068636-12 Revised	5K01LM011973-03	5T32NS047987-13	EH15-150-S1/(5R01MH106575-04
110229 AS322/(SUM1AI068636-12 REVISED	5K01OD024882-03	5T32NS047987-13	EH16-011-S1 Amd 3/(5R01GM112715-04
110236 AS320/(SUM1AI068636-12	5K01OD026571-02	5U01AI035039-26	EH17-147-S1/(5R01HL137920-02
110237/(SUM1AI068636-12	5K07CA184145-05	5U01AI131337-02 REVISED	EH17-251-S1/(1R01NS107383-01
11035591/(1R01CA206185-01	5K07CA195849-03	5U01DK08380-26	EH17-256-S1/(5R01HD092446-02
110408/(5U10CA180821-04	5K07CA216330-02	5U01DK082342-09	EH17-325-S7/(1R01HL140362-01A1
110408/(5U10CA180821-05	5K08CA191019-06	5U01DK099930-07	EH17-341-S1/(1R01DK117906-01
110597268/(1R01HS026506-01	5K08DA037825-05	5U01EB020589-02	F720161001s1 // DE-FE0027584
1115660/(5U01AI113362-05	5K08DA045575-02	5U01HL128954-03	F8598-01-03/(W911NF-16-1-0262
1115-Sub Amd 2 // 15U4155-1810-06	5K08DK013529-05	5K08HL131914-03 REVISED	FA8550-15-2515 P0014/P0015/P00016
111672/(SUM1AI068636-12	5K08DK097721-05	5U01MD011281-04	FA8550-18-1-7810 P00001
1117230/(3K23AG048337-05S1	5K08DK101577-05	5U01MH082830-10	FA9550-13-1-0192
112383860/(DE-SC0019273	5K08DK106450-04	5U01MH109100-03	FA9550-14-1-0003-P00006
113896/(5R01HL08851-09	5K08GM117341-04	5U01NS080818-04	FA9550-15-1-0377 P00005
114435/(5R01CA203731-04	5K08HL114871-05	5U01NR180626-04	FA9550-16-1-0136-P00003
1150119-29472-2-P0007/(FA9550-12-1-0458	5K08HL124205-03	5U10EY023207-05	FA9550-16-1-0150-P00005
1165293/(SUM1AI068636-11	5K08HL125940-05	5U10HL098096-07	FA9550-16-1-0379-P00003
116559-510181/(5D43TW010543-03	5K08HL128867-05	5U10NS077271-07	FA9550-17-1-0089 P00002
116706/(2R01HL091069-06	5K08HL130601-04	5U10NS086608-05	FA9550-17-1-0247-P00001
116795SUB/(5U01CE002880-02-00	5K08HL135348-03	5U19A1135964-02	FA9550-17-1-0271-P00002
117344/(5R01AR070117-02	5K08HL141659-02 REVISED	5U19A1136443-02	FA9550-17-1-0348-P00002
11865SUB/(R21HD09482301	5K08MH112878-03	5U24NS107213-02	FA9550-17-1-0352-P00002
119856/(5R01HL116473-07	5K08NS079482-05 REVISED	5U54CA193419-05 REVISED	FA9550-18-1-0159
1204001/(1U01CA233169-01	5K08NS097624-03	5U54CA199091-05	FA9550-18-1-0252
12052504-Sub05/(2R01AR064251-06A1	5K12HD050121-14	5U54CA203000-05	FA9550-18-1-0320-P00001
120870/(2U10CA180821-06 REVISED	5K12HD073945-08	5U54CA221205-03	FA9550-18-1-0359 P00001
1215-SUB/(R01HL141892-02	5K12HS023011-05	5U54EB027049-02	FA9550-18-1-0401
123775/(W81XWH-17-1-0427	5K22AI136691-02	5U54HD086501-05	FA9550-18-1-0418

NORTHWESTERN UNIVERSITY
 Schedule of Findings and Questioned Costs
 Table of Award Numbers
 Year ended August 31, 2019

