

# Northwestern University

Reports Required by Government  
Auditing Standards and OMB 2 CFR 200  
Uniform Administrative Requirements,  
Cost Principles, and Audit Requirements  
for the Year Ended August 31, 2016  
EIN 36-2167817

**NORTHWESTERN UNIVERSITY  
TABLE OF CONTENTS**

---

**CONSOLIDATED FINANCIAL STATEMENTS FOR THE YEAR ENDED AUGUST 31, 2016**

Report of Independent Auditors	Page 3
Northwestern University Financial Statements	Page 5

**FEDERAL FINANCIAL ASSISTANCE PROGRAMS FOR THE YEAR ENDED AUGUST 31, 2016**

Schedule of Expenditures of Federal Awards	Page 31
Notes to the Schedule of Expenditures of Federal Awards	Page 139

**SCHEDULE OF FINDINGS AND QUESTIONED COSTS FOR THE YEAR ENDED AUGUST 31, 2016**

Report of Independent Auditors on Internal Control Over Financial Reporting and on Compliance and Other Matters Based on an Audit of Financial Statements Performed in Accordance with <i>Government Auditing Standards</i>	Page 142
Report of Independent Auditors on Compliance with Requirements That Could Have a Direct and Material Effect on Each Major Program and on Internal Control Over Compliance in Accordance with the OMB Uniform Guidance	Page 144
Schedule of Findings and Questioned Costs	Page 146
Summary Schedule of Prior Audit Findings	Page 150
Management's Views and Corrective Action Plan	Page 152



## **Report of Independent Auditors**

To the Board of Trustees of 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, 2016, and 2015, and the related consolidated statements of activities for the year ended August 31, 2016, and of cash flows for the years ended August 31, 2016 and 2015, and the related notes to the financial statements.

### ***Management's Responsibility for the Consolidated Financial Statements***

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

### ***Auditors' Responsibility***

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

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

### ***Opinion***

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of Northwestern University as of August 31, 2016 and 2015, and the changes in their net assets for the year ended August 31, 2016 and its cash flows for the years ended



August 31, 2016 and 2015 in accordance with accounting principles generally accepted in the United States of America.

***Other Matters***

We have previously audited the consolidated statement of financial position as of August 31, 2015, and the consolidated statements of activities and of cash flows for the year then ended (not presented herein), and in our report dated January 22, 2016, we expressed an unmodified opinion on those consolidated financial statements. In our opinion, the information set forth in the accompanying summarized financial information as of August 31, 2015, and for the year then ended is consistent, in all material respects, with the audited consolidated financial statements from which it has been derived.

***Other Information***

Our audit was conducted for the purpose of forming an opinion on the consolidated financial statements as a whole. The accompanying schedule of expenditures of federal awards for the year ended August 31, 2016 is presented for purposes of additional analysis as required by Title 2 U.S. *Code of Federal Regulations Part 200, Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards* (Uniform Guidance) and is not a required part of the consolidated financial statements. 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 schedule of expenditures of federal awards is fairly stated, in all material respects, in relation to the consolidated financial statements as a whole.

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

In accordance with *Government Auditing Standards*, we have also issued our report dated February 2, 2017 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 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 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.

A handwritten signature in cursive script that reads "PricewaterhouseCoopers LLP".

Chicago, Illinois  
February 2, 2017

# Consolidated Statements of Financial Position

As of August 31, 2016, and August 31, 2015

<i>(in thousands of dollars)</i>	2016	2015
<b>Assets</b>		
Cash and cash equivalents	\$215,375	\$277,129
Accounts receivable, <i>net</i>	326,446	282,926
Notes receivable, <i>net</i>	156,428	146,760
Contributions receivable, <i>net</i>	263,423	169,018
Investments	10,312,782	10,497,764
Land, buildings, and equipment, <i>net</i>	2,368,598	2,043,447
Other assets	17,125	18,731
<b>Total assets</b>	<b>\$13,660,177</b>	<b>\$13,435,775</b>
<b>Liabilities</b>		
Accounts payable and accrued expenses	\$265,979	\$223,461
Deferred revenue	289,083	270,962
Deposits payable and actuarial liability of annuities payable	140,836	123,770
Government advances for student loans	37,766	38,830
Asset retirement obligations	2,940	121,035
Bonds, notes, and other debt payable	1,909,164	1,864,739
<b>Total liabilities</b>	<b>\$2,645,768</b>	<b>\$2,642,797</b>
<b>Net assets</b>		
Unrestricted	\$6,986,925	\$6,822,964
Temporarily restricted	2,472,172	2,555,415
Permanently restricted	1,555,312	1,414,599
<b>Total net assets</b>	<b>\$11,014,409</b>	<b>\$10,792,978</b>
<b>Total liabilities and net assets</b>	<b>\$13,660,177</b>	<b>\$13,435,775</b>

See Notes to the Consolidated Financial Statements, beginning on page 8.

# Consolidated Statement of Activities

For the fiscal year ended August 31, 2016, and summarized financial information for the fiscal year ended August 31, 2015

<i>(in thousands of dollars)</i>	2016			2015	
<b>Operating revenues</b>	<b>Unrestricted</b>	<b>Temporarily restricted</b>	<b>Permanently restricted</b>	<b>Total</b>	<b>Total</b>
Tuition and fees	\$963,001			\$963,001	\$911,130
(less scholarships and fellowships)	(381,713)			(381,713)	(343,380)
Net tuition and fees	581,288			581,288	567,750
Auxiliary services	79,036			79,036	77,226
Grants and contracts	595,774			595,774	565,589
Private gifts	200,892			200,892	202,428
Investment return designated for operations	357,775	\$151,234		509,009	473,875
Sales and services	161,615			161,615	154,686
Professional fees	31,345			31,345	24,150
Royalties and trademarks	41,236			41,236	77,486
Other income	793			793	1,227
<b>Total operating revenues</b>	<b>2,049,754</b>	<b>151,234</b>	<b>—</b>	<b>2,200,988</b>	<b>2,144,417</b>
<b>Net assets released from restrictions</b>	<b>219,721</b>	<b>(219,721)</b>	<b>—</b>	<b>—</b>	<b>—</b>
<b>Total operating revenues and other additions (reductions)</b>	<b>2,269,475</b>	<b>(68,487)</b>	<b>—</b>	<b>2,200,988</b>	<b>2,144,417</b>
<b>Operating expenses</b>					
Salaries, wages, and benefits	1,242,279			1,242,279	1,147,813
Services, supplies, travel, and other	554,631			554,631	538,037
Depreciation and ARO accretion	123,225			123,225	117,831
Operations of plant, rent, and equipment	109,283			109,283	90,700
Utilities and communications	55,210			55,210	53,969
Royalty and trademark fees	41,278			41,278	47,889
Interest on indebtedness	40,248			40,248	37,094
<b>Total operating expenses</b>	<b>2,166,154</b>	<b>—</b>	<b>—</b>	<b>2,166,154</b>	<b>2,033,333</b>
<b>Excess (deficit) of operating revenues over expenses</b>	<b>103,321</b>	<b>(68,487)</b>	<b>—</b>	<b>34,834</b>	<b>111,084</b>
<b>Nonoperating revenues and expenses</b>					
Private gifts and grants for buildings and equipment	1,597			1,597	10,845
Restricted private gifts		82,903	\$142,131	225,034	287,972
Net gain (loss) on annuity obligations		4,756	(1,418)	3,338	(9,302)
Investment returns, reduced by operating distribution	(10,073)	(102,415)		(112,488)	(274,116)
Change in value of derivative instruments	(1,557)			(1,557)	(1,552)
Other nonoperating net revenues	70,673			70,673	4,301
<b>Excess (deficit) of nonoperating revenues over expenses</b>	<b>60,640</b>	<b>(14,756)</b>	<b>140,713</b>	<b>186,597</b>	<b>18,148</b>
<b>Change in net assets</b>	<b>163,961</b>	<b>(83,243)</b>	<b>140,713</b>	<b>221,431</b>	<b>129,232</b>
<b>Beginning net assets</b>	<b>6,822,964</b>	<b>2,555,415</b>	<b>1,414,599</b>	<b>10,792,978</b>	<b>10,663,746</b>
<b>Ending net assets</b>	<b>\$6,986,925</b>	<b>\$2,472,172</b>	<b>\$1,555,312</b>	<b>\$11,014,409</b>	<b>\$10,792,978</b>

See Notes to the Consolidated Financial Statements, beginning on page 8.

# Consolidated Statements of Cash Flows

For the fiscal years ended August 31, 2016, and August 31, 2015

<i>(in thousands of dollars)</i>	2016	2015
<b>Cash flows from operating activities</b>		
Change in net assets	\$221,431	\$129,232
Adjustments to reconcile change in net assets to net cash provided by (used in) operating activities		
Depreciation	117,398	112,083
Accretion for asset retirement obligations	5,827	5,748
Asset retirement obligations settled	(2,780)	(172)
Change in estimated asset retirement obligations, <i>net</i>	(71,851)	—
Net losses on retirements and sales of buildings and equipment	6	1,527
Net amortization of discounts (and accretion) of premiums on bonds payable	(1,040)	(1,063)
Allowance for student loans receivable	667	527
Net realized and unrealized gains on investments	(343,820)	(148,346)
Gift of contributed securities	(49,919)	(139,961)
Proceeds from sale of contributed securities	49,919	39,057
Change in value of derivative instruments	1,557	1,552
Private gifts and grants for buildings and equipment	(1,597)	(10,845)
Changes in assets and liabilities		
Accounts receivable	(43,520)	(11,309)
Contributions receivable	(94,405)	(69,055)
Other assets	1,710	(648)
Accounts payable and accrued expenses	64,049	(4,454)
Deferred revenue	18,121	4,672
Government advances for student loans	(1,064)	55
<b>Net cash provided by (used in) operating activities</b>	<b>(129,311)</b>	<b>(91,400)</b>
<b>Cash flows from investing activities</b>		
Purchases of investments	(1,666,214)	(2,372,293)
Proceeds from sales of investments	2,203,250	2,138,701
Acquisitions of land, buildings, and equipment	(515,140)	(307,625)
Proceeds from sale of buildings or equipment	102	1,047
Student loans disbursed	(25,385)	(26,391)
Principal collected on student loans	29,892	28,722
Other	(23,076)	(7,478)
<b>Net cash provided by (used in) investing activities</b>	<b>3,429</b>	<b>(545,317)</b>
<b>Cash flows from financing activities</b>		
Proceeds from issuance of bonds payable and notes payable	50,000	686,017
Refunding of revenue bonds payable	—	(149,164)
Principal payments on notes, bonds, and other debt payable	(4,535)	(3,805)
Proceeds from private gifts and grants for buildings and equipment	1,597	10,845
Increase in deposits payable and annuities payable	17,066	3,795
<b>Net cash provided by (used in) financing activities</b>	<b>64,128</b>	<b>547,688</b>
<b>Decrease in cash and cash equivalents</b>	<b>(61,754)</b>	<b>(89,029)</b>
<b>Cash and cash equivalents at beginning of year</b>	<b>277,129</b>	<b>366,158</b>
<b>Cash and cash equivalents at end of year</b>	<b>\$215,375</b>	<b>\$277,129</b>
<b>Supplemental disclosure of cash flow information</b>		
Accrued liabilities for construction in progress	\$31,466	\$22,582
Capitalized interest	24,135	15,041
Cash paid for interest	66,480	46,867

See Notes to the Consolidated Financial Statements, beginning on page 8.

# Notes to the Consolidated Financial Statements

For the fiscal years ended August 31, 2016, and August 31, 2015

## 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. Activities supporting its mission may be classified as either operating or nonoperating. Operating revenues include student tuition, research funding, investment return designated for operations, educational sales and services, private gifts, royalties, and auxiliary services. Operating expenses reflect support for all functions of the University. Nonoperating activities include unrealized gains and losses on investments, temporarily restricted gifts for building, and all permanently restricted endowment gifts.

### Basis of Accounting

#### General

The University maintains its accounts and prepares its consolidated financial statements on the accrual basis of accounting in conformity with generally accepted accounting principles in the United States of America (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 intercompany transactions and accounts have been eliminated.

#### Net Asset Classifications

Net assets and the flow of those net assets are classified in three categories according to 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 board-designated endowment funds, see note 9.

The category *Permanently Restricted Net Assets* applies to gifts, trusts, and pledges whose donors required that the principal be held in perpetuity and

that only the income be available for stipulated program operations.

The category *Temporarily Restricted Net Assets* includes gifts for which donor-imposed restrictions have not been met (these are primarily future capital projects), as well as trust activity and pledges receivable whose ultimate use is not permanently restricted. In addition, the excess of the fair value over the historical cost of permanently restricted endowments is classified as temporarily restricted net assets until appropriated for expenditure.

The category *Unrestricted Net Assets* describes funds that are legally available for any purpose and have no donor-imposed restrictions. All revenues, expenses, gains, and losses are classified as unrestricted net assets unless they are changes in temporarily or permanently restricted net assets. Net unrealized losses on permanently restricted endowment funds for which the historical cost exceeds fair value are recorded as a reduction to unrestricted net assets.

Revenue from temporarily restricted sources is reclassified as unrestricted revenue when the circumstances of the restriction have been fulfilled. Donor-restricted revenues whose restrictions are met within the same fiscal year are reported as unrestricted revenue. The expiration of a donor-imposed restriction on a contribution is recognized in the period in which the restriction expires. All expenditures are reported in the unrestricted class of net assets, since the use of restricted contributions in accordance with the donor's stipulations causes the release of the restriction. Donor-restricted purposes include instruction, research, library collections, scholarship and awards, and building construction.

### Fair Value Measurements

The University makes fair value measurements and enhanced disclosures about fair value measurements as required by the Fair Value Measurements and Disclosures Topic of the FASB ASC. For further discussion, see notes 4 and 8.