Name of Federal Program or Cluster (CFDA #) Research and Development Cluster (Various): Award Number			
1295 G TA411-1//5R01GM112938-04	5K23DA037913-05	5U54MD010723-04	FA9550-18-1-0493
1295 G UA135//5R01GM112938-04	5K23DC014303-05	5U54NS108874-02	FA9550-19-1-0039
130368-511189//W911NF-18-2-0030	5K23HD087529-03	5UG3HD09620-02	FA9550-19-1-0243
134078-511554//FA9550-15-1-0275	5K23HL118139-05	5URNS105562-03	FA9550-19-1-0354
135407//U54A117804	5K23HL133601-04	5UM1A069471-13 REVISED	FP00000825_SA003//5R01HL128173-04
135408-CT1-OMEGA//5U54A117804-05	5K23HL136891-03	5UM1A120184-04	FP035726-02-//SP30DK020595-40
135408-CT1-OMEGA//5U54A117804-05 REVISED	5K23HL138165-02	5K25HD096116-02	FP037621-02 // DMR-1420709
135409-CT2-Diet Study//5U54A117804-05 REVISED	5K23NS091430-03	6 U18DP006120-04-02	FP037911//2T32HS000084-21
138078-5105175 // 2U19NS104683-02 REVISED	5K23NS092975-05	60045478 Amd 01 // R01GM120582	FP037911-03//2T32HS000084-21
14091801//5R01HL128330-03	5K24DC012801-06 REVISED	60065452 Amd 002 // R01GM120823	FP038885//R01NS62771
1423 NU//5U54HD047905-14	5K25DK113242-02	60071077//5R01HL128857-04	FP053700-3//P01HD076816
1427448//R01CA218466-01	5K25HD096116-02	60088-12935-NWU//R01A1127302-02	FP055658//5R01DK103014-04
1464/CL5296//1632259	5K25HL119608-05	61526610-125216//R01HL136390-01	FP068473-03-PR//5R01ESO15024-12
14DNAR00005-05-00	5K9NS102952-02	61867865-128280//R01DA037222-03 REVISED	FP069116-B // FA9550-15-1-0162
14M49//5R01HL142550-05	5K23TR001424-04	61869866-125439//ZU1NS039455-16A1	FP060024 Amd 1 // R01EY025957-01A1
152213.5081815.0003 Amd 3 // 5R01GM105375-04	5P01AG011412-20	619-2-1 DE-EE0007728	FP060211//5R01NS095162-03
152451.5080936.0403//5U01GM112623-04	5P01AG049665-04	630K475 Amd 3 // CHE-1503408	FP061138//U01CE00712-04
153271.5106938.0002//5R21AG059157-02	5P01AG054407-02	6317//90FRE0007-01-00	FP063797-1//R01NS093908
1551539 Mod 2//R305C140006	5P01AI112522-05	63501087//5R34DA037516-03 REVISED	FP064397//R21MD011439
1553361 Mod 4 // N000114-15-1-2809	5P01AI131346-03 REVISED	636K694//R01A12041868-04	FP064531 // 2016-JU-FX-0002
1558 G VA507//SP30AG028748-12	5P01DK117824-02	64853091 NOR-181797-02//5U01CA089600-13	FP064995//U01CA217078
1560 G WA745//7UM1A1068636-13 REVISED	5P01GM096971-05	65904754 Amd. 4 // NNA13AA92A	FP066077-//A//SUG1HL139125-02
1560 G WA747//7UM1A1068636-13 REVISED	5P01GM096971-05	667206//5R01NS084288-05	FP066297-02-PR-B//R01CA223662-01A1
1560 G WA748//7UM1A1068636-13 REVISED	5P01HD057877-10	683J31945046	FP066835-A//R01AI136056-01
1560 G WA749//7UM1A1068636-13 REVISED	5P01HL07164-02-02	6NUSJDP006138-02-02	FP068540-01-PR//EPA-1830969
1560 G WA798//7UM1A1068636-13 REVISED	5P01NS072027-06	6LJHHP29963-03-01	FP068767-01//5K12HL143599-02
1560 G WA993 // 7UM1A1068636-13 REVISED	5P30AI117943-05	71225/29NU-02//D43TW010140-02	Fully-executed 11/13/13
1560 G WB105//7UM1A1068636-13	5P30AR057216-10	7046-06//5R01FD004086-04	FX-ATRA-NVU-05//5P05H1L20163-05
1560 G WB595 // 7UM1A1068636-13	5P30AR072579-03	706K661//5U54GM119023-05	FY17.090.001//5U2HAR067681-05
1560 G WB897//7UM1A1068636-13	5P30DA027828-08	707NANB14H012 Amd 6	FY18ITN053//SUM1A10109565-05
1580GWD844//5U01MH110008-03	5P30DC012035-05 REVISED	707NANB17H283	FY19ITN237//SUM1A10109565-06
15-AO-00-005162-01//HR0011-16-2-0007	5P30DK114857-02	707NANB18H075-1	FY19ITN011//SUM1A10109565-06
16 008956 E 00//W911NF-15-1-0568-P00008	5P41GM105869-05	707NANB18H286	FY19ITN158//SUM1A10109565-06
1604551 // N66001-17-2-4011	5P50CA180995-05	707NANB19H005	FY19ITN289//SUM1A10109565-06
16104042-Sub01//R1AR073576-01	5P50CA221747-02	711GG093933 // OCE-1450528-2	G07-18054A
1652GWA093//R21AR073977-01	5P50DA04121-02	7126//R01HD089852	G08-19025X //NAS8-03060
16572//5R01HD089455-02	5P50DC012283-05 REVISED	7185 cc 81301//R01EB024058-01A1	G08-19047A//NAS8-03060
16659//5R01HS025177-02	5P50HD076188-05 REVISED	7197 cc82196//W81XWH1820057	G09-20056X//NAS8-03060
16-995//1U18DP006255-01	5P60AR064464-05	7201//5R01HD075777-05	G09-20058A//NAS8-03060
17-00568 D Amd. 1 // AST-1636621	5R00AR065480-04	7242 // W81XWH1810668	G09-20060A//NAS8-03060
17-022-02 // 1R11GNS09981-01A1	5R00CA175293-04	7243//SRCE0005-01-00	GMO-170910//5U01DK058369-19
1727846//183405339//AAC5754	5R00CA178188-05	7287//90FRE00200-01-00	GOE-17053A//NAS8-03060
1782018//5NU380T000225-05	5R00CA188293-04	7-312-0214047-52577//U101HL119991	GENFD000164970//5R01HG010004-02
17-S3Z//DE-AR0000882	5R00CA194192-05	7336107 Mod. 2 // 5P01CA092584-18	GMO160216//SU01DK058369-19
18042-02//80NSSC18K0565	5R00DK106655-05	7503// AID-OAA-A-16-00032	GMO-161131//5U01DK058369-19
1806591//R01NS104344-01A1	5R00E8021320-03	75689162//U19A010463-25R	GMO-170910//5U01DK058369-19
18-0773//U18P006255	5R00HL121177-04	76091-11011//W911NF-15-1-0447	GOE-17053A//NAS8-03060
183120-02//5R01MD007652-05	5R00MH109569-05	761K946//R01NS100510-02	GOE-17054A//NAS8-03060
183980//3R01GM105688-07S1	5R00NS089858-05	776K031 // W911NF-17-1-0575	GO7-18024X//NAS8-03060
18-409 // 2017-ST-061-CA001-01	5R00NS089943-05	7800 Amd 2 // R01HL130760-03 / R01HL130760	GO7-18046A//NAS8-03060
18-M61//5R34MH112445-02	5R01AA024065-04	78877-11086-SUB00001175-01//PHY-1624356	GO7-18054A // NAS8-03060