### 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 that convert readily to cash and carry little risk of change in value at maturity due to interest-rate

changes; maturities of the investments are three months or less at the date of purchase.

### Contributions

Contributions received, including unconditional promises to give (pledges), are recognized by the University as revenues at their fair values. Private gifts, including unconditional promises to give, are recognized as revenues in the period received. Conditional promises to give are not included in revenue until the conditions are substantially met.

### Investments

Investments in securities and 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; 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 fair value hierarchy is based on three levels of inputs, of which the first two are considered observable and the last unobservable, that may be used to measure fair value. The following describes this hierarchy and the primary valuation methodologies used by the University for financial instruments 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 term of the assets or liabilities. Inputs are 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.

A financial instrument'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 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. Investments that use NAV as a practical expedient for valuation purposes are shown separately from the valuation hierarchy. For further discussion, see note 4.

Equity securities with readily determinable fair values and debt securities 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. Certain fixed income 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 that do not have readily determined fair values, and of other investments that are generally less liquid, are based on valuation information received on the relevant entity 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. The fair values for these securities are classified as Level 3, reflecting significant unobservable inputs that are supported by little or no market inputs.

Investments in certain real assets and other investments are recorded at acquisition or construction cost, or at fair value as of donation date if received as a contribution. The University performs a periodic assessment of these assets for impairment by comparing the future cash flows expected from the asset to the carrying value of the asset. 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, 2016. 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 financial instruments 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. The interest-rate swaps classified within Level 3 have unobservable inputs with little or no market activity. For further discussion, see notes 4 and 8.

#### Fair Values of Financial Instruments Other Than Investments

The fair values of financial instruments other than investments are based on a variety of factors. In some

cases, fair values represent quoted market prices for identical or comparable instruments. In other cases, fair values have been estimated based on assumptions about the amount and timing of estimated future cash flows and assumed discount rates reflecting varying degrees of risk. Accordingly, the fair values may not represent actual values that could have been realized at year-end or that will be realized in the future.

#### 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. The allowance for student accounts receivable is based on an analysis of outstanding account balances and is calculated using percentages based on historical collection data applied to the outstanding accounts receivable balances. Accounts receivable deemed to be uncollectible are expensed 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 expensed at that time.

Management assesses the adequacy of the allowance for credit losses on a regular basis by performing ongoing analysis of the student loan portfolio. Factors considered are differing economic risks associated with each loan category, the financial condition of specific borrowers, the economic environment in which the borrowers operate, the level of delinquent loans, and other significant influences. Loans disbursed under federally guaranteed student loan programs have special provisions. Based on this evaluation and management judgment, an uncollectible percentage is calculated and applied to each category of student loan balances outstanding. Management considers the allowance for student loan portfolio credit losses to be prudent and reasonable.

#### Contributions Receivable

Contributions receivable arising from unconditional promises to give are carried net of an allowance for uncollectible pledges. Additionally, unconditional promises are presented at estimated fair value considering duration and collection risk. There were no significant conditional promises to give as of August 31, 2016, and August 31, 2015.

## Land, Buildings, and Equipment

The value of land, buildings, and equipment is recorded at cost or, if received as gifts, at fair value at the date of the 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 and land improvements, which are estimated to be up to 40 years; and of the leasehold improvements, which are estimated to be the shorter of the useful life or the lease term. The useful life of land is deemed indefinite and not depreciable.

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. In management's opinion, no impairment existed as of August 31, 2016.

## Charitable Remainder Trusts

Charitable remainder trusts are classified as permanently restricted net assets if, upon termination of the trust, the donor permanently restricts the remaining trust assets. If the remainder is not permanently restricted by the donor, the charitable remainder trust assets are recorded as temporarily restricted net assets.

## 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, 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 and postretirement medical and life insurance benefits are based on actuarial studies and management estimates. See notes 10 and 12 for additional discussion.

## Asset Retirement Obligations

The University records all known asset retirement obligations (ARO) for which the fair value of the liability can be reasonably estimated, including certain obligations relating to regulatory remediation. ARO covered include those for which an entity has a legal obligation to perform an asset retirement activity; however, the timing and/or method of settling the obligation are conditional on a future event that may or may not be within the control of the entity. The reserves for ARO are based on analyses of University assets, review of applicable regulatory and other guidance, and management estimates.

## Revenue Recognition

Revenues from tuition and fees are reported in the fiscal year in which they are earned, including pro-rata adjustments for educational programs crossing over fiscal years. Fiscal year 2017 fall-quarter tuition and fees, billed but not earned in fiscal year 2016, are reported as deferred revenue in fiscal year 2016. Similarly, fiscal year 2016 fall-quarter tuition and fees, billed but not earned in fiscal year 2015, are reported as deferred revenue in fiscal year 2015.

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. Grants and contracts revenue is recognized as expenses are incurred. Professional fees arise from faculty and department services provided to external institutions such as hospitals. Sales and services revenues represent fees for services and goods provided to external parties in the course of educational activities and also include revenues from the provision of physical plant services and goods to external institutions contiguous to the University campuses. Trademark and royalty revenues arise from licensing of innovative technologies, copyrights, and other intellectual property; these revenues are recognized in the fiscal year in which they are earned. Other income includes revenues not otherwise categorized that are also recognized in the fiscal year in which they are earned.

## Federal Grants and Contracts Revenue

The University receives funding or reimbursement from federal agencies. In addition, 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.

#### 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 income, 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 2012 through 2016.

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.

#### Uses of Estimates in the Preparation of Financial Statements

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

The University believes that the methods and assumptions used are appropriate.

#### Subsequent Events

The University has evaluated subsequent events in accordance with the FASB ASC Subsequent Event Topic through February 2, 2017, the date when financial statements were issued. The University did not identify any subsequent events to be disclosed.

#### Recent Accounting Pronouncements

In August 2016, the FASB issued Accounting Standards Update (ASU) 2016-14, "Not-for-Profit Entities: Presentation of Financial Statements of Not-for-Profit Entities," the first phase of improvements to financial reporting and presentation. The guidance addresses net asset classifications, and reporting and disclosures about liquidity, financial performance, expenses,

and cash flows. The standard is effective in fiscal year 2019 for the University, and its impact on policies, procedures, and the consolidated financial statements is under evaluation.

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 balance sheet and disclosing key information about leasing activities. The principal difference from previous guidance is that the lease assets and liabilities that arise from operating leases with terms greater than one year should be recognized in the statement of financial position. The standard is effective in fiscal year 2020 for the University, and its impact on policies, procedures, and the consolidated financial statements is under evaluation.

In January 2016, the FASB issued ASU 2016-01, "Financial Instruments—Overall: 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 2019 for the University, and its impact on policies, procedures, and the consolidated financial statements is under evaluation.

In May 2014, the FASB issued ASU 2014-09, "Revenue from Contracts with Customers," a new revenue recognition topic in the Codification. In August 2015, ASU 2015-14 was issued to defer the effective date of ASU 2014-09 for all entities for one year. Now effective in fiscal year 2019 for the University, it provides a principle-based framework to replace earlier industry-specific and rule-based revenue recognition standards. Under the new ASU, revenue is recognized at an amount that reflects consideration to which the entity expects to be entitled from another entity in exchange for contracted services or goods that are an output of its ordinary activities. This approach requires use of more judgments and estimates by management, as well as more disclosures to describe estimation methods, inputs, and assumptions used. The University is evaluating the impact of its implementation on policies, procedures, and the consolidated financial statements.

Summarized Comparative Information  
The financial statements include certain prior-year summarized comparative information in total but not by net asset class. Such information does not include sufficient detail to constitute a presentation in

conformity with GAAP. Accordingly, such information should be read in conjunction with the University's financial statements for the year ended August 31, 2015, from which the summarized information was derived.

## 2. Accounts Receivable and Notes Receivable

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

<i>(in thousands of dollars)</i>	<i>August 31, 2016</i>	<i>August 31, 2015</i>
Research and other sponsored programs support	\$89,320	\$76,966
Student receivables	139,608	121,654
Royalty receivables	16,157	23,000
Other receivables	82,032	61,909
<b>Accounts receivable subtotal</b>	<b>327,117</b>	<b>283,529</b>
Less allowances for student uncollectible amounts	(671)	(603)
<b>Total accounts receivable</b>	<b>\$326,446</b>	<b>\$282,926</b>

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

<i>(in thousands of dollars)</i>	<i>August 31, 2016</i>	<i>August 31, 2015</i>
Notes receivable	\$159,917	\$149,582
Less allowances for student uncollectible amounts	(3,489)	(2,822)
<b>Total notes receivable</b>	<b>\$156,428</b>	<b>\$146,760</b>

Activity within the allowances was insignificant for fiscal years 2016 and 2015.

## 3. Contributions Receivable

Contributions receivable consisted of the following:

<i>(in thousands of dollars)</i>	<i>August 31, 2016</i>	<i>August 31, 2015</i>
Unconditional promises expected to be collected in		
Less than one year	\$47,660	\$41,058
One year to five years	150,658	78,200
More than five years	118,781	91,715
Fair value and other reserves		
Fair value adjustment	(47,133)	(33,878)
Other reserves	(6,543)	(8,077)
<b>Total contributions receivable</b>	<b>\$263,423</b>	<b>\$169,018</b>

Contributions receivable are discounted based on the weighted average borrowing rates for short-term and long-term bonds, notes, and other debt payable to correspond to the terms of the pledges receivable. The discount rate for pledges made in fiscal years

2016 and 2015 was 3.5 percent; the discount rate for pledges made in prior fiscal years ranged from 2.7 to 6.5 percent.

The next table summarizes the change in contributions receivable for the fiscal years ended August 31, 2016, and 2015.

<i>(in thousands of dollars)</i>	2016	2015
Balance—beginning of year	\$169,018	\$99,963
New pledges	170,498	158,672
Collections on pledges	(61,196)	(55,318)
Adjustments to pledges	(3,175)	(5,363)
Increase in discount to present value	(13,256)	(28,125)
(Increase) decrease in other reserves	1,534	(811)
<b>Balance at end of year</b>	<b>\$263,423</b>	<b>\$169,018</b>

#### 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,

temporarily invested expendable funds, 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.

#### Investment Fair Value

The following charts show the estimated fair value of investments and derivatives, grouped by the valuation hierarchy as defined in note 1, as of August 31, 2016, and 2015:

<i>(in thousands of dollars)</i>	<i>August 31, 2016</i>				
	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	\$152,016	—	—	—	\$152,016
US equity securities	509,477	\$61,730	\$59	\$695,733	1,266,999
International equity	283,385	19,643	1,329	1,261,153	1,565,510
Fixed income	124,448	963,490	—	215,523	1,303,461
High-yield credit	—	—	—	336,112	336,112
Absolute return	(474)	171,755	—	1,902,528	2,073,809
Private investments	—	321	14,752	2,014,860	2,029,933
Real assets	86,299	11,385	98,589	1,324,192	1,520,465
Other investments	—	7,926	23,488	—	31,414
Interest-rate derivatives	5,500	(4,942)	—	—	558
<b>Subtotal investment assets at fair value</b>	<b>1,160,651</b>	<b>1,231,308</b>	<b>138,217</b>	<b>7,750,101</b>	<b>10,280,277<sup>(a)</sup></b>
Interest-rate swaps	—	(28,561)	—	—	(28,561)
<b>Total</b>	<b>\$1,160,651</b>	<b>\$1,202,747</b>	<b>\$138,217</b>	<b>\$ 7,750,101</b>	<b>\$10,251,716</b>

<sup>(a)</sup> Investments held at cost totaling \$32,505 thousands should be added to the subtotal investment assets at fair value to reflect total investment assets as of August 31, 2016.

(in thousands of dollars)

August 31, 2015

	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	\$476,756	—	—	—	\$476,756
US equity securities	537,839	\$67,061	—	\$696,404	1,301,304
International equity	309,097	26,469	\$63	1,160,180	1,495,809
Fixed income	337,513	750,837	—	205,316	1,293,666
High-yield credit	—	—	—	337,109	337,109
Absolute return	(5,917)	298,749	—	1,773,810	2,066,642
Private investments	—	321	16,903	2,026,851	2,044,075
Real assets	67,427	2,595	101,502	1,248,323	1,419,847
Other investments	—	9,970	24,325	455	34,750
Interest-rate derivatives	—	(6,261)	—	—	(6,261)
<b>Subtotal investment assets at fair value</b>	<b>1,722,715</b>	<b>1,149,741</b>	<b>142,793</b>	<b>7,448,448</b>	<b>10,463,697<sup>(a)</sup></b>
Interest-rate swaps	—	(27,004)	—	—	(27,004)
<b>Total</b>	<b>\$1,722,715</b>	<b>\$1,122,737</b>	<b>\$142,793</b>	<b>\$ 7,448,448</b>	<b>\$10,436,693</b>

<sup>(a)</sup> Investments held at cost totaling \$34,067 thousands should be added to the subtotal investment assets at fair value to reflect total investment assets as of August 31, 2015.

Investments included as NAV as Practical Expedient consist primarily of the University's ownership in external 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, 2016. 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. Management reviewed the valuation policies for all partnerships in which the University is invested and deemed that its policies are appropriate and that the carrying amount of these assets represents a reasonable estimate of fair value. A small number of investments within certain partnerships may have holdings at a carrying value of cost. In the absence of another basis, management has determined this method to be appropriate for these specific investments and representative of an approximation of the fair value.

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, 2016, and 2015:

	<i>(in thousands of dollars)</i> August 31, 2015				August 31, 2016		
	Fair value	Purchases	Sales and settlements	Unrealized gains (losses)	Realized gains (losses)	Transfers into and out of Level 3	Fair value
US equity securities	—	\$141	(\$91)	\$74	(\$65)		\$59
International equity	\$63	1,089		656	(479)		1,329
Private investments	16,903	2,777	(671)	(4,257)			14,752
Real assets	101,502	10,346	(8,192)	(6,623)	1,556		98,589
Other investments	24,325			(837)			23,488
<b>Total investments</b>	<b>\$142,793</b>	<b>14,353</b>	<b>(8,954)</b>	<b>(10,987)</b>	<b>1,012</b>	<b>—</b>	<b>\$138,217</b>

	<i>(in thousands of dollars)</i> August 31, 2014				August 31, 2015		
	Fair value	Purchases	Sales and settlements	Unrealized gains (losses)	Realized gains (losses)	Transfers into and out of Level 3	Fair value
US equity securities	\$71					(\$71)	—
International equity	249		(\$131)	(\$17)	(\$38)		\$63
Private investments	13,216	\$2,958	(802)	1,884	(32)	(321)	16,903
Real assets	94,343	40,332	(5,986)	(28,430)	1,243		101,502
Other investments	20,733		(711)	4,303			24,325
<b>Total investments</b>	<b>\$128,612</b>	<b>43,290</b>	<b>(7,630)</b>	<b>(22,260)</b>	<b>1,173</b>	<b>(392)</b>	<b>\$142,793</b>

There were no significant transfers or reclassifications between Levels 1 and 2 during fiscal years 2016 and 2015. In fiscal year 2016, there were no transfers into or out of Level 3. In fiscal year 2015, the transfers out of Level 3 consisted primarily of investments reclassified from Level 3 to Level 2 based on observable discounted cash flow inputs.

As of August 31, 2016, and 2015, 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 \$13.1 million and \$14.7 million as of August 31, 2016, and 2015, respectively.

The next table 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, 2016, the University was committed to making future capital contributions in the amount of \$1,986 million, primarily in the next five years, as detailed on the next page. 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 securities	\$1,266,999	No limit	—	Daily to annually, with 1–90-day notice periods	Lock-up provisions ranging from none to 1 year
International equity	1,565,510	No limit	\$18,557	Daily to annually, with 1–90-day notice periods	Lock-up provisions ranging from none to 2 years
Fixed income	1,303,461	No limit	—	Daily to quarterly, with 1–90-day notice periods	No lock-up provisions
High-yield credit	336,112	No limit to 12 years	149,505	Certain partnerships ineligible for redemption; other funds quarterly to annually, with 90-day notice periods	Certain partnerships not redeemable; lock-up provisions on all other funds, ranging from none to 1 year with side pockets
Absolute return	2,073,809	No limit	—	Weekly to annually, with 5–120-day notice periods	Lock-up provisions ranging from none to 3 years; side pockets on many funds
Private investments	2,029,933	1–12 years	930,113	Partnerships ineligible for redemption	Not redeemable
Real assets	1,520,465	No limit to 14 years	887,692	Partnerships ineligible for redemption; commodity and equity funds are weekly to quarterly, with 1–45-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.

Northwestern'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, while two others may only be partially redeemed.

International equities include developed market (ex-US public equities) and emerging market strategies. Two investments in this category 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. As of August 31, 2016, one investment in this category may only be partially redeemed over the next year.

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. Two investments in this portfolio currently may not be redeemed over the next year due to lock-up provisions. As of August 31, 2016, the remaining investments have either full or partial liquidity over the next year, with the exception of those having side pockets.

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.

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

## Investment Return

The components of total investment return were as follows:

<i>(in thousands of dollars)</i>	<i>August 31, 2016</i>	<i>August 31, 2015</i>
Investment income	\$52,987	\$46,696
Net realized gains	440,499	518,214
Net change in fair values, unrealized	(96,965)	(365,151)
<b>Total investment return</b>	<b>\$396,521</b>	<b>\$199,759</b>

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. Gross investment income from specific investments held at cost totaled \$13.7 million and \$18.6 million at August 31, 2016, and 2015, respectively. Investment expenses related to specific investments held at cost totaled \$2.8 million and \$2.4 million at August 31, 2016, and 2015, respectively. All other investment returns are categorized as non-operating. As reflected in the consolidated statement of activities, investment return was as follows:

<i>(in thousands of dollars)</i>	<i>August 31, 2016</i>	<i>August 31, 2015</i>
<b>Changes in unrestricted net assets</b>		
Operating: investment return	\$357,775	\$334,562
Nonoperating: investment returns, reduced by operating distribution	(10,073)	(214,941)
<b>Changes in temporarily restricted net assets</b>		
Operating: investment return	151,234	139,313
Nonoperating: investment returns, reduced by operating distribution	(102,415)	(59,175)
<b>Total investment return</b>	<b>\$396,521</b>	<b>\$199,759</b>

Certain expenses paid directly by the University for investment management and custody services totaled \$56 million and \$59.6 million for the fiscal years ended August 31, 2016, and 2015, respectively, and have been netted against investment earnings.

### Derivative Financial Instruments

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

Credit exposure represents the University's potential loss if all the counterparties fail to perform under the terms of the contracts, and if all collateral, if any, becomes worthless. 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. 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, 2016, the University posted collateral of \$5.5 million to one counterparty. To date, the University has not incurred any losses on derivative financial instruments due to counterparty nonperformance.

The University has hired an external manager to use derivative financial instruments to obtain market exposure in equity and fixed income indices on excess cash balances. 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.

For further discussion of credit-related derivatives, see note 8.

The following tables summarize the derivative financial instruments held by the University as of August 31, 2016, and 2015:

*(in thousands of dollars)* *August 31, 2016*

	Notional amount	Assets	Liabilities	Fiscal year net gain (loss)
<b>Investment-related derivatives</b>				
Interest-rate swaptions	\$400,000	\$5,500	(\$4,942)	(\$2,360)
Equity futures	52,701	4,451	—	3,091
<b>Total investment-related</b>	<b>452,701</b>	<b>9,951</b>	<b>(4,942)</b>	<b>731</b>
<b>Credit-related derivatives</b>				
Interest-rate swaps	125,000	—	(28,561)	(1,557)
<b>Total credit-related</b>	<b>125,000</b>	<b>—</b>	<b>(28,561)</b>	<b>(1,557)</b>
<b>Total derivative financial instruments</b>	<b>\$577,701</b>	<b>\$9,951</b>	<b>(\$33,503)</b>	<b>(\$826)</b>

*(in thousands of dollars)* *August 31, 2015*

	Notional amount	Assets	Liabilities	Fiscal year net gain (loss)
<b>Investment-related derivatives</b>				
Interest-rate swaptions	\$400,000	\$7,000	(\$6,261)	(\$98)
Equity futures	78,337	9,878	—	(9,552)
<b>Total investment-related</b>	<b>478,337</b>	<b>16,878</b>	<b>(6,261)</b>	<b>(9,650)</b>
<b>Credit-related derivatives</b>				
Interest-rate swaps	125,000	—	(27,004)	(1,552)
<b>Total credit-related</b>	<b>125,000</b>	<b>—</b>	<b>(27,004)</b>	<b>(1,552)</b>
<b>Total derivative financial instruments</b>	<b>\$603,337</b>	<b>\$16,878</b>	<b>(\$33,265)</b>	<b>(\$11,202)</b>

## 5. Land, Buildings, and Equipment

Land, buildings, and equipment consisted of the following:

*(in thousands of dollars)*

	<i>August 31, 2016</i>	<i>August 31, 2015</i>
Land	\$29,089	\$28,389
Construction in progress	606,726	542,730
Buildings and leasehold improvements	2,712,816	2,393,140
Equipment	552,482	517,152
Accumulated depreciation	(1,532,515)	(1,437,964)
<b>Total land, buildings, and equipment</b>	<b>\$2,368,598</b>	<b>\$2,043,447</b>

The estimated cost to complete construction in progress at August 31, 2016, is \$749.6 million. Costs included in construction in progress are building and leasehold improvement capitalizations. Building costs are funded by bonds, gifts (received or pledged), grants, and unrestricted funds.

Under the University's interest capitalization policy, actual interest expense incurred during the period of

construction of an asset for University use is capitalized until that asset is substantially completed and ready for use. The capitalized cost is reflected in the total cost of the asset and depreciated over the useful life of the asset. Assets may include buildings and major equipment.

## Asset Retirement Obligations

In fiscal year 2016, management made a change in estimate of ARO based on an enhanced evaluation methodology, performance of a comprehensive study, and recalculations of remediation risks, assumptions, and costs. As a result of a change in estimate, the adjustment to the ARO liability eliminated the net asset retirement cost and reduced the net book value of the associated fixed assets, resulting in a nonoperating gain. Building assets were reduced by \$62.9 million and accumulated depreciation was reduced by \$13.6 million on the consolidated statements of financial position, and a nonoperating gain of \$71.9 million was recorded on the consolidated statement of activities.

ARO were adjusted during fiscal years 2016 and 2015 as follows:

<i>(in thousands of dollars)</i>	<i>August 31, 2016</i>	<i>August 31, 2015</i>
Balance at beginning of year	\$121,035	\$115,459
Liabilities settled in current period	(2,780)	(172)
Accretion expense	5,827	5,748
Change in estimated cash flows	(121,142)	—
<b>Balance at end of year</b>	<b>\$2,940</b>	<b>\$121,035</b>

## Lease Obligations

The University is obligated 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 in various years through fiscal year 2030. Real estate lease expenses totaled \$12.5 million and \$12.3 million at August 31, 2016, and 2015, respectively. Sublease rentals totaled \$3 million and \$3.1 million at August 31, 2016, and 2015, respectively. At August 31, 2016, 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)*

2017	\$13,081
2018	13,300
2019	12,928
2020	12,099
2021	11,101
2022 and thereafter	31,897
<b>Total</b>	<b>\$94,406</b>

## Rentals Under Leases

The University is entitled under numerous operating leases to receive rental payments. Operating leases consist primarily of leases for the use of real property and have terms expiring in various years through fiscal year 2021. The future minimum rental payments under noncancelable operating leases through August 31 of each period are shown at right.

*(in thousands of dollars)*

2017	\$1,881
2018	1,924
2019	1,968
2020	536
2021	36
2022 and thereafter	—
<b>Total</b>	<b>\$6,345</b>

## 6. Other Assets

Other assets are summarized on the consolidated statements of financial position as follows:

<i>(in thousands of dollars)</i>	<i>August 31, 2016</i>	<i>August 31, 2015</i>
Prepaid bond expenses	\$8,816	\$9,155
Inventories	2,602	2,864
Other assets	5,707	6,712
<b>Total other assets</b>	<b>\$17,125</b>	<b>\$18,731</b>

## 7. Deposits Payable and Actuarial Liability of Annuities Payable

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

<i>(in thousands of dollars)</i>	<i>August 31, 2016</i>	<i>August 31, 2015</i>
Agency deposits payable	\$87,804	\$83,666
Actuarial liability of annuities payable	21,882	22,669
Student loan deposits payable	10,436	13,041
Other deposits payable	20,714	4,394
<b>Total deposits payable and actuarial liability of annuities payable</b>	<b>\$140,836</b>	<b>\$123,770</b>

## 8. Bonds, Notes, and Other Debt Payable

Bonds and notes payable are as follows:

<i>(in thousands of dollars)</i>	<i>August 31, 2016</i>	<i>August 31, 2015</i>
Illinois Finance Authority (IFA)–Series 2004	\$135,800	\$135,800
IFA–Series 2008	125,000	125,000
Taxable–Series 2012	200,000	200,000
Taxable–Series 2013	577,660	582,195
Less unamortized loss on Taxable–Series 2013	(2,349)	(2,451)
Taxable–Series 2015	500,000	500,000
Less unamortized loss on Taxable–Series 2015	(634)	(657)
IFA–Series 2015	128,545	128,545
Plus unaccreted premium on Tax-Exempt–Series 2015	15,142	16,307
<b>Bonds payable subtotal</b>	<b>1,679,164</b>	<b>1,684,739</b>
Notes payable–commercial paper, taxable	230,000	180,000
<b>Total bonds and notes payable</b>	<b>\$1,909,164</b>	<b>\$1,864,739</b>

<b>Debt issuance</b>	<b>Interest-rate mode</b>	<b>Interest rate</b>	<b>Maturity</b>
IFA–Series 2004	Variable	.62% <sup>(a)</sup>	December 1, 2034
IFA–Series 2008	Variable	.6% <sup>(a)</sup>	December 1, 2046
Taxable–Series 2012	Fixed	4.2%	December 1, 2039, to December 1, 2047
Taxable–Series 2013	Fixed	4.48% <sup>(b)</sup>	December 1, 2015, to December 1, 2044
Taxable–Series 2015	Fixed	3.78% <sup>(b)</sup>	December 1, 2038, to December 1, 2048
IFA–Series 2015	Fixed	4.24% <sup>(b)</sup>	December 1, 2022, to December 1, 2028
Notes payable–commercial paper, taxable	Fixed	.49% <sup>(b)</sup>	September 1, 2016, to October 3, 2016

<sup>(a)</sup> Interest rate reset weekly

<sup>(b)</sup> Weighted average interest rate at August 31, 2016

Total obligations including bonds and notes payable at August 31, 2016, are scheduled to mature through August 31 of each period as noted below. The schedule has been prepared based on the contractual maturities of the debt outstanding at August 31, 2016. Accordingly, if remarketing of bonds fails 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.

*(in thousands of dollars)*

2017	\$234,715
2018	4,770
2019	4,935
2020	5,085
2021	5,450
Thereafter	1,642,050
<b>Total</b>	<b>\$1,897,005</b>

#### Bonds Payable

The IFA-Series 2015 Revenue Bonds were issued to acquire, construct, renovate, improve, and equip certain educational facilities of the University as defined in the Illinois Finance Authority Act and to pay certain expenses incurred in connection with the issuance of the bonds as permitted under the Illinois Finance Authority Act, subject to conditions set forth in a trust indenture between the Illinois Finance Authority (IFA) and Wells Fargo Bank, National Association (NA); and a loan agreement between the University and the IFA.