1805675//5R01GM105688-07	5R01AA024409-04	790K182//R30GM119627	GO7-18057X // NAS8-03060
19-84104//5P2CHD065752-09	5R01AG018436-19	795K406//1726625	GO8-19044X // NAS8-03060
1-AF-28//5R01HL098354-05	5R01AG022560-15	79634993//WEI2015-01//2U19AG02490411	GR101471 CON-8000-1218//DE-AR000087
1CPIMP171141-01-00	5R01AG030142-10	798K081//W911NF-18-2-0036	GR104831//CON-80001527//U01HL125111-02
1D43T//W010946-01A1	5R01AG030611-12	7DP2GM110838-02	GR105078//CON-80001598//PHY-140446
1DP2A1136599-01	5R01AG046352-05	7DP3DC021556-05	HAA-258799-19
1DP2DA042417-01	5R01AG049924-03	7K01MH113132-03	HDR1A115-1-0052 P0009
1DP2EY026770-01	5R01AG054429-03	7R01AR064850-06	HDR1A1810003
1DP2HL132390-01	5R01AG055121-03	7R01AR071048-03	HDR1A1910007-P0001
1DP2NS111506-01	5R01AG055425-03	7R01CA176659-06	HDR1A119-1-0010
1DP3DK108248-01 REVISED	5R01AG057683-02	7R01CA022948-03	H000341810012
1F30AG060722-01	5R01AG058613-02	7R01CA223963-02	HR0011-17-2-0044-P0004
1F31AG057137-01A1	5R01AG060162-02	7R01DK095207-06	HRD-1647146
1F31AG059364-01A1	5R01AG061787-02	7R01GM121359-03	HRD-1855494
1F31AR073655-01A1	5R01AG062249-02	7R01HL114529-05	IB00177512 - F0276-01 // CBET-1706562
1F31AR074288-01	5R01AI043407-16	7R03D013373-03	IAA-1460033
1F31CA210719-02	5R01AI043987-19	7R03EB024705-02	IAA-1460143
1F31CA228431-01A1	5R01AI053674-13	7R21NR016377-02	IIP-1534120-002
1F31CA235997-01	5R01AI056346-15	7R21NS093439-03	IIP-153438
1F31CA236175-01	5R01AI057460-15	7R3GSM124820-03	IIP-1640736
1F31CA239426-01	5R01AI072265-11	7UJ0AR071168-02	IIP-1764312
1F31DC017631-01	5R01AI076183-15	80184 // 1R03HD094662-01	IIS-1840866
1F31EY030344-01	5R01AI076456-10	80NSSC17K0052	IIS-1239599
1F31EY030360-01	5R01AI079056-09	80NSSC17K0192-P00004	IIS-1351029 005
1F31NS106840-01A1	5R01AI092825-05 REVISED	80NSSC17K0245	IIS-1417819
1F31NS108444-01A1	5R01AI092825-08	80NSSC18K0189	IIS-1420971
1F32C0167734-01	5R01AI104733-04	80NSSC18K0198-P00001	IIS-1426961
1F32GM122349-03	5R01AI105839-05	80NSSC18K0221-P00008	IIS-1427419-005
1F32GM131665-01	5R01AI108634-04	80NSSC18K0276-P00008	IIS-1438813
1F32HD094552-01 REVISED	5R01AI112911-04	80NSSC18K0575	IIS-1441552
1F32HD100076-01	5R01AI114824-02	80NSSC18K1096 P0001	IIS-1453192
1F32HL140824-01 REVISED	5R01AI118257-04	80NSSC18K1267	IIS-1464315
1F32HL146005-01	5R01AI120625-03 REVISED	80NSSC18K1445-P00002	IIS-1514427
1F32HL149187-01	5R01AI123001-02//BWH AGMT 11/23/16	80NSSC18K1732	IIS-1518602 003
1F32MH120893-01	5R01AI125171-04	80NSSC19K0384	IIS-1522921
1F32NS106720-01 REVISED	5R01AI125366-02	80NSSC19K0646	IIS-1527921
1F32NS110183-01	5R01AI127456-03	8121//90F0993-01-00	IIS-1530833
1K01AR075087-01	5R01AI127695-02 REVISED	81454 Amd 3 //IIS-1552706	IIS-1530837
1K01DA046716-01A1	5R01AI127783-03	81622655//6R01AG047992-02	IIS-1547880-002
1K01DK121875-01	5R01AI128292-03	8231sc//5R01HD078748-05	IIS-1551574-003
1K08AR070285-02	5R01AI130348-03 REVISED	825060//7200AA18A00003	IIS-1617387 001
1K08HL145139-01	5R01AI134862-02	834K32//U19A051426-01A1	IIS-1617468
1K12HS026385-01	5R01AI137174-02	851-SUB//SU01HL125177-04	IIS-1617497
1K22A118421-02	5R01AI137267-02	85596622//R01DK110669-02	IIS-1618096
1K23A1141694-01	5R01AI139054-02	8568sc//5U54NS092089-05	IIS-1619078
1K23HL146890-01	5R01AI141083-02	856K531//R01HD096361-01	IIS-1623635
1K99CA230314-01A1	5R01AR041836-27	86380016F	IIS-1636909
1K99GM123195-01A1	5R01AR044016-23	8666sc//R01HL03009	IIS-1702440
1K99HD094906-01A1	5R01AR054155-08	869-SUB//SU01HL123009	IIS-1707296-003
1K99HL141698-01A1	5R01AR062110-04	8729sc//5R01NR015223-05	IIS-1707319
1P01AI145818-01	5R01AR064349-05 REVISED	88469-11208//W911NF190071	IIS-1717330
1P30AR075049-01	5R01AR064546-05	888-15-16-12//12-312-0214047-52917L	IIS-1717951
1R01AG05877-01A1 REVISED	5R01AR065473-05	893K546//R307C25877-01A1	IIS-1735977
1R01AG059291-01A1	5R01AR066539-04	9009627- NWU//SU10CA180888-04	IIS-1755628
1R01AI140702-01 REVISED	5R01AR066634-05	9009627-009_Northwestern//3U10CA180	IIS-1755873
1R01AI141470-01	5R01AR068375-04	9012549 (130129-26)//SU01HL128954-03	IIS-1815507/001
1R01AI145345-01A1	5R01AR069580-04	9012549(130129-26)//SU01HL128954-03	IIS-1815507
1R01AI146087-01	5R01AR070025-03	901547-NWU//R01HL128954-03	IIS-1822665
1R01AR073279-01A1	5R01AR070166-04	901501-NWU Amd 01//SU01HD084046-04	IIS-1824536
1R01AR074274-01A1	5R01AR071091-02	901507-NWU//5K23AI23525-02	IIS-1832234
1R01AR074997-01	5R01AR071162-04	901513-NWU//SU01HL133704-02	IIS-1835345
1R01CA212409-01A1	5R01AR072721-02	901526-NWU//R21A1135702-02	IIS-1837999
1R01CA228196-01A1 REVISED	5R01AT007701-05	901527-NWU//K08HL140152-02	IIS-1840857
1R01CA233878-01	5R01AT009143-16	901542-NWU//R21DK112720-02	IIS-1845460
1R01CA235647-01	5R01AT009539-03	901546-NWU//U01CA199288-04	IN-4370124-NWU // LG-96-18-0044-18
1R01CA236904-01	5R01AT010413-02	901552-NWU//K23HL145101-01	IN-4683237-NWU//SU01AG051195-02
1R01CA237039-01	5R01CA021776-38 REVISED	901553-NWU//R21A1144549-01	IN4684739NWU//R21CA198409-02
1R01CA242520-01	5R01CA059655-25 REVISED	901553-NWU//R21A1144549-01	IN4687816NWU//R21HL116566-06
1R01CA243249-01	5R01CA073507-20	901574 NU//R03AI147112-01	IN4688176NWU//5R01AG0542493-03

NORTHWESTERN UNIVERSITY
 Schedule of Findings and Questioned Costs
 Table of Award Numbers
 Year ended August 31, 2019

Name of Federal Program or Cluster (CFDA #) Research and Development Cluster (Various): Award Number			
1R01DC01767-01A1	5R01CA077816-19	90AR5015-02-00	IOS- 1755244
1R01DC017482-01	5R01CA101774-17	90AR5019-04-03	IOS-1456623
1R01DK100790-50363-S2/5R01DK100790-04	5R01CA123484-10 REVISED	90AR5031-03-00	IOS-1456830
1R01DK105055-02	5R01CA142861-09	90ARHF0003-01-00	IOS-1456837
1R01DK118425-01A1	5R01CA152601-10	90ARPO0001-02-00	IOS-1516235-001
1R01DK121354-01	5R01CA154908-09	90HG1002-02-00	IOS-1557495
1R01DK121529-01	5R01CA163830-06	90HG1002-03-00	IOS-1558068
1R01DK121997-01	5R01CA172384-05 REVISED	90RTE00001-01-00//7260	IOS-1708518
1R01E029930-01	5R01CA172431-05 REVISED	90YR0073-05-03 Amd 3	IOS-1751035
1R01E029306-01A1	5R01CA174205-05 REVISED	915377-NU//SUM1A1068632-13	IOS-1846234
1R01EY030169-01A1	5R01CA174452-04 REVISED	9254sc/5U01A118594-04	IPA 10/15/18
1R01GM126125-01A1	5R01CA175360-05 REVISED	9320sc/5U01A1104347-05 REVISED	IPA Agmt - 578/151
1R01GM126318-01A1	5R01CA180813-05 REVISED	94743768/UGO3D023287	IPA Agmt 09/21/18
1R01GM129339-01A1	5R01CA181859-05	9500452803/Job13705353/W911NF-09-2-0053 Mod. 16	IPA AGMT Signed 01/09/2019
1R01HD08852-03	5R01CA182506-05	950040217-X/01U10CA180886	IPA Agmt Signed 01/25/18
1R01HD093935-01	5R01CA182832-05 REVISED	96347693/5R21AG057395-02	IPA Agmt Signed 04/12/2017
1R01HD097215-01A1	5R01CA183101-05	965-SUB // 3U54HL119810-05S1	IPA Agmt Signed 05/31/2017 (578/151)
1R01HD098178-01	5R01CA184211-05	972-SUB//5U01HL123009	IPA Agmt Signed 08/31/18
1R01HL141881-01A1	5R01CA185214-04 REVISED	9788sc/5U54NS92089-03	IPA Agmt Signed 09/19/18
1R01HL141933-01A1	5R01CA186885-04S1	97866869 // 5R01HL133001-02	IPA Agmt Signed 10/31/18
1R01HL142761-01A1	5R01CA188015-03 REVISED	982-SUB//3U54HL119810-05S1	IPA Agmt Signed 11/09/2017
1R01HL144708-01	5R01CA189074-03	98537/5 NU62PS5924560-02-00	IPA Agmt Signed 11/13/2017
1R01HL145478-01	5R01CA191317-05	989-SUB//5U01HL123009-05	IPA AGMT. Signed 04/24/2019
1R01HL147070-01	5R01CA192124-05	9920180010/R21AG057396	IPA AGMT. Signed 10/15/2018
1R01HL147290-01	5R01CA193331-04	9R01A15055-9-96A1	IPA AGMT. Signed 07/11/2019
1R01HL147575-01	5R01CA195642-05	A00-2010-S010/U01DK104833	IPA Agmt. Signed 08/08/2018
1R01HL149385-01	5R01CA196270-05	A002181204/N00014-11-1-0690 9	IPA AGMT. Signed 09/05/18
1R01HS026489-01	5R01CA196967-04	A003127002 Amd 7//DE-SC0006888	IPA AGMT. Signed 10/05/18
1R01MD014020-01A1	5R01CA197133-04 REVISED	A00408805 Amd. 3 // CHE-1413862	IPA Agmt. Signed 10/15/2018
1R01MH114923-01A1	5R01CA200864-05	A00452702/DE-SC0012702 Amd 6	IPA Agmt. Signed 11/08/18
1R01MH118741-01A1	5R01CA200201-04	A0054074/022R01HD034294-23	IPA Agmt. Signed 12/21/2018
1R01NS102500-01A1	5R01CA208246-04	A007037602 // EFMA-1830950	KK1623-08/W911NF-15-10577-P0009
1R01NS104219-01A1 REVISED	5R01CA208257-04	A008060101/CHE-1901635	KK1804 // DE-SC0012541
1R01NS104295-01	5R01CA208354-02 REVISED	A0111688/R01AI138783-05A1	M1803245 // BCS-1759972
1R01NS105769-01A1	5R01CA208786-04	A0115901/R01AG057714-02 Revised	MCB-1413863
1R01NS107396-01	5R01CA209886-04	A03-0696/R1F1MH117065	MCB-1515981 001
1R01NS109157-01 REVISED	5R01CA214025-03	A031106/R01AI114824-04	MCB-1614953
1R01NS110631-01	5R01CA214928-02	A039058/SUM1A1104681-07	MCB-1650040 002
1R01NS110779-01	5R01CA217907-02	A054325/DE-SC0019374	MCB-1716766
1R01NS110953-01	5R01CA218436-03	A12761 Amd 01 // ACI-1640840	MCB-1745753
1R01NS112535-01	5R01CA219013-03	A12789 001 // W911NF-16-1-0524	MCB-1748307
1R01NS113352-01	5R01CA220002-02	A146916/5R01NS08528-05	MCB-1905887
1R01NS113425-01	5R01CA221150-03	A18-0471-S001/N00014-17-1-2836 1 Amd. 3	MCB-1929912
1R03AG050945-01A1	5R01CA222963-02	A5361/FY17.830.004/5R01AG054366-02	MCW Signed 11/09/17//U24NS100648-02
1R03DK117216-01A1	5R01CA224275-02	AA06717-001/5R01DC014519-05	Mod 1 /ZUM1A1068836-10
1R03HD094615-01A1	5R01CA227918-02	ACI-1450374	Mod. 6/PS/225707//U01HL123336-05
1R03HL144891-01	5R01CA228272-02	ACI-1450871	MUSC16-087-8C267/SUG3D0023316-02
1R13CA232377-01	5R01CA232347-02	ACI-1541457	MUSC16-102-8A028 // 5R01KO098222-05
1R13DC016830-01	5R01DA030604-09	ACI-1550481	MUSC18-033-8D222/5R25HD074546-08
1R13HL149441-01	5R01DA035942-05	ACT #3201200621; PO#963055-RSUB//1R34HL1	N00014-14-1-0434 P0002
1R13NS106917-01 REVISED	5R01DA040626-02	Agmt 02/04/19	N00014-15-1-2130/N00014-16-1-2508
1R13NS106974-01 REVISED	5R01DA042082-02	Agmt 04/02/019//1R41A136072-01	N00014-15-1-2443-P0002
1R13NS111901-01	5R01DA042711-04	Agmt 04/25/18	N00014-15-1-2701-P0005
1R18H0204027-03	5R01DC001948-22	Agmt 05/13/19 // N00014-16-1-2247	N00014-15-1-2735-P0003
1R18H0206143-01A1	5R01DC004314-18	Agmt 1/31/2018 // 5R01NS- 0538139-09 REVISED	N00014-16-1-2106-P0001
1R18H0206170-02	5R01DC006014-15	Agmt 1/03/16//H30MC24052	N00014-16-1-2251-P0005
1R21AG049835-02	5R01DC008552-13	Agmt 03/01/16//R4AG060846-01	N00014-16-1-2290-P0009