The Taxable-Series 2015 Fixed Rate Bonds were issued to acquire, construct, renovate, and equip certain educational facilities of the University, to refund \$145.1 million of the University's outstanding IFA-Series 2006 Revenue Bonds, and to pay certain expenses incurred in connection with the redemption and the issuance of the bonds, subject to conditions set forth in a trust indenture between the University and Wells Fargo Bank, NA.

The Taxable-Series 2013 Fixed Rate Bonds were issued to acquire, construct, renovate, and equip certain educational facilities of the University, to refund \$185 million of the University's outstanding

IEFA-Series 2003 Fixed Rate Revenue Bonds, and to pay certain expenses incurred in connection with the redemption and issuance of the bonds, subject to conditions set forth in a trust indenture between the University and Wells Fargo Bank, NA.

The Taxable-Series 2012 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.

The IFA-Series 2008 Adjustable Rate Revenue Bonds were issued to acquire, construct, renovate, remodel, improve, and equip certain educational facilities of the University as defined in the Illinois Finance Authority Act and to pay certain expenses incurred in connection with the issuance of the bonds as permitted under the Illinois Finance Authority Act, subject to conditions set forth in a trust indenture between the IFA and Wells Fargo Bank, NA; and a loan agreement between the University and the IFA. The bonds may operate in a daily, weekly, adjustable, or auction-rate mode.

The IFA-Series 2006 Revenue Bonds were issued to refund \$145.1 million of the University's outstanding IEFA-Series 1997 Adjustable Medium-Term Revenue Bonds and to pay certain expenses incurred in connection with the issuance and advance refunding of the bonds, all as permitted under the Illinois Finance Authority Act and subject to conditions set forth in a trust indenture between the IFA and Wells Fargo Bank, NA; and a loan agreement between the University and the IFA.

The IFA-Series 2004 Adjustable Rate Revenue Bonds were issued to acquire, construct, renovate, improve, and equip certain educational facilities of the University as defined in the Illinois Finance Authority Act and to pay certain expenses incurred in connection with the issuance of the bonds as permitted under the Illinois Finance Authority Act, subject to conditions set forth in a trust indenture between the IFA and Wells Fargo Bank, NA; and a loan agreement between the University and the IFA. The bonds may operate in a daily, weekly, adjustable, or auction-rate mode.

## Derivative Financial Instruments

The University has entered into interest-rate swap agreements to hedge variable interest-rate exposure related to its variable rate debt. The agreements effectively fix the interest rate from 4.12 percent to 4.38 percent. The notional value is \$125 million through expiration on August 31, 2023.

The University recognized a net unrealized loss on the swap investment totaling \$1.6 million for the fiscal year ended August 31, 2016, and a net unrealized loss of \$1.6 million for the fiscal year ended August 31, 2015. The fair values of the swap position were in a liability position of \$28.6 million and \$27 million as of August 31, 2016, and 2015, respectively, and are included in accounts payable and accrued expenses on the consolidated statements of financial position. Also see note 4.

## Notes Payable

The University places commercial paper under a \$300 million Taxable Commercial Paper Note.

## Other Debt Payable

At August 31, 2016, the University held or had the ability to draw \$350 million in standby lines of credit to supplement working capital requirements as follows:

*(in thousands of dollars)*

<b>Expiration date</b>	<b>Available credit</b>
December 9, 2016 <sup>(a)</sup>	\$25,000
June 30, 2017	50,000
June 30, 2017	25,000
July 21, 2017	125,000
October 17, 2017	50,000
March 31, 2018	75,000
<b>Total</b>	<b>\$350,000</b>

<sup>(a)</sup> Renewed on December 9, 2016, through December 8, 2017.

## 9. Endowments

The FASB ASC Not-for-Profit Entities Presentation of Financial Statements Subtopic provides guidance on the net asset classification of donor-restricted endowment funds for not-for-profit organizations subject to an enacted version of the Uniform Prudent Management of Institutional Funds Act (UPMIFA) and improves disclosure about an organization's endowment funds, both donor-restricted and

board-designated, regardless of whether the organization is subject to 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 as permanently restricted net assets 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 that is not classified in permanently restricted net assets is classified as temporarily restricted net assets until it is appropriated for University expenditure in a manner consistent with UPMIFA's standard of prudence. In accordance with UPMIFA, the University considers the following factors in determining 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
- The possible effects of inflation or deflation
- The 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 2,500 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, 2016, and 2015:

*(in thousands of dollars)* *August 31, 2016*

Endowment net asset composition by type of fund	Unrestricted	Temporarily restricted	Permanently restricted	Total
Donor-restricted endowment funds	(\$3,039)	\$2,235,406	\$1,411,130	\$3,643,497
Institution-designated endowment funds	3,834,670			3,834,670
<b>Total endowment funds</b>	<b>\$3,831,631</b>	<b>\$2,235,406</b>	<b>\$1,411,130</b>	<b>\$7,478,167</b>

*(in thousands of dollars)* *August 31, 2015*

Endowment net asset composition by type of fund	Unrestricted	Temporarily restricted	Permanently restricted	Total
Donor-restricted endowment funds	(\$487)	\$2,333,376	\$1,342,956	\$3,675,845
Institution-designated endowment funds	3,912,184			3,912,184
<b>Total endowment funds</b>	<b>\$3,911,697</b>	<b>\$2,333,376</b>	<b>\$1,342,956</b>	<b>\$7,588,029</b>

### 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 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 allocate the current income of all other investment pools.

## Changes in Endowment Net Assets

The following tables represent the changes in endowment net assets for the years ended August 31, 2016, and 2015:

(in thousands of dollars)

August 31, 2016

	Unrestricted	Temporarily restricted	Permanently restricted	Total
Endowment net assets, beginning of year	\$3,911,697	\$2,333,376	\$1,342,956	\$7,588,029
Net investment loss	(4,824)	(7,189)		(12,013)
Net appreciation, realized and unrealized	32,527	54,829		87,356
Total investment return	27,703	47,640	—	75,343
Contributions		285	63,747	64,032
Appropriation of endowment assets for expenditure	(158,125)	(151,234)	—	(309,359)
Other changes				
Transfers to create institutional funds	139,902	—	—	139,902
Transfers of institutional funds per donor requirement		173	6,425	6,598
Spending of institution-designated endowment fund	(86,378)	—	—	(86,378)
Other reclassifications	(3,168)	5,166	(1,998)	—
<b>Endowment net assets, end of year</b>	<b>\$3,831,631</b>	<b>\$2,235,406</b>	<b>\$1,411,130</b>	<b>\$7,478,167</b>

(in thousands of dollars)

August 31, 2015

	Unrestricted	Temporarily restricted	Permanently restricted	Total
Endowment net assets, beginning of year	\$3,925,634	\$2,397,857	\$1,177,625	\$7,501,116
Net investment loss	(6,706)	(6,687)		(13,393)
Net appreciation, realized and unrealized	85,039	85,664		170,703
Total investment return	78,333	78,977	—	157,310
Contributions		831	153,777	154,608
Appropriation of endowment assets for expenditure	(147,932)	(139,562)	—	(287,494)
Other changes				
Transfers to create institutional funds	106,937	—	—	106,937
Transfers of institutional funds per donor requirement		(66)	7,720	7,654
Spending of institution-designated endowment fund	(52,102)	—	—	(52,102)
Other reclassifications	827	(4,661)	3,834	—
<b>Endowment net assets, end of year</b>	<b>\$3,911,697</b>	<b>\$2,333,376</b>	<b>\$1,342,956</b>	<b>\$7,588,029</b>

## Underwater Endowment Funds

The University monitors endowment funds to identify those for which historical cost was more than fair value. As of August 31, 2016, and 2015, the historical cost of such accounts was approximately \$196 million and \$39.6 million, and the market value totaled

\$193 million and \$39.1 million, respectively. Associated unrealized losses are recorded in the unrestricted net assets classification; subsequent gains increase unrestricted net assets.

## 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 the mutual funds offered by Fidelity Investments. Participating employee and University contributions are immediately vested. The University contributed \$71.1 million and \$66.9 million to the two plans in 2016 and 2015, respectively. It expects to contribute \$75.3 million to the two plans in 2017.

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. The accrued cost

for postemployment benefits was \$11.3 million and \$13 million at August 31, 2016, and 2015, respectively, and is included in accounts payable and accrued expenses on the consolidated statements of financial position.

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 healthcare plan. In the consolidated statement 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 University funds the benefit costs as they are incurred. The following table sets forth the plan’s obligations, benefits paid, contributions, net periodic postretirement benefit cost, and assets:

<i>(in thousands of dollars)</i>	<i>August 31, 2016</i>	<i>August 31, 2015</i>
Benefit obligations	\$14,273	\$12,567
Benefits paid	930	1,219
Employer contributions	334	654
Contributions from participants	596	565
Net periodic postretirement benefit cost	857	1,702
Fair value of plan assets	—	—

The accumulated other comprehensive income included in unrestricted net assets on the consolidated statements of financial position totaled net gains of \$1.6 million and \$2.8 million as of August 31, 2016, and 2015, respectively; a decrease of \$1.2 million due to net losses during the fiscal year.

The APBO was \$14.3 million and \$12.6 million at August 31, 2016, and 2015, respectively, and is included

in accounts payable and accrued expenses on the consolidated statements of financial position.

The following tables present key actuarial assumptions used in determining APBO as of August 31, 2016, and 2015. For both fiscal years 2016 and 2015, the ultimate healthcare cost trend rate was 5 percent, and the year when the trend rate will reach the ultimate trend rate was 2023.

Additional assumptions used to determine benefit obligations were as follows:

	<i>August 31, 2016</i>	<i>August 31, 2015</i>
Settlement (discount) rate	3%	3.9%
Weighted average rate of increase in future compensation levels	3%	3%
Healthcare cost trend rate	6.75%	7%

Next, the assumptions used to determine net periodic benefit cost:

	<i>August 31, 2016</i>	<i>August 31, 2015</i>
Discount rate	3.9%	3.6%
Weighted average rate of increase in future compensation levels	3%	3%
Healthcare cost trend rate	7%	7.25%

A one-percentage-point change in assumed healthcare cost trend rates would have had these effects in fiscal year 2016:

<i>(in thousands of dollars)</i>	<i>1% point decrease</i>	<i>1% point increase</i>
(Decrease) increase in total of service and interest cost	(\$64)	\$73
(Decrease) increase in postretirement benefit obligation	(523)	589

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

<i>(in thousands of dollars)</i>	
2017	\$677
2018	553
2019	610
2020	720
2021	795
2022–26	4,790
<b>Total</b>	<b>\$8,145</b>

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 \$64.6 million and \$56.4 million in fiscal years 2016 and 2015, respectively; these are included in investments and deposits payable and actuarial liability of annuities payable on the consolidated statements of financial position.

## 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 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 wholly owned 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, 2016, accounts receivable arising from operational activities with NMHC totaled \$18.5 million and are included in accounts receivable on the consolidated statements of financial position. For the year ended August 31, 2016, contributions totaling \$133.8 million have been made from NMHC to the University and are included in private gifts on the consolidated statement of activities.

As of August 31, 2015, accounts receivable arising from operational activities with NMHC totaled \$7.6 million and are included in accounts receivable on the consolidated statements of financial position. Through August 31, 2015, contributions totaled \$137.5 million from NMHC to the University; these are included in private gifts on the consolidated statement of activities.

## 12. Self-Insurance Reserves and Other Contingencies

Reserves for losses under the University's self-insurance program, aggregating \$7.3 million and \$5.8 million at August 31, 2016, and 2015, respectively, include reserves for probable known losses and for losses incurred but not yet reported. A portion of the reserves pertaining to professional, general, and automobile liability has been determined on a discounted present-value basis. The discount rate was 7.5 percent in fiscal years 2016 and 2015. 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 expenses 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 \$29.3 million and \$39.3 million as of August 31, 2016, and 2015, respectively. These loans are included in notes receivable and deposits payable on the consolidated statements of financial position. Reserves in anticipation of securitized student loan future defaults totaled \$100,000 and \$122,000 at August 31, 2016, and 2015, respectively. Notes receivable on the consolidated statements of financial position are shown net of these reserves in fiscal years 2016 and 2015.

In October 2013, the University purchased a \$61 million portfolio of private education loans from a lending agency; these loans were previously purchased by the lending agency from the University prior to 2009 and were serviced by the University. As of August 31, 2016, and 2015, respectively, these loans totaled \$30.6 million and \$41.6 million, and are included in notes receivable on the consolidated

statements of financial position. The University continues to service the repurchased loans. At August 31, 2016, and 2015, \$104,000 and \$129,000, respectively, were reserved in anticipation of future defaults. Notes receivable on the consolidated statements of financial position are shown net of these reserves in fiscal years 2016 and 2015.

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 financial position or results of operations.