1R21AG056903-01	5R01DC010191-10	Agmt 11/21/18 // 1R24AG062095-01	N00014-16-1-2400-P0003
1R21AG062999-01	5R01DC013576-05	Agmt 11/21/2017 // W911NF-17-P-0017	N00014-16-1-2402-P0004
1R21AG063076-01	5R01DC014426-05	Agmt 12/13/12 // U10 EY14231	N00014-16-1-2613-P0002/N00014-13-1-047C
1R21AI121742-01	5R01DC014709-05	Agmt 12/19/16//W81XWH-16-11-0788	N00014-16-1-2715-P0003
1R21AI125968-01A1	5R01DC015117-03	Agmt 2/15/2018 // 1R43GM121130-01A1	N00014-16-1-2838-P0003
1R21AI131035-01	5R01DC015426-04	Agmt 2/16/18 // 1R43O0023025-01A1	N00014-16-1-3021-p0003
1R21AI131719-01A1	5R01DC015903-03	Agmt 3/15/19 // 1R43AG060812-01	N00014-16-1-3055
1R21AI137458-01A1	5R01DC016273-02	Agmt 3/5/17//R41AG054337-01	N00014-16-1-3117-P0003//N00014-15-1-0043
1R21AI137932-01A1	5R01DC016364-02	Agmt 4/24/17//5U01NS090259-03	N00014-16-1-3175-P0003
1R21AI138596-01A1	5R01DC016645-02	Agmt 4/25/14//U01HL093554	N00014-17-1-2092-P0004
1R21AI142059-01	5R01DE025702-04	Agmt 4/25/14//U01HD036801	N00014-17-1-2231-P0005
1R21AI148033-01	5R01DK060635-17	Agmt 5/16/19//HRD-1834518	N00014-17-1-2258-P0004
1R21AR072263-02	5R01DK083609-09	Agmt 5/22/19//1R44A1140943-01A1	N00014-17-1-2319
1R21CA219028-01A1	5R01DK090625-08	Agmt 6/7/17//R01HL089354	N00014-17-1-2409-P0003
1R21CA230367-01A1	5R01DK092217-06	Agmt 8/11/16//DE-SC0215106	N00014-17-1-2425-P0004
1R21CA239139-01	5R01DK093807-07	Agmt 8/13/12 // U01CA021115	N00014-17-1-2482-P0003
1R21DA044460-01A1	5R01DK097249-05	Agmt 8/15/2017 // IIP-1721594	N00014-17-1-2688
1R21DC017255-01A1	5R01DK097534-05	Agmt 8/30/16-001 // 2R44A1118086-02	N00014-17-1-2707-P0002
1R21DK112066-01	5R01DK098812-04 REVISED	Agmt 9/28/16 Mod 3 // CNS-1536090	N00014-17-1-2993-P0002
1R21DK118503-01A1	5R01DK099820-05	Agmt 9/4/18//U01DK106786	N00014-17-1-3022-P0002
1R21HD09398-01 REVISED	5R01DK100814-05	Agmt Signed 02/27/12//U01NS095388	N00014-17-1-3024
1R21HD099710-01	5R01DK101730-05	Agmt Signed 08/31/18	N00014-18-1-2088-P0001
1R21HS025000-02	5R01DK102438-05	Agmt Signed 10/12/16 // 90CO1122-04	N00014-18-1-2097-P0001
1R21LM012618-02	5R01DK102718-05	Agmt Signed 11/07/2017	N00014-18-1-2098-P0001
1R21LM013097-01	5R01DK102815-05	Agmt Signed 9/5/14	N00014-18-1-2102-A0001
1R21MH119677-01A1	5R01DK103684-04	AGMT00030378/5U01NS104326-02	N00014-18-1-2131
1R21NS107761-01A1	5R01DK103769-04	Agmt 10/06/2015//5R44AR061920-03	N00014-18-1-2135
1R21NS110420-01	5R01DK104785-03 REVISED	Agmt 8/7/14 // U01HL107407	N00014-18-1-2316-P0003
1R21NS111248-01	5R01DK104876-04	AGREEMENT 3/10/16 // 1 H97HA288910100	N00014-18-1-2508
1R21OD025345-01A1	5R01DK106286-05	Agreement 4/19/17//2012-VF-GX-K022	N00014-18-1-2550-P0001
1R25MH115855-01A1	5R01DK107767-04	Agreement 6/27/18 R2 R44 AT009158-02	N00014-18-1-2594-P0001
1R33CA225233-01	5R01DK108127-04	Agreement signed 11/9/10 // 1U01NS028835-01A1	N00014-18-1-2651
1R35GM131752-01	5R01DK108434-03	AST-1343381	N00014-18-1-2787-P0002
1R35GM131788-01	5R01DK108678-04	AST-1352369	N00014-19-1-2135
1R41AG062001-01	5R01DK108987-04	AST-1517246 002	N00014-19-1-2181
1R43AG059445-01	5R01DK109539-03	AST-1517491 002	N00014-19-1-2261
1R56AG050492-01A1	5R01DK110087-04	AST-1817353	N00014-19-1-2321
1R56AG053491-01	5R01DK110172-03	AST-1547328	N00244-18-2-0003
1R56AG054207-01	5R01DK111032-04	AST-1652522	N002854801//U01A11102463-01
1R56AG059291-01	5R01DK112281-03	AST-1715216	N004761502//U01A1120130-04
1R56AG069579-01 REVISED	5R01DK113011-02	AST-1716762	N660011824026-P00004
1R56AG063433-01	5R01DK113158-02	AST-1715732	N660011924024-P00001
1R56A1131239-01A1	5R01DK113170-03	AST-1814782	NIAMS//1R41AR069416-01A1
1R56DC015492-01A1	5R01DK114158-02	AST-1815304	NN104/U01NS088312
1R56DC017492-01A1	5R01DK116988-02	AST-1911080	NNX14AD21G 000005
1R56DK119709-01	5R01DK117491-02	ASUBJ22/2018-68001-27550	NNX14AP92G000005
1R56HL127245-01A1	5R01EB019335-03	ATN02015-V141-553/02744001155-04-02	NNX15AL05G-000212
1R56HL135124-01	5R01EB019337-03	AWD100319/SUB0000080//R01DK120312-01A1	NNX15AM08G 000002
1R56MH113923-01	5R01EB026207-02	Awr4 4/18/2019//1R41AG062023-01	NNX15AM32G-00012-000013
1R56NS108639-01A1	5R01EB026510-02	BCS - 1749580	NNX15AR24G 000007
1R56HL139852-01	5R01ES022310-05	BCS-1461088 002	NNX16AE02G 000003
1RFA1AG057296-01	5R01ES027011-03	BCS-1530345	NNX16AI78A
1RFA1AG057727-01A1 REVISED	5R01EY012141-22	BCS-1531016	NNX16AL31G-000001
1RFA1AG057894-01	5R01EY019463-08	BCS-1533512	NNX16AL94G-000001
1S100D025120-01A1	5R01EY019696-10	BCS-1613340	NNX17AC4AG-000002
1S100D025194-01	5R01EY021579-07	BCS-1630141	NNX17AD48G-000006
1T37MD012448-01	5R01EY023977-04	BCS-1729720	NNX17AD82G
1U01HL148240-01 REVISED	5R01EY025799-04	BCS-1732129	NNX17AE10G-000001
1U01HL146408-01	5R01EY028078-04	BCS-1734217	No.EL-1007-01-01/R01FD005396
1U19AR08926-01 REVISED	5R01EY028304-02	BCS-1734981	NCR-217886/PO#6628769/5P30DK090728-09
1U24NS107233-01	5R01EY028560-02	BCS-1751912	NCR-HQ-60-14-G-0003 M0007
1U24OD023191-01 REVISED	5R01EY029121-02	BCS-1756617	NW10048964/1R01HD0914505-01
1U54CA231638-01/1205801	5R01GM038784-30	BCS-1806248	NWU025865-2565/5R01DE025865-02

NORTHWESTERN UNIVERSITY
 Schedule of Findings and Questioned Costs
 Table of Award Numbers
 Year ended August 31, 2019

Name of Federal Program or Cluster (CFDA #) Research and Development Cluster (Various): Award Number	Award Number	Award Number	Award Number
IUF1NS107697-01	5R01GM049725-23	BCS-1812764	NWU-187276-02/5U01NS080168-03
1UG1CA189828-01-NWU1/1UG1CA189828-04	5R01GM052111-20	BCS-1818785	NWUHL098115 // 5U10HL098115
1UG1CA189828-01-NWU2/1UG1CA189828-05	5R01GM064426-16	BCS-1823543	NXS-17-001 // AID-OAA-A-17-00014
1UG1CA233320-01	5R01GM067193-12	BCS-1829414	OAC-1740142
1UG1HL141729-01A1	5R01GM070736-12	BCS-1848357	OAC-1811605-001
1UG3OD023189-01 REVISED	5R01GM073072-13	BL-4831218-NWUJ/IS-1636893	OAC-1829740
1UM1CA233035-01	5R01GM080484-12	BL-4831222-NU/BCS-1734853	OISE-1743748
200103-05/5R01HL122658-03	5R01GM084223-09 REVISED	BMC ID 6610-01/01/RO1CA224911	OOS030239NCS113726/1R56ES028121-0
2001990739 // BCS-1344269-001	5R01GM087371-09 REVISED	BMSA-006 // 80NSCS17M0054	OSP2018042/5R01DK115960-02
200258569 Amd 2/5R01EB018358-02-REVISED	5R01GM101975-05S1	BWH 092216/1U01A1063594	PO64388-02 // 5R34HL136991-02
2002785688 Amd 3 // R01A1116324	5R01GM101777-04 REVISED	C00045065-5/W911NF-14-1-0359	Pape 0020/W81XWH-14-1-0568
2002911519/5U01CA196390-04	5R01GM108494-05	C2017-0013-01/DE-AR0000813	Pape-0024/W81XWH-15-1-0516
2002969467//5R01HL107151-07	5R01GM108964-04 REVISED	CA-ALT-80-01-10/5R44CA097550-07	PHY - 1806861
2003142248 Amd 3 // 1635443	5R01GM110045-03	CBET-170727	PHY-1404455-002
2003341343/RO1EB020062	5R01GM110146-03 REVISED	CBET-1403036	PHY-1607709 0002
2003348761/5R35DE026631-03	5R01GM111097-47S1	CBET-1435228	PHY-1726951
2003447902/5R01DK1119662-03	5R01GM111652-04	CBET-1438721	PHY-1734332
2003649393/5U01A1134591-02	5R01GM111907-05	CBET-1452549-003	PHY-1806671
2003709195/5R39CT31103-02	5R01GM112945-04	CBET-1453576	PHY-1806686 001
2004008239/2R01HL114800-05	5R01GM113238-04 REVISED	CBET-1511450	PHY-1809730-001
2004208580/UM1A1035043	5R01GM113922-03	CBET-1604890	PHY-1826505
20083504//4U01A1097073-04	5R01GM114210-04 REVISED	CBET-1637764	PHY-1834816
2013-JF-FX-0057	5R01GM115211-02	CBET-1653315	PHY-1903756
201402548-02//1R01HD076189-01A1	5R01GM115739-02	CBET-1704996	PHY-1903757
2014-3-22 Mod 1/7/01/HE-1414466	5R01GM115741-04	CBET-1706125	PHY-1924399
2015-01858-01 Mod. 3 // P015B140048	5R01GM115848-04	CBET-1706642 001	PLR-1304675
2015-05200-09/078131-15789-AB425-03/NNX154AAI05H	5R01GM116538-04	CBET-1803747	PLR-1304686/002
2016.86612.002/5U19MH098780-05	5R01GM118712-04	CBET-1806007	PLR-1454734
201602366-02/5R25NS099170-02	5R01GM120303-03	CBET-1833214	PNU-001//1534743
2016-F2-CX-0039	5R01GM120307-03	CBET-1848506	PO 42004091092/W811NF1220022
2017-4-CX-0019	5R01GM121518-03	CBET-1844219	PO 12909/W812H217C0028
2017-VF-GX-K136	5R01GM124089-02	CBET-1844336	PO 39802/P01A048240
2018-10008-28530	5R01GM124354-02	CBET-1846863	PO No. WA00753476/OSP20170535 Amd 3//5U4DK107980-
2018883-NW/W81XWH-15-1-0603	5R01GM129312-02	CBET-1902139	PO#20104531-RSJB/9500080220-XX/2U10CA180886
20191266/7UM1A1068636-13	5R01HD058859-08	CBET-1929942	PO#632806156/TA-CA-15-008-06
203188NU // DE-NA003783	5R01HD079076-05	CCF-1824919	PR-258900-18
203344NU//1R01HD091235-02	5R01HD083310-05	CCF-1844336	ps#113296/5U01AR068043-03 REVISED
203464NU/DE-NE0008812	5R01HD084009-04	CCF-1844336	R01834 // R324A160193
203496NU/CMMI-1842369	5R01HD087363-02 REVISED	CCF-1844336	R01HL050490
2035489/5P01A120756-03	5R01HD091492-03	CCF-1844336	R1064JLM/5R01HD096277-02
2036138/RO1DK081374-11	5R01HD093718-02	CCF-1844336	R1072/1R01NS10809-01
2037-7585/5R18FD005292-04	5R01HD093726-02	CCF-1409601	R-19-0063/R21DA045285
203-7618/5U10HL084904-12	5R01HD095187-02	CCF-1422489/001	R24NS096549-NU Amd 2
203-7911/5R18FD005292-05	5R01HL035440-18	CCF-1453853-004	R284/1R21AR068035-02
203-7931/1R01DK0118748-01	5R01HL046849-28	CCF-1526109	R305A160013 - 18
203-8439/5UM1A1104681-05	5R01HL051387-21	CCF-1533560 001	R305A180463-01
206423/5R01DK104842-03	5R01HL051387-23	CCF-1533856	R305B140029 - 16
223700/1U10HL084904	5R01HL061322-19	CCF-1618065-001	R305B140042 - 17 Mod 4
225440/5UM1A104681-05	5R01HL073402-18	CCF-1618502	R305B170016
229149 AZD2014//1R01CA201130-01A1 REVISED	5R01HL083374-08	CCF-1619253	R305D170041 - 19
230303232 // F49550-14-1-0040 05	5R01HL084228-08	CCF-1637585	R324/5R01 DC009972-10
232927/5U01NS107009-03	5R01HL085534-12 REVISED	CCF-1652491 001	RC1031388NW/DUE-1347605
238323/5R01AR066601-05	5R01HL092259-10	CCF-1733860	RC105782NU/5R01CA193706-04
258461-00-01//5R39OT29678-03-00	5R01HL107577-08	CCF-1740735	RC106479NU/1632051
26106670061// IIP-1827693	5R01HL109478-03	CCF-1814706	RC107136NU/1654299
27790-24573001/IOS-145714	5R01HL112792-07	CCF-1834324	RES51132/4U01DK094157-06S1
2D43T/W09575-06	5R01HL115828-07	CCF-1844701 002	RES511975/5R01CA211762-03
2K12R001424-05A1	5R01HL116895-05 REVISED	CCF-1846424	RES512393/5U01NS090407-04
2P50NS047085-16	5R01HL117888-05 REVISED	CHE-1351598	RES512393/01NS090407
2R01AG022560-16	5R01HL119095-05	CHE-1381173	RES512846/DK114812-01/3500-07249 (Case)
2R01A1099009-06A1 REVISED	5R01HL120725-04	CHE-1455017	RES513291/5U01DK094157-08 REVISED
2R01CA039655-26	5R01HL122010-04	CHE-1464488	RES514018/5U01DK094157-08 REVISED
2R01CA121192-11	5R01HL122010-06	CHE-1464916	RF890-G1 // NNX15AK73G
2R01CA225002-02	5R01HL122062-04	CHE-1465045	RG026-G1 // NNX15AM26G
2R01GM051350-21A1	5R01HL122109-04 REVISED	CHE-1506683	RG884-G2/RO1HL130619
2R01GM087371-10	5R01HL122309-05 Revised	CHE-1507790	RNG200279-06//R01DK106201
2R01GM104530-06 REVISED	5R01HL122328-04 REVISED	CHE-1565285	RC15-016R02 Mod 2/DE-EE-000867
2R01GM111907-06	5R01HL122477-05	CHE-1607640	RR376-417/4945376//5P30DA027827
2R01HL061322-20	5R01HL122846-04 REVISED	CHE-1664184	S-00014999 // R305A170165
2R01HL064774-17	5R01HL122921-04	CHE-1665021	S-000700 Amd 07 // USAF F49550-15-1-0009
2R01MH101297-06	5R01HL124120-04	CHE-1665141	S-001096/IS-1724341
2R01NS061235-10	5R01HL125881-04	CHE-1665255	S0002/2R01NS047597-13A1
2R01NS02351-06	5R01HL126117-05	CHE-1708868	S2014000026205// 5R01MD007223-03
2R01NS086859-06	5R01HL126920-04	CHE-1766537	S4256-PO176307//5R03HD092676-02
2R44AR069416-02	5R01HL127491-03	CHE-1807278	S428657/W911NF1910245
2R4EY026466-001//2R44EY026466-02	5R01HL127646-04	CHE-1808502	S4485 PO216076/1U01CA202177-04
2R56AR042309-22A1	5R01HL128075-04	CHE-1808590	S5110000403137//R01HL125089
2R56C0118134-06	5R01HL128194-04	CHE-1836392	S5110000403137//R01HL117006-01A1
2RF1AG011739-15	5R01HL130502-04	CHE-1847948	SA17-0018-SO01/1618244
2T32GM008061-36	5R01HL131606-02 REVISED	CHE-1856619	salosAgmt 03/27/18//2R44AR065866-02A1
2T32GM008449-26	5R01HL131745-03	CHE-1905270	SC160072/W81XWH-17-1-0340
2T32GM105538-07	5R01HL131771-03	CL3902, CC81038//90RT5027-01-00	SES-1823709
2T32HL069771-16-1-0381	5R01HL132978-03	CL2531/1R01HD083314	SES-1154101003
2T32HL076139-16	5R01HL133504-02 REVISED	CMMI 1762757	SES-1456984-003
2T32HL094293-11	5R01HL134375-03	CMMI 1148709	SES-1530608
2T32MH067564-16 REVISED	5R01HL134800-02	CMMI-1234491	SES-1530748
2T91HP21542-07-00	5R01HL135486-03	CMMI-1265786	SES-1628057
2TL1TR01423-05A1	5R01HL136942-03	CMMI-1335014	SES-1628126
2U01DK08242-11	5R01HL138578-03	CMMI-1351534-005	SES-1637182
2UL1TR001422-05A1	5R01HL138982-02	CMMI-1361942	SES-1702602
3(GG012114-01)//5R01NR015737-04	5R01HL139798-02 REVISED	CMMI-1400169	SES-1703056
3001001876//7R01CA172669-005	5R01HL139812-02	CMMI-1400618	SES-1730079
300358571 // 1R01CA173745-06 03	5R01HL140061-02	CMMI-1405231	SES-1730483
300365578//5R01EB00910-09	5R01HL140580-03	CMMI-1434894	SES-1822286
3003700315 // DMR-1509033 Amd 2	5R01HL140938-02	CMMI-1434876	SES-1823696
3003719520 // AID-OAA-A-15-00075 02	5R01HL140973-02	CMMI-1435358	SES-1824463
3003962014/W81XWH-15-1-0661	5R01HL141459-02	CMMI-1435950	SES-1826891
3004163905/5R01A1119446	5R01HL144129-02	CMMI-1436297	SES-1840443
3004650350/5R01MD011570-04	5R01HS020270-06	CMMI-1436574	SES-1851883
3004704106/RO1MH110524	5R01HS024516-04	CMMI-1436658	SES-1919494
310227//5R01A1125244-02	5R01HS024712-04	CMMI-1462633 001	SMA-1747623
310227//5R01A1125244-04	5R01HS024930-04 REVISED	CMMI-1462650	SMA-1829344
3-10829-1255-01//80NSCS18K604	5R01HS024945-02	CMMI-1463411	SP00012129-01//1R01GM115763
310904//5R01HL127700-04	5R01LM011297-07	CMMI-1463459	SP0013463-01//2R01GM104498-06A1
31103A Amd. 7//5U19AI103461-06	5R01LM011962-04	CMMI-1463489	SP0206903
3115-0866 // F49550-14-1-0381	5R01MD009217-06	CMMI-1536503	SP031902-80041063/SD43TW010134-03
3200001251-16-257//5U01AG050636-03	5R01MD009561-04 REVISED	CMMI-1537060	SPC-000246//5R01NS084288-05
3200002345-19-178//R01A1AG061898	5R01MD010440-03	CMMI-1537641	SPC-000247//5R01DA040756-03
3210000758-18-175//5U48DP005014-04	5R01MD011749-03	CMMI-1562941 001	SPC-000866//5R01A12872-04
322801NWU/W81XWH-17-1-0697	5R01MD012236-02	CMMI-1562944	SPC-001063//7R01CA206456-04
330161-18110-7943-Amd 5//SMA-10041707	5R01MD013609-02	CMMI-1634982	SPN pending RES513371//2R01NS082007-07
333-2399/1818574	5R01MH020709-06	CMMI-1646592-002	Sub# 6 22223003/1U01HL117006-01A1
333-2440// CHE-1832256	5R01MH078064-13	CMMI-1662233	SUB 5.22.17//5U01HL130163-02
3403-019297 // R324A150094-18 Amd 3	5R01MH097216-08	CMMI-1662345	Sub No. 4471 C8B1932/W81XWH-15-2-0035
34-2009-2031-001//5R01HD085887-04	5R01MH099114-07	CMMI-1662605	Sub# N005259901/R8U54GM119023-03
36-5360-2141-101//5R01AG037120-04	5R01MH100482-05	CMMI-1663196	Sub#2002749092/5U10EY024527-04
3D2EY027983-01-51	5R01MH101297-05 REVISED	CMMI-1727400	Sub#300356891/5R01EB013198-09 REVISED
3OT2DD026557-01S1	5R01MH106512-05	CMMI-1744002	SUB 110009/SUM1A1068836-12
3P01GM096971-05S1	5R01MH107182-05	CMMI-1742849	SUB00000358//2R01HD030588-24 Amd 4
3P0A0G013854-23S2	5R01MH107652-04	CMMI-1743886	SUB00000078 Amd. 5 // W911NF1510421