### 13. Grants and Contracts

Grants and contracts are summarized on the consolidated statement of activities as follows:

<i>(in thousands of dollars)</i>	<i>August 31, 2016</i>	<i>August 31, 2015</i>
Federal grants	\$444,304	\$408,533
Private grants and contracts	147,960	154,017
State grants	3,510	3,039
<b>Total grants and contracts</b>	<b>\$595,774</b>	<b>\$565,589</b>

#### 14. 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 maintenance of facilities, as well as for depreciation, accretion for asset retirement

obligations, 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, 2016, and 2015, were as follows:

(in thousands of dollars)

August 31, 2016

	Maintenance of facilities	Depreciation and accretion	Interest on indebtedness	All other operating expenses	Total
Instruction	\$26,936	\$18,154	\$5,930	\$771,599	\$822,619
Research	48,148	32,452	10,599	371,850	463,049
Academic support	34,682	23,375	7,635	217,736	283,428
Student services	21,728	14,645	4,783	157,574	198,730
Institutional support	9,628	6,489	2,120	272,242	290,479
Auxiliary services	41,707	28,110	9,181	28,851	107,849
<b>Total</b>	<b>\$182,829</b>	<b>\$123,225</b>	<b>\$40,248</b>	<b>\$1,819,852</b>	<b>\$2,166,154</b>

(in thousands of dollars)

August 31, 2015

	Maintenance of facilities	Depreciation and accretion	Interest on indebtedness	All other operating expenses	Total
Instruction	\$24,956	\$17,530	\$5,518	\$714,441	\$762,445
Research	42,981	30,193	9,505	347,691	430,370
Academic support	33,348	23,426	7,375	214,213	278,362
Student services	21,587	15,164	4,774	150,399	191,924
Institutional support	6,804	4,780	1,505	255,326	268,415
Auxiliary services	38,063	26,738	8,417	28,599	101,817
<b>Total</b>	<b>\$167,739</b>	<b>\$117,831</b>	<b>\$37,094</b>	<b>\$1,710,669</b>	<b>\$2,033,333</b>

**Northwestern University**

Schedule of Expenditures of Federal Awards  
For the Year Ended August 31, 2016

Research Type/Federal Grantor/Subagency/Project Title	Pass-through ID	CFDA	Sponsor Award Number	FY16 Expense	Passed to Subrecipients
<b>Research and Development Cluster</b>					
Agency for International Development					
Testing the Effectiveness of Tailored Non-Formal Education Interventions					
Promoting Critical Thinking and Emotional Literacy in the Middle East	255	98.001	3003719520//AID-OAA-A-15-00075	4,822	
The Role of Civil Servants in Reducing Corruption	111	98.001	DFG-20-LAQ1-NWU//AID-OAA-A-12-00039	17,909	
Viral Infection Bottleneck - Mucosal Pilot Study	113	98.001	Agmt 2217//AID-OAA-A-11-00020	8,492	
				<b>31,223</b>	
Intravaginal Devices for the Sustained Delivery of Tenofovir	50	98.RD	AGMT-APSA-13-008//AID-OAA-A-10-0006	<b>64,023</b>	
Preclinical Development of Longer Acting Topical Antiretroviral Delivery Systems	50	98.RD	MAPS2-14-029 //AID-OAA-A-14-00010	<b>156,799</b>	
An osmotic pump vaginal insert for sustained delivery of anti-retrovirals	50	98.RD	MAPS2-15-056 //AID-OAA-A-14-00010	<b>95,209</b>	
<b>Agency for International Development Total</b>				<b>347,254</b>	
Department of Agriculture					
School Lunch After HHFKA: Selection, Nutrition, Health, and Achievement	275	10.255	613K782//59-5000-5-0012	<b>37,180</b>	
Department of Agriculture Total				<b>37,180</b>	
Department of Commerce					
National Institute of Standards and Technology					
Advanced Materials Center for Excellence: Center for Hierarchical Materials Design (ChiMaD)					
		11.609	70NANB14H012 Amd 4	5,305,046	1,959,723
Rapid Qualification & Certification (RQC) Using Calorimetric, Optical, Mechanical, Microstructural (COMM) Validation	161	11.609	G2A62519 PO143327//70NANB13H194-02	294,939	
				<b>5,599,985</b>	<b>1,959,723</b>
Northwestern University Application to NIST SURF - Gaithersburg		11.620	70NANB16H160	6,335	
SURF-Gaithersburg application-Northwestern University		11.620	70NANB15H142	936	
				<b>7,271</b>	
U.S. Census Bureau					
The Use of Commercial Data to Adjust Housing Estimates for Survey Nonresponse		11.RD	YA1323-15-SE-0097//Ref#BCYA1323-15-00934	<b>44,885</b>	
United States Patent and Trademark Office					
Conference on Intellectual Property and Entrepreneurship		11.RD	USPTO MOA No. 16143012-0000-000	6,402	
<b>Department of Commerce Total</b>				<b>5,658,543</b>	<b>1,959,723</b>

**Northwestern University**

Schedule of Expenditures of Federal Awards  
For the Year Ended August 31, 2016

Research Type/Federal Grantor/Subagency/Project Title	Pass-through ID	CFDA	Sponsor Award Number	FY16 Expense	Passed to Subrecipients
Department of Defense					
WRMC Pain Management	145	12.RD	MED0026//W911QY-13-C-0103	<b>(10,512)</b>	
WRMC Pain Management	145	12.RD	MED0035//W911QY-12-C-0039	<b>142,118</b>	
iGRAB: Innovative Glove for Rehabilitation and Assistance using Biomimicry	135	12.RD	W81XWH-16-C-0012	<b>7,231</b>	
Air Force Office of Scientific Research					
A 4D Nanoprinter for Making and Manipulating Macroscopic Materials		12.800	FA9550-16-1-0150	1,034,913	404,250
ABC Stochastic Multiresolution Theory for Microstructure Based Predictive Materials Science: Application to Multiphase Polymer Systems		12.800	FA9550-14-1-0032-P00003	219,075	
Biomimetic Lipid Nanoparticles: Bio-Sensing and Bio-Functional Applications		12.800	FA9550-13-1-0192	135,939	
BioProgrammable One-, Two-, and Three-Dimensional Materials		12.800	FA9550-11-1-0275 Mod. P00007	1,797,683	356,282
Combinatorial Screening of Emergent Nanophotonic Behavior through Biomolecule-Encoded Superlattice Formation		12.800	FA9550-12-1-0280/P00005	763,806	
Convergent Evolution to Engineering: Multiscale Structures and Mechanics in Damage Tolerant Functional Bio-composite and Biomimetic Materials	229	12.800	S-000700//FA9550-15-1-0009-02	186,709	
Electrochemical Imaging and Mechanistic Studies on the Nanometer Scale		12.800	FA9550-14-1-0003/P00002	2,285,264	1,516,754
Electronic Structure Theory for Photo-Induced Spin-Forbidden Dynamics		12.800	FA9550-15-1-0031/P00001	135,394	
Fundamental studies of reactive processes at plasma-surface interfaces	174	12.800	00002165//FA9550-14-1-0053	292,029	
Fundamentals of Filament Interaction	233	12.800	217178/05 // FA9550-11-1-0001	17,104	
Hybrid Plasmonic-MOF Nanoparticle Superlattices		12.800	FA9550-14-1-0274	469,057	
Logic-Enabled Spectroscopy of Single Trapped Molecular Ions		12.800	FA9550-13-1-0116	38,653	
Molecular models to investigate diamagnetic anisotropy: Towards the directed synthesis of rare-earth free permanent magnets		12.800	FA9550-14-1-0358	169,766	
MURI Center for Dynamic Magneto-optics	255	12.800	3003023213 // FA9950-14-1-0040	218,250	
Nanostructured Interfaces and Patterning Tools for Probing Bioinspired Materials and Systems		12.800	FA9550-12-1-0141/P00003	169,375	
Novel Characterization Methods for Anisotropic and Mixed-Conduction Materials		12.800	FA9550-15-1-0247 P00001	170,034	
Novel Materials for Transverse Peltier Refrigeration		12.800	FA9550-15-1-0377	198,512	
Optical Buffering Switching and On-Line Data Sampling via Engineered Dispersion		12.800	FA9550-10-1-0228	1,727	
Optically Controlled Distributed Quantum Computing Using Atomic Ensembles as Qubits		12.800	FA9550-09-1-0652/P00006	(15)	
Paradigms for Emergence of Shape and Function in Biomolecular Electrolytes for the Design of Biomimetic Materials		12.800	FA-9550-10-1-0167 P00003	(1,761)	
PECASE: Multi-dimensional Vibrational-Electronic Spectroscopy to Probe Electronic-to-Vibrational Energy Transfer in Hybrid Nanomaterials		12.800	FA9550-16-1-0379	6,658	
Plasmonic Optoelectronic Interactions		12.800	FA2386-13-1-4124 Mod. P00003	97,480	
Polymeric and Molecular Materials for Advanced Organic Electronics		12.800	FA9550-15-1-0044 P00001	306,560	
Spatial and Spectral Control of Excitons within Quantum Dot-Molecule Assemblies via Coupled Energy Transfer Processes		12.800	FA9550-14-1-0005-P00003	382,749	174,748

**Northwestern University**

Schedule of Expenditures of Federal Awards  
For the Year Ended August 31, 2016

Research Type/Federal Grantor/Subagency/Project Title	Pass-through ID	CFDA	Sponsor Award Number	FY16 Expense	Passed to Subrecipients
Spinning Disk Confocal Microscope for the Analysis of Nanoconjugate-Cell Interactions	16	12.800	FA2386-14-1-3004	3,420	
Towards Software Apprentices that Learn in Dynamic Domains		12.800	FA9550-16-1-0138	138,621	
Understanding how to build long-lived learning collaborators		12.800	FA2386-10-1-4128/P00008	150,666	
				<b>9,387,668</b>	<b>2,452,034</b>
Air Force Research Laboratory					
Developing Topological Insulator Fiber based Photon Pairs Source for Ultrafast Optoelectronic Applications		12.300	FA8750-15-1-0117	<b>29,878</b>	
Center of Excellence for Advanced Bioprogrammable Nanomaterials (C-ABN)					
Managing the Mosaic of Microstructure	32	12.800	FA8650-15-2-5518	1,603,443	
		12.800	1150119-294722-P00006//FA9550-12-1-0458	338,100	
				<b>1,941,543</b>	
MSEE on Unified Foundation for Representation, Inference and Learning					
Compact and Integrated IMU for GPS Denied Navigation Using Fast-Light Gyroscopes and Accelerometers	228	12.910	1015 G PA097/5 // FA8650-11-1-7149	<b>11,994</b>	
Enterprise APT Detection and Forensics with Provenance Graphs	60	12.RD	Agmt 3/26/2013 / 01 // FA8651-13-C-0018	<b>7,931</b>	
Ultrasensitive and Compact Superluminal Ring Laser Accelerometer for Inertial Navigation	114	12.RD	PO#5004817255//Agmt #4915013031//FA8650-15-C-7561	<b>222,306</b>	
Simultaneous Inversion for Three Dimensional Velocity Structure and Seismic Discontinuities Beneath Eastern Asia Using Gravity and Multiple Seismic Data	60	12.RD	Agreement 3/26/13 / 01//FA8651-13-C-0011	<b>2,660</b>	
Next Generation Nano-electronic Circuit Elements Using Graphene Nano Ribbons		12.RD	FA9453-11-C-0231	<b>33,419</b>	
	60	12.RD	Agmt 11/3/13 // FA9453-13-C-0045	<b>11,143</b>	
Army					
A New and Comprehensive Approach for the Development of a Compact, High-Performance Rubidium Clock using Raman-Ramsey Interference in Atomic Vapor	59	12.360	14-001 HEH//W9111NF-13-10152-02	<b>37,877</b>	
13321010: Astrocytic Disruption in Traumatic Brain Injury and Alzheimers Disease		12.420	W81XWH-13-1-0243	(11,344)	
A Novel Approach to Assay DNA Methylation in Prostate Cancer		12.420	W81XWH-13-1-0319	133,720	68,997
Aberrant Recapitulation of Developmental Program: Novel Target in Scleroderma		12.420	W81XWH-12-1-0471	70,566	
Adaptations in Locus Ceruleus Induced by Post-Traumatic Stress Disorder		12.420	W81XWH-13-1-0018	91,551	
Alternative RNA Splicing of CSF3R in Promoting Myelodysplastic Syndromes		12.420	W81XWH-15-1-0153	37,099	6,861
An Innovative Residual Limb Lengthening Device	180	12.420	CC# 81919 CL3938//W81XWH-14-1-0136	35,284	
BC123474: Fas protects breast cancer stem cells from death		12.420	W81XWH-13-1-0301	427	
Beta-Blockers for the Prevention of Acute Exacerbations of COPD	221	12.420	000507860-008//W81XWH-15-1-0705	62,512	

**Northwestern University**

Schedule of Expenditures of Federal Awards  
For the Year Ended August 31, 2016

Research Type/Federal Grantor/Subagency/Project Title	Pass-through ID	CFDA	Sponsor Award Number	FY16 Expense	Passed to Subrecipients
Comprehensive Molecular Profiling of African-American Prostate Cancer to Inform on Prognosis and Disease Biology	255	12.420	3003962014//W81XWH-15-1-0661	7,132	
Delivery of Nano-Tethered Therapies to Brain Metastases of Primary Breast Cancer Using a Cellular Trojan Horse		12.420	W81XWH-13-1-0341	35,611	
Development of Sub-Ischial Prosthetic Sockets with Assisted-Vacuum Suspension for Highly Active Persons with Transfemoral Amputations		12.420	W81XWH-10-1-0744	338,122	60,142
Disruption of Trophic Inhibitory Signaling in Autism Spectrum Disorders		12.420	W81XWH-14-1-0433	323,158	108,961
Effect of Teriparatide, Vibration & the Combination on Bone Mass & Bone Architecture in Chronic SCI		12.420	W81XWH-10-1-0951	9,717	6,246
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	167,531	19,072
Inhibiting Prostate Cancer Cell Motility	171	12.420	1007494_NWU//W81XWH-15-1-0527	16,590	
In-vivo functional muscle regeneration utilizing an implantable modular bioreactor	283	12.420	WFUHS441082CF12/W81XWH1420004	157,325	
Locally applied statins to reduce scarring	283	12.420	WFUHS441012 SR-02//W81XWH-13-2-0054	177,052	
Macrophage Responses to Epithelial Dysfunction Promote Lung Fibrosis in Aging		12.420	W81XWH-15-1-0215	228,529	
Macrophage Responses to Epithelial Dysfunction Promote Lung Fibrosis in Aging PASTOR	94	12.420	W81XWH-15-1-0214	341,558	46,149
Peer-led Suicide Prevention: Promoting Healthy Family Role Transitions for Military Personnel	264	12.420	2366 PO# 773333/W81XWH-12-2-0133	8,410	
Preclinical Testing of a Novel Method to Block TGFbeta Family Proteins in DMD		12.420	416496-G//W81XWH-14-1-0322	138,334	
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-13-1-0234	117,605	
PsychoMotor and Error Enabled Simulations: Modeling Vulnerable Skills in the Pre-Mastery Phase	180	12.420	W81XWH-14-2-0193	327,657	93,949
rTMS: A Treatment to Restore Function after Severe TBI	38	12.420	CC# 81360 3164//W81XWH-13-1-0080	16,813	
Sleep homeostasis and synaptic plasticity		12.420	Pape 0020//W81XWH-14-1-0568	47,344	
Targeted reinnervation as a means to treat neuromas associated with major limb amputation		12.420	W81XWH-16-1-0169	11,479	
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	WX1XWH-13-2-0100	370,198	78,837
The Role of mDia1 in the Aberrant Innate Immune Signaling in del(5q) Myelodysplastic Syndromes		12.420	W81XWH-15-1-0534	67,562	
Therapeutic Sleep for Traumatic Brain Injury		12.420	W81XWH-15-1-0335	178,576	
		12.420	W81XWH-16-1-0166	11,479	