NORTHWESTERN UNIVERSITY
 Schedule of Findings and Questioned Costs
 Table of Award Numbers
 Year ended August 31, 2019

Name of Federal Program or Cluster (CFDA #) Research and Development Cluster (Various): Award Number	Award Number	Award Number	Award Number
3P30CA060553-2251	5R01MH108837-04	CMMI-1748049	SUB00001474//R01A1128924-01A1
3P30CA060553-2454	5R01MH109466-03 REVISED	CMMI-1762035-001	SUB00001667//B0NSSC18K0511
3P50HD044405-1551	5R01MH110556-03	CMMI-1763035	SUB00001814//2019-67023-29347
3P50NS047085-1551	5R01MH110626-04	CMMI-1763100	SUB00001824//1U2CE530167-01
3R01AG045571-05S1 REVISED	5R01MH111610-03	CMMI-1826353	SUB00001828//R01R1HD091046-01A1
3R01AG047416-05S1	5R01MH111790-04	CMMI-1829101	SUB00001921//U54AR052646
3R01AG049002-05S1	5R01MH112545-03	CMMI-1841303	SUB00002028//W911NF1910016
3R01AG056258-07S1	5R01MH113189-04	CMMI-1841584	SUBK00009305//R01DK120330
3R01CA206456-03S1	5R01MH115265-02	CMMI-1846817	SUBK00004622//SR01HD088638-03
3R01CA214035-18S1	5R01MH117111-02	CMMI-1847537	SUBK00012466//R21HD097663-01
3R01CA218659-02S1	5R01MH117598-02	CMMI-1848613	T652681//AU01NS038455-15
3R01DC012289-08S1	5R01MH118213-02	CMMI-1907463	T82454//R01AG054079-01
3R01DC016877-01A1S1	5R01NR015444-04	CNS-1314620	TM7-18007X//NAS8-03060
3R01GM099970-09S1	5R01NS034696-22	CNS-1328991	TUL-HSC-556640-18/19/5U01HD052104-14
3R01GM11097-45S1	5R01NS047726-14	CNS-1408790	U10CA180820-01-NUVU2
3R01GM124029-02S1	5R01NS053603-12 REVISED	CNS-1419138	U10CA180820-01-NUVU3
3R01HL128075-05S1	5R01NS053792-17	CNS-1441695	UAB FUND#114959//R01DK108438-02
3R01HL136676-02S1	5R01NS057499-12	CNS-1526052	UCHC7-108267241//U01MH113390-01A1
3R21AG055954-02S1	5R01NS058667-06	CNS-1615837	UFDSP00010414 // R01GM107227-03
3R21EB022291-02S1	5R01NS061963-10	CNS-1619317	UFDSP00011459//R01CA200867
3R21EB024315-02S1	5R01NS061963-12	CNS-1651695 001	UFDSP00011851//U01AG050499
3T2CA070085-20S1	5R01NS064135-09 REVISED	CNS-1701921	UFDSP00011909//U54AR052646
3T2DK101363-05S1 REVISED	5R01NS067299-10	CNS-1718670	UFDSP00011947//U01NS102038
3T2HD007418-25S1	5R01NS069777-08	CNS-1743324-003	UFDSP00012258//U54AR052646
3T2HS000078-20S1	5R01NS072301-09	CNS-1763743 001	UFDSP00012271 //R01GM127433
3U01AD036939-05S2	5R01NS076054-09	CNS-1810582	UFDSP00012252//U54AR052646
3U01HG008673-04S1	5R01NS078287-04	CNS-1816870	UJ-STAMINA-NW04//D43TW010130-04
3U01HL14344-05S1	5R01NS080598-05 REVISED	CNS-1821362	UNIV59587//SR01DK050203-20
3U2CAG057441-03S1	5R01NS080619-05	CNS-1831685	UNIV60403//U01DC017135-01
3U2CAG096726-02S1	5R01NS082351-05	CNS-1838916	USTTBN//R01A1110396-02-2016
3U2CA186878-04S1	5R01NS084899-05	CNS-1839511	UWSC10113/83830001-0
3UG1HD040512-20S1	5R01NS085002-05 REVISED	CNS-1846447	UWSC7278//SU01AG016976-20
3UG3ES029073-02S1	5R01NS085161-05	CNS-1850496	UWSC8225//BP02840//SR01NS085331-05
3UH3TR01207-05S1	5R01NS085770-05	CNS-1915847	UWSC8533//R01HL127659-01
3JL1TR01422-04S1	5R01NS086859-05 REVISED	CNVA00050794//129001-6//SR01AG034852-09	UWSC8636//R01FD033704-03A1
4(GG011659-01)//SR01HL139837-02	5R01NS086945-05	com//UHQF28715-02//BLU1QHP287150101	UWSC9358//SR01HL096875-07
4(GG012173-04)//SR01HS024538-04	5R01NS086973-05	CONTRACT PO #42045/236320/50105365//U62PS006021	UJMC 57993//SR01CA202936-05
401-20-25A//DE-EE0008492	5R01NS087990-05 REVISED	CWC-031//PHY-1622510	UJMC 59440//SR01HL133860-03
410676 GR40751-NU4424006/R01CA10594	5R01NS089313-05 REVISED	DAIT-SACCC-03-NW//SUM2A117870-04	UJMC60724//SUZC00023196-02 REVISED
416496-G//W81XWH-14-1-0322	5R01NS090993-05	DBI-1256198	UJMC62778//SU01A132004-02
417315//N00014-18-1-2370 AMD 2	5R01NS092823-05	DBI-1753793	UJMC64678//TR01MH106511-03
4182//W81XWH-17-2-0072 / PO 930293	5R01NS092950-04	DD7-18096A // NAS8-03060	UJMC65034//SUZC00023196-02
4500002864//ECCS-1842692	5R01NS093079-05	DD8-19100X//NAS8-03060	UJMC66624//ZU01HG008672-04S1
4500002877 // 1R25GM121257 - 01A1	5R01NS093585-05	DD8-19101A//NAS8-03060	UJMC73418//R18HS026931-01A1
4834, PO 963971//HU0001-18-2-0032	5R01NS093843-05	DE-AR000702	W000941480//R01E026817-01A1
4K08K0959292-05	5R01NS093903-04	DE-AR0001077	W81XWH-104-0536
4K12HD073945-05	5R01NS094011-04 REVISED	DE-ED008077	W81XWH-13-2-0100
4K24A104831-05	5R01NS094748-05	DE-EE0008079-0001-0002-0003	W81XWH-14-2-0193
4R00CA207865-03	5R01NS095251-04	DE-EE0008089-0001-0002-0003	W81XWH-15-1-0214
4R01AI040310-19	5R01NS095634-05	DE-EE0008354	W81XWH-15-1-0215
4R01AR054155-09	5R01NS095642-04	DE-EE0008437-0001	W81XWH-15-1-0335
4R01AR062110-05	5R01NS096092-02	DE-FG02-06ER45810/0020	W81XWH-15-1-0406
4R01CA122151-10	5R01NS096240-04	DE-FG02-01ER45945 0018	W81XWH-15-1-0534
4R01CA159811-05	5R01NS096376-03	DE-FG02-03ER15457 0017	W81XWH-15-1-0708
4R01CA164041-05	5R01NS096746-05	DE-FG02-05ER46248-0015	W81XWH-16-1-0021
4R01CA164714-05	5R01NS097851-04	DE-FG02-06ER46346 0013	W81XWH-16-1-0186
4R01CA165309-05	5R01NS097901-04	DE-FG02-08ER15967 0012	W81XWH-16-1-0169
4R01CA167041-05	5R01NS098509-04	DE-FG02-08ER46539-0010	W81XWH-16-1-0375
4R01CA168292-05	5R01NS099064-03	DE-FG02-87ER13808-0035	W81XWH-16-1-0376
4R01DA033773-05	5R01NS099210-04	DE-FG02-87ER25047/0030	W81XWH-16-1-0485
4R01DE022746-05 REVISED	5R01NS099334-03	DE-FG02-87ER40344	W81XWH-16-1-0554
4R01DK097364-05	5R01NS099623-04	DE-FG02-99ER14999-0019	W81XWH-16-1-0733
4R01DK101329-05	5R01NS099638-04	DE-FG02-99ER45782-0022	W81XWH-16-1-0763
4R01EB005772-08	5R01NS100785-03	DE-NA0002520	W81XWH-17-1-0086
4R01EB017129-04	5R01NS102669-03	DE-NE0008409-0001	W81XWH-17-1-0141
4R01GM080484-09	5R01NS105502-02	DE-SC0000989 0009	W81XWH-17-1-0230
4R01GM105947-04	5R01NS106379-02	DE-SC00010590009	W81XWH-17-1-0357
4R01HD039343-15	5R01NS106955-02	DE-SC0004752-0010	W81XWH-17-1-0362
4R01HL108723-05	5R01NS107539-02	DE-SC0007456	W81XWH-17-1-0405
4R01HL116577-04	5R01NS109552-02	DE-SC0010265 0004	W81XWH-17-1-0406
4R01MH091131-05	5R01OH010469-04	DE-SC0010594 0003	W81XWH-17-1-0411
4R01MH095753-05	5R03AG058113-02	DE-SC0012130-0004	W81XWH-17-1-0426
4R01NR014182-05	5R03A1125813-02	DE-SC0012151 0004	W81XWH-17-1-0578
4R3NS101150-03	5R03A1126090-02	DE-SC0014330 0002	W81XWH-17-1-0608
4T2AR060710-05	5R03A1137674-02	DE-SC0014424-0004	W81XWH-17-1-0642
4T32MH067564-15	5R03CA194643-02 REVISED	DE-SC0014520-0003	W81XWH-17-1-0679
4U01AG043415-05	5R03DC013841-03	DE-SC0015910 0003	W81XWH1810053
4U01DK094830-05 REVISED	5R03DC014553-03 REVISED	DE-SC0015973-0003	W81XWH1810244
4U01DK097779-06	5R03DC014565-03	DE-SC0016284 0003	W81XWH1810257
4U10HL119992-04	5R03DK109243-02 REVISED	DE-SC0016965	W81XWH1810479
4U19A106683-05	5R03DK116012-02	DE-SC0017615	W81XWH1810594
4U44NS090616-02	5R03DK116663-02	DE-SC0018092	W81XWH1810748
5 C PMP161134-04-00	5R03EB023344-02	DE-SC0018093	W81XWH1810752
5(GG010919-05)//SR01HL077612-12	5R03HD087111-02	DE-SC0018249-P0002	W81XWH1810777
5(GG011046-01)//R01HL130506-03	5R03HL144902-02	DE-SC0019337	W81XWH1810778
5001370-5500001215//R21NS110355-01	5R03HL145223-02	DE-SC0019339	W81XWH1810780
5002110-54 // 5 RRC08098402-08-00	5R03HS025267-02	DE-SC0019342 0001	W81XWH1810786
50042-324-NU001//US3A1133676-0	5R03MD011628-02	DE-SC0019356	W81XWH1810824
5008752-SERV//4U01DK098245-04	5R03MH107834-02	DE-SC0019358//18SC503797	W81XWH1810825
5012375G138-004//NNX16A048G	5R13HD063248-09	DE-SC0020176	W81XWH1810879
5015643-SERV//ZU01DK098245-06	5R18DK110741-03	DGE - 1842165	W81XWH1810920
502648-78050-01//CNS-1823244	5R18HS023459-03	DGE-1011618	W911NF-11-1-0390 P00011
505165//SR01CA46267-04	5R18HS023921-03	DGE-1324585 009	W911NF-14-1-0168/P00010
50612-324-NUU1-AI034983	5R18HS023599-02	DGE-1450006-004	W911NF-15-1-0017 P00006
50615-324-NUU2-AI034993//SU01A034993	5R18HS025649-03	DGE-1723805	W911NF-15-1-0272-P00003
5065-NU//R01MH112625	5R18HS026172-02	DMR-0907068	W911NF-16-1-0138 P00006
			W911NF-16-1-0169 P00004