**Northwestern University**

Schedule of Expenditures of Federal Awards  
For the Year Ended August 31, 2016

Research Type/Federal Grantor/Subagency/Project Title	Pass-through ID	CFDA	Sponsor Award Number	FY16 Expense	Passed to Subrecipients
Two-step Approach for Advanced Prostate Cancer Management: Targeting PLK1 After Castration		12.420	W81XWH-15-1-0105	63,487	
Why does acute post whiplash injury pain transform into chronic pain?					
Multi-modal assessment of risk factors and predictors of pain chronification	209	12.420	2018883-NW//W81XWH-15-1-0603	<u>46,086</u>	
				<b>3,627,170</b>	<b>489,214</b>
1.3.2: Ergodic Control for Optimal Information Acquisition		12.431	W911NF-14-1-0461-P00004	152,041	
10.2: Adoption of Innovations in Work Networks		12.431	W911NF-14-1-0259-P00002	187,033	
10.4: Properties Controlling Synchronization in Networks of Dynamical Systems		12.431	W911NF-15-1-0272 P00001	113,009	
4pi-Steradian Curved And Lensless Imagers (4pi-SCALE) 1.2.2.		12.431	W911NF-13-1-0485/P00003/P00004	757,027	503,588
9.4: Next Generation Nano-electronics Utilizing Piezoelectricity and Piezoresistivity of 2D Materials Beyond Graphene		12.431	W911NF-15-1-0068	139,948	
A Comprehensive Study of Surface Defects in traditional Type II InAs_GaSb Superlattices and Ga_free Type II_Research Area 4_3_Electronic Sensing.		12.431	W911NF-15-1-0091/P00002	116,514	
Ab initio design of noncentrosymmetric metals: crystal engineering in oxide heterostructures. f. Research Area 6: Physics		12.431	W911NF-15-1-0017 P00002	26,776	
An Ultra-Sensitive and Compact Superluminal Ring Laser Gyroscope		12.431	W911NF-15-1-0643	148,957	
Autonomous Error Protection in Superconducting Circuits	174	12.431	SUB0000078//W911NF-15-1-0421	135,793	
Capacitance-Voltage Measurement of Type-II Superlattice Photodiodes		12.431	W911NF-12-2-0009/P00005	4,646	
Collective impact and common goals: Planned vs. emergent networks as tools for leveraging community outcomes		12.431	W911NF-16-1-0464	30,656	
Complex Dynamics and Systems: Controlling Energy Flow in Colloidal Nano-Networks		12.431	W911NF-13-1-0290	43,243	
Computational Analysis and Screening of Materials for Capture of Toxic Compounds (Topic 8.5)		12.431	W911NF-12-1-0130 Mod. P00005	70,343	
Creating and Manipulating High-Dimensional Photonic Entanglement		12.431	W911NF-12-1-0542/P00006	202,619	
Cross-cutting TMS Technology with Advanced Imaging for NeuroRehabilitation Treatment Applications		12.431	W911NF-15-1-0348	252,953	
Efficient GHz Surface-Normal Modulators for SWIR ToF Imagers		12.431	W911NF-16-1-0458	501	
Engineering nanoscale protein containers		12.431	W911NF-16-1-0169	12,729	
Engineering Synthetic Ribosomes (Topic 9.1)		12.431	W911NF-11-1-0445/P00004	123,161	
Engineering the translation apparatus for the synthesis of electronically active sequence-defined polymers		12.431	W911NF-16-1-0372	1,298	
Handling Adverse Visual Conditions for Target Tracking and Recognition		12.431	W911NF-16-1-0138	52,912	
Heme-Containing Metal-Organic Frameworks for the Oxidative Degradation of Chemical Warfare Agents		12.431	W911NF-15-1-0119	27,921	
Infinite Coordination Polymer Particles from Polymeric Coordinating Precursors		12.431	W911NF-15-1-0151 Mod. 2	165,412	
Laser Filamentation Science	233	12.431	6501622/05//W911NF-11-0297	71,469	

**Northwestern University**

Schedule of Expenditures of Federal Awards  
For the Year Ended August 31, 2016

Research Type/Federal Grantor/Subagency/Project Title	Pass-through ID	CFDA	Sponsor Award Number	FY16 Expense	Passed to Subrecipients
Missile Impact with Material Comminution: New Concept - Turbulence Analogy		12.431	W911NF-15-1-0240-P00001	203,373	
Modeling Neuroscience for Enhancing Memory Operations through Non-Invasive Channels (MNEMONIC)	201	12.431	19-000275//W911NF-16-2-0021	497,120	
Modular Extracellular Sensor Architecture and Multigenic Assembly Platform		12.431	W911NF-11-2-0066 Mod: P00006	(3,221)	
Multiscale Design and Manufacturing of Hybrid DWCNT-Polymer Fibers		12.431	W911NF-09-1-0541/P00007	(68,737)	
Multiscale Design and Manufacturing of Hybrid DWCNT-Polymer Fibers		12.431	W911NF-09-1-0541/P00007	89,587	77,744
New Theoretical and Experimental Methods for Predicting Fundamental Mechanisms of Complex Chemical Processes	258	12.431	C00045065-5//W911NF-14-1-0359 amd. 2	198,741	
PECASE: Organic Ligands as Tools to Analyze and Control Electronic Relaxation in Fluorescent Quantum Dots		12.431	W911NF-11-1-0075/P00005	69,990	
Physically-based tempered fractional-order operators for efficient multiscale simulations		12.431	W911NF-15-1-0569	92,863	
Precision Chemical Dynamics and Quantum Control of Ultracold Molecular Ion Reactions	228	12.431	1000 G SA978//W911NF-14-1-0378	216,387	
QUANTA: Quantitative Network-based Models of Adaptive Team Behavior	232	12.431	KK1623//W911NF-15-1-0577 02	92,660	
Research Area 11.1: HCP Mg Alloys Formable at Room Temperature		12.431	W911NF-16-1-0294	12,788	
Sea Urchin Spicules: Assembly of a Fracture-Toughened Material at the Nano- and Mesoscales	158	12.431	F8595-01//W911NF-16-1-0262	8,234	
Section II, A2, G-7.5 Metal-Organic Framework Materials for Force Protection		12.431	W911NF-13-1-0229-P00007	286,361	
Socio-Cognitive Networks: Theory & Data Driven Approaches for Understanding the Assembly and Interaction Networks of High Performance Teams		12.431	W911NF-14-1-0686	169,898	56,173
Stabilization of Reactive Chemical Species and Fundamental Studies of Small-Molecule Reactivity in Metal-Organic Frameworks		12.431	W911NF-14-1-0168/P00001	29,671	
Strong Electron-Photon Coupling using Plasmonic Light Compressors		12.431	W911NF-11-1-0390 P00006	82,188	
Study Proposal:Transforming Terrestrial Agility At All Scales		12.431	W911NF-16-1-0035	28,843	16,026
Synthesis of Metastable New Materials Without Critical Elements for Applications in Superconductivity and Magnetism		12.431	W911NF-15-1-0006	26,222	
TOPIC 1.3.4 Infrared Detectors: Demonstration of Dual-Band SWIR/MWIR Mini-Arrays and FPAs Based on Type-II Superlattices		12.431	W911NF-13-1-0412/P00002	615,867	
UV-Visible-Near IR Spectrophotometer for the Study of Reactive Chemical Species and Small-Molecule Reactivity in Metal-Organic Frameworks		12.431	W911NF-15-1-0331	108,598	
Validated Predictive Modeling of Engineered Cellulose Materials		12.431	W911NF-13-1-0241-P00003	84,058	
Visual Tracking and Identification of Targets in Limited Spatial Resolution		12.431	W911NF-15-1-0472	<u>50,000</u>	
				<b>5,728,452</b>	<b>653,531</b>

**Northwestern University**

Schedule of Expenditures of Federal Awards  
For the Year Ended August 31, 2016

Research Type/Federal Grantor/Subagency/Project Title	Pass-through ID	CFDA	Sponsor Award Number	FY16 Expense	Passed to Subrecipients
Elastic Cloud-Based Make	78	12.630	PO 401037724 // DMDII-14-01-10	57,686	
Trust, Influence and the Enhanced Human Performance of Multigenre Crowd Networks	20	12.630	9500012803//Job13765321//W911NF-09-2-0053 Mod.0004	<u>219,023</u>	
				<b>276,709</b>	
Macroscopic Quantum Communications Using Photonic Qudits		12.910	W31P4Q-13-1-0004/P00007	<b>1,140,596</b>	<b>637,915</b>
Network Sciences Collaborative Technology Alliance	20	12.RD	9500010212/0013//W911NF-09-2-0053 Mod 0024	<b>340,787</b>	
Scaling and Supramolecular Engineering of Metal-Organic Frameworks (MOFs)	166	12.RD	Agmt 10/30/15//W911SR-15-C-0028	<b>45,000</b>	
Industrial Production Methods for Ultra-High-Strength Fibers Based on Double-Walled Carbon Nanotubes	139	12.RD	Agmt 12/4/15 Amd 1//W912HZ-15-C-0004	<b>44,466</b>	
STTR Phase-II: High Speed Room Temperature Single Photon Counters	165	12.RD	Agmt 2/11/13 // W911NF-13-C-0028	<b>101</b>	
Task 3 Further Development and Validation of the Lattice Discrete Particle Model (LDPM)	70	12.RD	9828 // Agmt 4/22/16 // W912HZ-15-C-0019	<b>19,447</b>	
Conformal Photovoltaic Module Low Observability (ConPhormL)	142	12.RD	SR-1006-1-09-14//W15QKN-12-9-1006	<b>9,480</b>	
The Coevolution of Multi-Dimensional Dynamic Networks of Multi-Team Systems Related to Organization Effectiveness: Theory Development and Empirical Tests		12.RD	W5J9CQ-12-C-0017 Mod. P00010	<b>117,662</b>	<b>94,744</b>
Subcontract agreement between Northwestern University and Hypres, Inc. Under Raytheon BBN Technologies PO #950012409	97	12.RD	WP11NF14-C-0089//Billing Ref# HYP-9500012409	<b>6,806</b>	
Defense Advanced Research Projects Agency					
Architectural and Microstructural Optimization of Braided Structural Materials	122	12.910	2001175094 Amd 7//W91CRB-10-1-0004	7,807	
Biochronicity Grand Challenge: Human Time Stamp Development, Validation and Prediction		12.910	D15AP00027	523,625	44,183
Generation of mouse-based bioelectronic noses	159	12.910	M160044709//15-AO-00-005162-01//HR0011-16-2-0007	137,916	
In Vivo SERS Nanoplatforams for Diagnostics		12.910	HR0011-13-2-0002 Mod. P0004	(5,517)	
Spherical Nucleic Acids for In Vivo Therapeutics		12.910	HR0011-13-2-0018/P00008	2,060,111	1,833,337
Using Temporal Phase Signatures to Predict and Control Biological Timing		12.910	D12AP00023/0010	893,911	<u>137,831</u>
				<b>3,617,853</b>	<b>2,015,351</b>
Nano Engineered Thermoelectric Systems (NETS) for Lightweight Portable Primary/Secondary Power Sources	282	12.RD	450391-19980//HR0011-16-C-0035	<b>139,855</b>	
The MIT-Broad Foundry: TA-2	138	12.RD	5710003941//HR0011-15-C-0084	<b>343,068</b>	
Development of a Portable Microwave Atomic Clock Using Pulsed Coherent Population Trapping	60	12.RD	Agreement 11/13/14 // D14PC00134/0001	<b>(49)</b>	
Automated Approaches to Cellular Engineering and Biomanufacturing	52	12.RD	D14PC00005/0001	<b>9,826</b>	
Obtaining Multipath & Non-line-of-sight Information by Sensing Coherence & Intensity with Emerging Novel Techniques	199	12.RD	G001534-7510 // HR0011-16-C-0028	<b>9,695</b>	

**Northwestern University**

Schedule of Expenditures of Federal Awards  
For the Year Ended August 31, 2016

Research Type/Federal Grantor/Subagency/Project Title	Pass-through ID	CFDA	Sponsor Award Number	FY16 Expense	Passed to Subrecipients
IPA to the Defense Advanced Research Projects Agency (DARPA)		12.RD	IPA Agmt 01/30/2013	<b>(4,922)</b>	
IPA to the Defense Advanced Research Projects Agency (DARPA)		12.RD	IPA Agmt 1/29/15	<b>250,853</b>	
Defense Threat Reduction Agency					
A novel toolbox for rapid, on demand, in vitro glycoprotein synthesis		12.351	HDTRA1-15-1-0052	915,908	208,565
Hierarchically engineered porous materials for the protection against chemical threats		12.351	HDTRA1-14-1-0014	383,453	
Synthesis, Experimental Investigation and Mechanistic Computational Characterization of Highly Functional Arrays of Artificial Enzymes		12.351	HDTRA1-10-1-0023/P00005	(76,142)	
				<b>1,223,219</b>	<b>208,565</b>
Navy					
A Bio-inspired Underwater Robot for Station keeping with Omnidirectional Disturbances		12.300	N00014-14-1-0594 // N00014-16-1-2132-P00001	283,278	247,953
A Materials Genome Approach to Understanding Biofilm Mechanics		12.300	N00014-15-1-2701-P00001	83,514	
An Analogical Approach to Autonomy and Social Inference in a Cognitive Architecture		12.300	N00014-13-1-0470//N00014-16-1-2613	511,031	
Comparison and Analysis of Simulation Metamodel Fitting using various Software Packages		12.300	N00244-15-2-0004	82,999	
Conductive DNA Systems and Molecular Devices		12.300	N00014-11-1-0729 P00010	1,504,990	505,787
Consensus-Based Distributed Information Fusion		12.300	N00014-16-1-2106	24,822	
Critical MASS (Midwest Association for Science and Service)	40	12.300	Agmt 6/16/15//N00014-12-1-0738	3,420	
Critical MASS (Midwest Association for Science and Service)	40	12.300	Agmt 8/12/16 // N00014-12-1-0738	21,233	
Cutset Sampling Topologies for Intelligence, Surveillance, and Reconnaissance		12.300	N00014-14-1-0215/P00003	159,896	75,000
Cyberalloys 2020: Naval Materials by Design		12.300	N00014-12-1-0455 P00008	74,438	
Cyberalloys 2020: Naval Materials by Design		12.300	N00014-16-1-2400	114,278	
Drugs to Stimulate Neurite Regeneration from Damaged Cochlear Neurons		12.300	N00014-12-1-0173	(10,349)	
Drugs to Stimulate Neurite Regeneration from Damaged Cochlear Neurons		12.300	N00014-15-1-2130//N00014-16-1-2508	321,855	
Dynamic Allocation of Autonomy for Limited-Bandwidth Human-Robot Teams Based on Measures of Trust in the Human	180	12.300	Agmt 10/26/16 // N00014-16-1-2247	34,025	
Dynamically Textured Polymer Surfaces		12.300	N00014-13-1-0172	198,815	
Enhancing Intuitive Decision Making Through Implicit Learning		12.300	N00014-16-1-2251 P00002	239,063	
Functional Crystals Through Encodable Hard and Soft Matter		12.300	N00014-16-1-3117//N00014-15-1-0043	722,738	
Functionalized Two-Dimensional Nanoelectronic Heterostructures		12.300	N00014-14-1-0669 P00006	184,689	
Fundamental Performance Limits of Adaptive Two Wave Mixing Spectral and Phase Demodulator Systems for Fiber Optic Dynamic Strain Sensors		12.300	N00014-15-1-2098	102,391	
Large Scale Optimization Methods for Data Science Applications		12.300	N00014-14-1-0313 P00003	96,767	
Learning by Reading for Robust Reasoning in Intelligent Agents		12.300	N00014-16-1-2177//N00014-14-1-0111	125,846	

**Northwestern University**

Schedule of Expenditures of Federal Awards  
For the Year Ended August 31, 2016

Research Type/Federal Grantor/Subagency/Project Title	Pass-through ID	CFDA	Sponsor Award Number	FY16 Expense	Passed to Subrecipients
Li-ion Battery Safety - Electrode Microscale to Cell Scale		12.300	N00014-14-1-0070 Mod. No. A00002	34,943	
Materials Informatics Applied to Nanocomposites for Advanced Dielectric Technology	183	12.300	A12480//N000014-13-1-0173	77,078	
Methods for Solving Mixed Integer and Stochastic Optimization Problems in Parallel		12.300	N00014-15-1-2226 P00001	138,355	
Multi-Dimensional Site-Specific and Correlative Studies of High-Strength High-Toughness Naval Steels		12.300	N00014-15-1-2443-P00001	118,774	
Multiscale Modeling of Thermoplastic Elastomers for Enhanced Blast Properties through Microstructural Design		12.300	N00014-14-1-0434 P00002	125,647	
Nanomanufacturing for Enhancing the Human-Machine Interface: Roll-to-Roll, High Speed Printing of Multifunctional, Distributed Sensor Networks on Flexible Plastic Substrates	256	12.300	A002181204 Amd 7//N00014-11-1-0690	264,597	
Optimizing nanoscale precipitates in Al alloys by microalloying with transition metals		12.300	N00014-16-1-2402 P00001	90,066	
Overcoming Noise and Delay in Mobile Sensor Networks		12.300	N00014-13-1-0331-P00002	146,030	
Performance Sustainment in Polar Operations		12.300	N00014-15-1-2767	50,065	
Photonic Integration Through 3D Printed Photonic Circuit Boards		12.300	N00014-15-1-2935	449,543	
Stochastic Optimization for Energy Efficient Outpost Modeling		12.300	N00014-15-1-0046/P00002	35,775	23,113
Structure-Properties Relationship of Particles of Crumpled Sheets		12.300	N00014-13-1-0556	287,229	
The Dynamics of Nanowire Growth		12.300	N00014-14-1-0697	114,682	
The microbiome and responsiveness to stress: Countermeasure strategies for improving resilience to sleep and circadian disruption	237	12.300	1553361 mod. 1// N00014-15-1-2809	306,522	
The Mutual Influence of Sacred Values and Social Responsibilities in Governance and Conflict Management: A Dynamic Interplay between Leaders, Devoted Actor Networks, General Populations, and Time.	157	12.300	Agmnt 6/30/14 //FA9550-14-1-0030	108,290	
Theoretical Bounds on Imaging Through Scattering Media		12.300	N00014-15-1-2735 P00001	234,549	53,281
Towards Flexible Sheet Cameras	45	12.300	1(GG010550)//N00014-16-1-2152/N00014-14-1-0741	56,693	
Tuning the entropic spring: A predictive modeling approach to dictating order in polymer conjugated peptide assemblies		12.300	N00014-13-1-0760-P00005	139,049	
Ultrasensitive Multi-Octave and Multi-dimensional Spectral Sensing by Single Element Detection and Compressive Sensing		12.300	N00014-16-1-2715	73,872	
Understanding Atomic Scale Structure in Four Dimensions to Design and Control Mesoscale Morphologies for Oxidation Resistant Alloys		12.300	N00014-16-1-2280 P00001//N00014-14-1-0675	1,596,128	859,153
Yielding and Progressive Failure of Composite Materials		12.300	N00014-16-1-2202	24,547	
				<b>9,352,173</b>	<b>1,764,287</b>
Agile Fabrication of Sheet Metal Components with Assured Properties (Agile 1)	13	12.630	0007A-6//N00014-14-14-2-0002	<b>553</b>	
Data-driven Discovery of Novel Thermoelectric Materials	178	12.RD	1267//N66001-15-C-4036	<b>336,973</b>	

**Northwestern University**

Schedule of Expenditures of Federal Awards  
For the Year Ended August 31, 2016

Research Type/Federal Grantor/Subagency/Project Title	Pass-through ID	CFDA	Sponsor Award Number	FY16 Expense	Passed to Subrecipients
High-Speed Electronically Tunable Multi Fiber-Optic Wavelength Filter based on Ultra-High-Resolution Super-Compact Grating on Silicon-Photonic Platform	170	12.RD	1300366716 // Agmt 4/28/15 // N68335-14-C-0040	<b>92,861</b>	
Ultra-Wide Continuous Wave Electrical Tuning with a Multi-Section Quantum Cascade Laser		12.RD	Agmt 2/14/14 // N68936-13-C-0124	<b>58,950</b>	
Office of Naval Research Basic Research Challenge- Enhancing Intuitive Decision Making Through Implicit Learning	55	12.RD	P.O. 13-0005311 Release 4 // N00014-13-C-0160	<b>74,787</b>	
Biologically-derived Medicines on Demand	130	12.RD	P010152319 Mod 02//N66001-13-C-4024	<b>(90)</b>	
Theory-Driven Protocols for Replacing Elemental Composition of Strategic Materials	178	12.RD	P.O. 1210//N00014-14-C-0050	<b>126,490</b>	
<b>Department of Defense Total</b>				<b>38,814,027</b>	<b>8,315,641</b>
Department of Education					
Foreign Language and Area Studies Fellowships (FLAS) under Title VI Higher Education Act of 1965	244	84.015	2015-01858-01 Mod. 1//P015B140048-1	142,321	
Proposal for Funding a Comprehensive National Resource Center and Foreign Language and Area Studies Fellowships under Title VI Higher Education Act of 1965	244	84.015	2014-07445-01-01 // P015A140048	<u>(11,485)</u>	
				<b>130,836</b>	
Fulbright-Hays Doctoral Dissertation Research Abroad		84.022	P022A140038	37,843	
Fulbright-Hays Doctoral Dissertation Research Abroad (DDRA) Fellowship Program		84.022	P022A150045-1	<u>58,557</u>	
				<b>96,400</b>	
Developing Optimal Strategies in Exercise and Survival Skills to increase Health and Function	180	84.133	CL3802, CC81039//H133B140012	<b>(8,994)</b>	
Enhancing Middle School Mathematics Achievement through Spatial Skills Instruction	168	84.305	60046917//R305A150365	28,977	
Reading for Understanding Across Grades 6 through 12: Evidence-based Argumentation for Disciplinary Learning	243	84.305	E43311 490530 // R305F100007	123,499	
Teaching Perceptual and Conceptual Processes in Graph Interpretation		84.305	R305A120531-15-7	<u>181,126</u>	<u>25,152</u>
				<b>333,602</b>	<b>25,152</b>
I-STEM Network: Math and Science Statewide (MASS)	29	84.366	Agmt 5/27/15	48,694	
New Terrain Next Generation Science Teaching Project – Phase 2	189	84.366	21-62530-FY15//S366B130007	<u>12,098</u>	
				<b>60,792</b>	

**Northwestern University**

Schedule of Expenditures of Federal Awards  
For the Year Ended August 31, 2016

Research Type/Federal Grantor/Subagency/Project Title	Pass-through ID	CFDA	Sponsor Award Number	FY16 Expense	Passed to Subrecipients
ARRA-Project READS: Using Data to Promote Summer Reading & Close the Achievement Gap for Low -SES Students in North Carolina	89	84.396	108089-5046464//U396B100195-01	<b>47,037</b>	
Institute of Education Sciences					
A Summer RCT Training Institute for Established Researchers		84.305	R305B130023 - 15A	159,598	19,407
Advanced State Specific Design Parameters for Randomized Field Experiments	235	84.305	5898-NU//R305D140019	152,812	
CALDER - State and Local	12	84.305	01023-03230 Mod. 4//R305C120008	469,011	171,343
Center for Interactive Knowledge Utilization	237	84.305	1551539 Mod 2//R305C140008	351,222	
Multidisciplinary Program in Educational Sciences		84.305	R305B140042-16 Mod 3	648,148	
Post Doctoral Research Training Fellowship in Education Sciences		84.305	R305B100027 - 14	58,806	
Prevention of Truancy in Urban Schools through Provision of Social Services by Truancy Officers: A Goal 3 Randomized Efficacy Trial		84.305	R305A120809-13	347,155	319,772
Proposal to Conduct Annual Workshops on Better Quasi-Experimental Design and Analysis		84.305	R305B140029 - 16	238,526	
State Longitudinal Data Systems Public-Use Project	235	84.305	5897-NU//R305D140045	159,972	
				<b>2,585,250</b>	<b>510,522</b>
NCSER-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					
	277	84.324	3403-019297//R324A150094 Amd 1	<b>326,798</b>	
National Institute on Disability and Rehabilitation Research					
Machines Assisting Recovery from Stroke and Spinal Cord Injury for Reintegration into Society (MARS3)	180	84.133	CC 81765//H133E120010 Amd. 2	<b>2,955</b>	
<b>Department of Education Total</b>				<b>3,574,676</b>	<b>535,674</b>
Department of Energy					
A Scintillating Xenon Bubble Chamber for Dark Matter Detection		81.049	DE-SC0012161-0002	188,869	
Antiferromagnetism and Superconductivity		81.049	DE-FG02-05ER46248-0012	220,102	
Approaches to Integrated Photochemical Systems for Solar Energy Conversion		81.049	DE-FG02-99ER14999 Mod. 0017	302,381	
Argonne-Northwestern Solar Energy Research (ANSER) Center		81.049	DE-SC0001059/0007	3,160,697	631,084
Bose-Einstein Condensation of Magnons and Potential Device Applications		81.049	DE-SC0014424	105,361	
Center for Bio-Inspired Energy Science (CBES)		81.049	DE-SC0000989 0005	3,275,349	1,082,027
Collaboration with Photosynthetic Antenna Research Center (PARC)	284	81.049	WU-HT-11-05-MOD-8 PO No. 2910644P // DE-SC0001035	151,913	
COOLR: A New System for Dynamic Thermal-Aware Computing		81.049	DE-SC0012531/0001	97,080	
Coordination-Chemistry-Derived Materials Featuring Nanoscale Porosity and Selective Chemical Separation Capabilities		81.049	DE-FG02-08ER15967-0008	244,724	
Dark Matter and Track Triggering with the CMS Experiment		81.049	DE-SC0015973	107,152	