NORTHWESTERN UNIVERSITY
 Schedule of Findings and Questioned Costs
 Table of Award Numbers
 Year ended August 31, 2019

**Name of Federal Program or Cluster (CFDA #)
 Research and Development Cluster (Various):
 Award Number**

50811-324-NW/U/1U01HL146245-01	5R21AG050897-02 REVISED	DMR-1121262 Amd 009	W911NF-16-1-0372
50961/5R01DK107572-04	5R21AG057383-02	DMR-1333335 002	W911NF-16-1-0384
5-10742-01/R01GM106023	5R21AG060203-02	DMR-1351959 004	W911NF-16-1-0410 P00005
5112051/1R21HD095448-01 REVISED	5R21AG060267-02	DMR-1408901-003	W911NF-16-1-0464-P00005
5112424/5R01DK116028-02	5R21AI111018-02	DMR-1454688-005	W911NF-16-1-0584 P00008
5112858/5UM1DK100867-06 REVISED	5R21AI111913-02	DMR-1505103 004	W911NF-17-1-0326 P00002
5113027/5UM1DK100867-06 REVISED	5R21AI121836-02	DMR-1505849	W911NF-17-1-0430 P00001
5113277/1R01HL143885-01A1	5R21AI123462-02	DMR-1506925-002	W911NF-17-2-0054-P00002
5115400/2U01DK100867-07	5R21AI129167-02 REVISED	DMR-1507101 001	W911NF-18-1-0006
5204-NU-NSF-0620-1// DMR-1420620	5R21AI131087-02	DMR-1507810-001	W911NF-18-1-0035 P00002
537/151	5R21AI132848-02	DMR-1508399-002	W911NF-18-1-0050
5-40708/5US4E8020404-05	5R21AI133984-02	DMR-1508730-003	W911NF-18-1-0129-P00002
543891-78001/DE-AR0001073	5R21AI135827-02	DMR-1508731/003	W911NF-18-1-0200-P00002
5-53557/5R01AI114730-04	5R21AI140029-02 REVISED	DMR-1539724	W911NF1810394
55368070 // R01HD080952-05 Amd. 003	5R21AR069867-03 REVISED	DMR-1600837	W911NF1810402
5589012/5R01AI114897-05	5R21AR071705-02	DMR-1602542	W911NF1810429-P00003
55R01CA202983-03	5R21AR073371-02	DMR-1608218	W911NF-18-2-0074
564595/5R01HD076279-05	5R21AR074292-02	DMR-1608258	W911NF-19-1-0039-P00001
567734/5R01AG049757-03	5R21AR074523-02	DMR-1610367 002	W911NF-19-1-0136-P00001
567849/5R01CA197332-03	5R21CA202552-02 REVISED	DMR-1610796-001	W911NF1910154
5688-NU-EARPA-0626//DE-AR0000626	5R21CA208329-02	DMR-1611076 No. 001	W911NF-19-1-0298
570229/5R01HL134015-03	5R21CA209345-02	DMR-1611308	W911NF1910335
5709-NU-DOE-2375 // DE-SC00012375	5R21CA210904-02 REVISED	DMR-1611341	W911NF1910361
571000375 Amd 3 // DE-SC0001299	5R21CA220625-02	DMR-1612876	W911NF1910383
572177 // 1R21AG053638-01A1	5R21CA226671-02	DMR-1629383	W911NF1920092
573341/7-R01-MH-103910-06	5R21DA045507-02 REVISED	DMR-1708254	W911NF1920140
573503/7R01DC010014-10	5R21DC015880-04	DMR-1710104	W911NF-19-2-0169
573689 // 8N5SC19K0481	5R21DC016759-02	DMR-1710491	WFUHS441082 CF-12//W81XWH-14-2-0004
5740-01/UE28HA30791-02-01	5R21DC017210-02	DMR-1720139	WFUHS441489/R01HL127028
574237/5U01AG052943-03	5R21DK105865-02	DMR-1729016	WFUHS441012 SR-02//W81XWH-13-2-0054
574598/5R01HL121510-04	5R21DK108104-02 REVISED	DMR-1729303	WU-16-153-MOD-5//5R01NS091439-04
575155/5U54AR057319-16	5R21ES026776-02	DMR-1729487-001	WU-17-444-MOD-2//5R01MH104030-03
578/151	5R21EY027502-02 REVISED	DMR-1747776	WU-19-261//U30HL136325
5841-NU-NASA-F03G/NNX15AF03G	5R21EY029516-02	DMR-1751308-001	WU-19-11-MOD-1//5R01MH113883-02
5875-NU-DHHS-7809//R01HL137809-01A1	5R21GM127919-02	DMR-1756245	WU-19-170 // W81XWH1810710
5897-NU//R30501400045-03	5R21HD082781-02	DMR-1801632-001	WU-19-384//1R21AG063370-01
5988-NU 02 // DGE-1437953	5R21HD092671-02	DMR-1806912	WU-20-123//R21MH115088-02
5CPMP181168-02-00	5R21HD094073-02	DMR-1807234	WU-20-280//R01MH107540-05
5D43TW009374-05	5R21HD094271-02	DMR-1822422	WU-HT-11-05-MOD-11 Amd 11 // DE-SC0001035
5D43TW009575-05 REVISED	5R21HL129930-02	DMR-1838507	Yale 2.23.2017//R01HL125918
5D43TW009608-07	5R21HL130969-02	DMR-1904385	Yanni Yu IPA FY19
5D43TW010350-04			

**SUMMARY SCHEDULE OF PRIOR AUDIT FINDINGS
NORTHWESTERN UNIVERSITY
For Year Ended August 31, 2019**

2018-001 Property Management

Corrective Action Plan:

Management notes the property records were not updated for the disposals tested due to the departments not communicating the updates in a timely manner. In response to this finding, Management shall reiterate proper procedures to department Unit Representatives regarding the disposition of equipment, including timely submission of disposal requests.

Expected Implementation Date: August 31, 2019

Fully Corrected	Partially Corrected	Not Corrected	Change in Plan	No Further Action/Other
	X			

Explanation (if required): This is a repeat finding for FY19. Management shall reiterate proper procedures to department Unit Representatives regarding the disposition of equipment, including timely submission of disposal requests and procedures for replacement of equipment under warranty.

2018-002 Subrecipient Monitoring

Corrective Action Plan:

Management notes the Standard Operating Procedures should have better reflected the prioritization needed to complete the reviews in a timely and compliant manner. In response to this finding, management has implemented necessary steps to ensure that the desk reviews, and issuance of management decisions, if necessary, will be made within six months of the audit report acceptance date from the Federal Audit Clearinghouse (FAC).

Expected Implementation Date: May 31, 2019

Fully Corrected	Partially Corrected	Not Corrected	Change in Plan	No Further Action/Other
X				

Explanation (if required): N/A

Northwestern

FINANCIAL OPERATIONS

Federal Award Findings and Questions Costs Corrective Action Plan Year Ended August 31, 2019

Finding No. 2019-001: Inadequate Process for Updating Property Management Records

CFDA Numbers: Various

Program: Research and Development Cluster

Corrective Action: In fiscal year 2020, Accounting Services shall reiterate proper procedures to department Unit Representatives regarding the disposition of equipment, including timely submission of disposal requests and procedures for replacement of equipment under warranty. Accounting Services will also continue to perform its own audit of the re-inventories prepared by Unit Representatives as well, gearing its sampling towards higher risk items. Accounting Services shall also stress the importance of affixing property tags on all capital equipment, ensuring the tag numbers match property records, and the process for requesting tag replacements when necessary.

With regards to the 2 equipment items entered into the property records twice, Management performed an analysis of the University's entire equipment inventory and the related control environment. No duplicates were identified after fiscal year 2014 (detective and preventative controls implemented in fiscal years 2014 and 2018, respectively). The financial statement impact is not material from an annual or cumulative impact perspective.

Contact Person: Nicole Van Laan

Expected Implementation: August 31, 2020