**Northwestern University**

Schedule of Expenditures of Federal Awards  
For the Year Ended August 31, 2016

Research Type/Federal Grantor/Subagency/Project Title	Pass-through ID	CFDA	Sponsor Award Number	FY16 Expense	Passed to Subrecipients
Department of Energy Computational Science Graduate Fellowship	128	81.049	Letter 9/2/15	2,696	
Design of Next Generation Thermoelectrics		81.049	DE-SC0014520	300,852	
Dynamic Visualization and Control of Emergent Phases in Complex Oxide Heterostructures	173	81.049	5076-NU-DOE-2375//DE-SC0012375	89,775	
Effect of Low Dose Irradiation on NFKB Signaling Networks and Mitochondria		81.049	DE-SC0001271/005	2,109	
EFRC/UMN: Inorganometallic Catalysts	256	81.049	A004527502 Amd. 02//DE-SC0012702	697,721	
Electrode Optimization Parameters of SiNode Material for Li Ion Battery	196	81.049	Agmt 12/12/14 // DE-SC0009467 // Amd 1	54,555	
Electrostatic Driven Self-Assembly Design of Functional Nanostructures		81.049	DE-FG02-08ER46539 Mod 0007	156,437	767
Epitaxial Multifunctional Oxide Heterostructures		81.049	DE-FG02-06ER46346/0010	173,243	
Fundamental Studies of Light-Induced Charge Transfer, Energy Transfer, and Energy Conversion with Supramolecular Systems		81.049	DE-FG02-87ER13808/A028	248,438	
Granular Constraints and Size Effects in Polycrystalline Shape Memory Alloys		81.049	DE-SC0010594-002	121,688	
High Performance Nano-Crystalline Oxide Fuel Cell Materials: Defects, Structures, Interfaces, Transport, and Electrochemistry		81.049	DE-FG02-05ER46255/04	5,305	
Hybrid Halide Perovskites: Advancing Optoelectronic Materials	232	81.049	KK1508//DE-SC0012541	171,575	
Institute for Environmental Catalysis		81.049	DE-FG02-03ER15457	1,341,507	
Kinetics and Thermodynamics of Metal and Complex Hydride Nanoparticles		81.049	DE-FG02-07ER46433 Mod. 0009	379,662	215,694
Light-Driven Charge Transfer in Face-to-Face Donor-Spacer-Acceptor Supramolecular Systems		81.049	DE-FG02-96ER14684-0020	148,883	5,241
Molecular Nanocages for Catalysis: An Investigation of Effect of Active Site Environment		81.049	DE-FG02-01ER15184 Mod 0014	(834)	
Nanoengineering of Complex Materials		81.049	DE-FG02-00ER45810/0020	357,544	
Nanoporous Materials Genome: Methods and Software to Optimize Gas Storage, Separations, and Catalysis	256	81.049	A003127002 Amd 4//DE-SC0008688 Mod 5	120,625	
New Methods for Atomic Structure Determination of Nanoscale Materials		81.049	DE-FG02-01ER45945	87,394	
Nonlinear Optimization and Applications		81.049	DE-FG02-87ER25047/0030	58,132	
Paths to Discovery at the LHC: Dark Matter and Track Triggering		81.049	DE-SC0014073	73,007	
Probing Coherent States of Light and Matter in Two-Dimensional Semiconductors		81.049	DE-SC0012130-0002	187,417	
Research in High Energy Physics		81.049	DE-SC0010143/ Amd 0002	529,854	
Research in the Energy, Cosmic and Intensity Frontiers and Theoretical Physics at Northwestern University		81.049	DE-SC0015910	394,730	
Scalable Data-Management, Analysis, and Visualization (SDAV)		81.049	DE-SC0007456	185,203	
Scalable, In-situ Data Clustering Data Analysis for Extreme Scale Scientific Computing		81.049	DE-SC0014330 0001	149,307	
SISGR: Single Molecule Chemical Imaging at Femtosecond Time Scales		81.049	DE-SC0001785 0006	270,153	
Solid State Solar-Thermal Energy Conversion Center (S3TEC Center)	138	81.049	5710003775 Amd 1//DE-SC0001299	140,700	
Strong Field Coherent Dynamics and Control. From Alignment to High Harmonic Generation in Complex Systems		81.049	DE-FG02-04ER15612/0011	148,375	

**Northwestern University**

Schedule of Expenditures of Federal Awards  
For the Year Ended August 31, 2016

Research Type/Federal Grantor/Subagency/Project Title	Pass-through ID	CFDA	Sponsor Award Number	FY16 Expense	Passed to Subrecipients
Strong Interaction Studies with Medium Energy Probes		81.049	DE-FG02-87ER40344-0037	304,060	
Supported Organometallic Complexes: Surface Chemistry, Spectroscopy, Catalysis and Homogeneous Models		81.049	DE-FG02-86ER13511/033	(932)	
Surface Plasmon Enhanced Chemistry		81.049	DE-SC0004752/ Mod 0005	202,792	
Templating Routes to Supported Oxide Catalysts by Design		81.049	DE-SC0006718/003	(3,240)	
The Evolution of Topologically Complex Structures: Coarsening of Dendritic Mixtures		81.049	DE-FG02-99ER45782 0018	<u>2,718</u>	<u>1,039</u>
				<b>14,955,079</b>	<b>1,935,852</b>
A Novel Lubricant Formulation Scheme for 2% Fuel Efficiency Improvement		81.086	DE-EE0006449	151,036	
Rapid Freeform Sheet Metal Forming: Technology Development and System Verification	74	81.086	A10-PO14-164103//RQ13-235R07//DE-EE0005764	<u>335,001</u>	
				<b>486,037</b>	
Computational Design and Performance Prediction of Creep-Resistant Ferritic Superalloys	267	81.089	A15-0315-S001//DE-FE0024054	125,029	
Scalable and Cost Effective Barrier Layer Coating to Improve Performance and Stability of SOFC Cathode	286	81.089	14-749-NU//DE-FE0023407	<u>93,212</u>	
				<b>218,241</b>	
High-Pressure Elastic Properties of Minerals, Glasses and Superhard Materials	31	81.112	4-10469-03 Amd 5//DE-NA002006-0005	87,847	
Electrically-Assisted Tubing Processes for Enhancing Manufacturability of Oxide \ Dispersion Strengthened Structural Materials for Nuclear Reactor Applications		81.121	DE-NE0008409-0001	138,521	
NEET-3: Reactor Materials - Predictive Characterization of Aging and Degradation of Reactor Materials in Extreme Environments		81.121	DE-NE0000678-0005	<u>323,024</u>	
				<b>461,545</b>	
A Machine Learning-Based Materials Discovery Paradigm Applied to Solid Ion Conductors	43	81.135	Agmt 3/31/16//DE-AR0000707	86,990	
Solid Acid Fuel Cell Stack for Distributed Generation Applications	190	81.135	C2015.0008 // DE-AR0000495	<u>252,636</u>	
				<b>339,626</b>	
Nonlinear Ultrasonic Techniques to Monitor Radiation Damage in RPV and Internal Components	82	81.RD	RC936-S2//00126931	<b>(1,003)</b>	
Nonlinear Ultrasonic Diagnosis and Prognosis of ASR Damage in Dry Cask Storage	17	81.RD	00127346//DE-AC07-05ID14517	<b>(480)</b>	
Nonlinear Ultrasonic Diagnosis and Prognosis of ASR Damage in Dry Cask Storage	17	81.RD	00127346//DE-AC07-05ID14517	<b>28,621</b>	<b>28,621</b>

**Northwestern University**

Schedule of Expenditures of Federal Awards  
For the Year Ended August 31, 2016

Research Type/Federal Grantor/Subagency/Project Title	Pass-through ID	CFDA	Sponsor Award Number	FY16 Expense	Passed to Subrecipients
Novel Metal Sulfides to Achieve Effective Capture and Durable Consolidation of Radionuclides, FC-1	17	81.RD	00127985//DE-AC07-05ID14517	(63,724)	
Novel Metal Sulfides to Achieve Effective Capture and Durable Consolidation of Radionuclides, FC-1	17	81.RD	00127985//DE-AC07-05ID14517	7,746	(50,099)
Hobbes: OS and Runtime Support for Application Composition	191	81.RD	1403164/9 // DE-AC04-94AL85000	139,218	
Support for Luke Robison	120	81.RD	16-P0811//DE-AC05-06OR23177	8,990	
Novel Tailored-Precipitate Ferritic (TPF) Steels for Reactor Applications	131	81.RD	236658 Mod. 2	2,866	
"Giant" Nanocrystal Quantum Dot for High-Efficiency Solid-State Lighting	131	81.RD	333211//277798//DE-AC52-06NA25396	38,117	
Joint Center for Energy Storage Research	217	81.RD	3F-31142-M0008 // DE-AC02-06CH11357	145,935	
Using Hard X-rays to Accelerate the Synthesis of Materials	217	81.RD	3J-30081 // 3J-30081-0052A	55,645	
Apply Uncertainty Analysis Procedure to Vision Model	217	81.RD	3J-30081 // 3J-30081-0059A	12,987	
Li Ion Battery X-ray Interface Studies	217	81.RD	3J-30081 REVISION NO. 0014B	51,664	
MICCoM Water Electrode Studies	217	81.RD	3J-30081-0054A//31-30081	28,144	
Rational Synthesis of Superconductors	217	81.RD	3J-30081 // 3J-30081-0017A REV 0017J	38,224	
Understanding Complex Oxide Surfaces in Reactive Environments	217	81.RD	3J-30081//3J-30081-0019H	41,762	
Development of Rail Mode Energy and Emissions Characteristics in the GREET Model	217	81.RD	3J-30081/3J-30081-0028C	1,949	
Support for Matthew Dietrich	217	81.RD	3J-30081/3J-30081-0037A	(288)	
Support for Daikang Yan	217	81.RD	3J-30081/3J-30081-0038A//DE-AC02-06CH11357	40,392	
Using Hard X-rays to Accelerate the Synthesis of Materials	217	81.RD	3J-30081/3J-30081-0041A	13,712	
Student support for Angela Chang	217	81.RD	3J-30081/3J-30081-0045A/0045B	1,172	
Dynamics of Active Self-Assembled Materials	217	81.RD	3J-30081/3J-30081-0053A	17,843	
Synchrotron X-Ray and Computational Studies of Strains and Phase Changes in Battery Materials		81.RD	3J-30081-0006D//BOA 3J-30081	10,260	
Biomimetic Hybrid Architectures for Solar Chemical Energy Conversion	217	81.RD	3J-30081-0007A (0007C)//DE-AC02-06CH11357	17,720	
Synchrotron X-ray Studies of Nanostructured Polymer Films, Fibers and Composites	217	81.RD	3J-30081-0013A Revision No. 0013E	40,392	
Synthesis and Modification of Graphene for Catalytic and Plasmonic Applications-Brian Kiraly	217	81.RD	3J-30081/3J-30081-0016D	38,000	
Energy-Economic Systems Analysis of Emerging Manufacturing Technologies	217	81.RD	3J-30081-0022A/0022H//DE-AC02-06CH11357	34,130	
Optimizing Superconductor Transport Properties	217	81.RD	3J-30081//3J-30081-0024A Rev 0024D	39,650	
Small Worlds Project Development of algorithms and models for 3D Snapshot Holographic Interferometric Microscopy (3D-SIHM) Subproject	217	81.RD	3J-30081-0030A//DE-AC02-06CH11357	35,324	
Understanding Complex Oxide Thin Film Synthesis	217	81.RD	3J-30081//3J-30081-0031G//3J-30081	40,716	
Support for Junjing Deng	217	81.RD	31-30081-0033A/ 0033D	36,906	
Support for Kenan Li	217	81.RD	3J-30081-0035A-0035F	41,243	
Support for Young Pyo Hong	217	81.RD	3J-30081-0036C	42,080	
Structural Characterization in Photocatalysis	217	81.RD	3J-30081-0039A// DE-AC02-06CH11357	60,832	

**Northwestern University**

Schedule of Expenditures of Federal Awards  
For the Year Ended August 31, 2016

Research Type/Federal Grantor/Subagency/Project Title	Pass-through ID	CFDA	Sponsor Award Number	FY16 Expense	Passed to Subrecipients
The Design of Novel A2B2O5 Oxide Heterostructures	217	81.RD	3J-30081-0040A	<b>54,241</b>	
Student support for Michael Wagner	217	81.RD	3J-30081-0042C	<b>50,387</b>	
Student support for Matthew Kirschner	217	81.RD	3J-30081-0043A	<b>52,085</b>	
Center for Emergent Superconductivity (CES)	217	81.RD	3J-30081-0046A //DE-AC02-06CH11357	<b>76,579</b>	
Develop Few-atom Clusters for Solar Fuels Catalysis	217	81.RD	3J-30081-0047A	<b>30,228</b>	
Nanolaminate Coatings for Improved Nuclear Fuel Cladding Performance	217	81.RD	3J-30081-0049C//3J-30081-0049A	<b>61,426</b>	
Small Worlds Project Development of algorithms and models for 3D					
Snapshot Holographic Interferometric Microscopy (3D-SIHM) Subproject	217	81.RD	3J-30081-0050A//DE-AC02-06CH11357	<b>45,028</b>	
Raman Spectroscopy of Catalysis	217	81.RD	3J-30081-0051C	<b>79,559</b>	
Multi-objective Algorithm Optimization of Interfacial Structures	217	81.RD	3J-30081-0055A//3J-30081	<b>27,724</b>	
Midwest Integrated Center for Computational Materials	217	81.RD	3J-30081-0056A//3J-30081	<b>114,582</b>	
Supported Single-Site Catalysts for Selective Alkane Oxidation	217	81.RD	3J-30081-0057A Rev. 0057B//3J-30081	<b>36,971</b>	
Refractory Solar Selective Coatings	217	81.RD	3J-30081-0058A//3J-30081	<b>46,484</b>	
Support for Ming-Feng Tu	217	81.RD	3J-30081-0060A	<b>10,053</b>	
Geochemical Equilibria and Reaction Dynamics: Atomic- to Pore-Scale Processes	276	81.RD	4000125713/DE-AC05-000R22725	<b>11,218</b>	
Center for Electrochemical Energy Science - II	217	81.RD	4F-32002 M0001//DE-AC02-06CH11357	<b>781,887</b>	
Understanding Roles of Ultrafast and Coherent Electronic and Atomic					
Motions in Photochemical Reactions	217	81.RD	4F-3232 M0003//DE-AC02-06CH11357	<b>262,270</b>	
Joint Appointment Agreement for Gabriel Abelof	217	81.RD	5010100-137	<b>38,805</b>	
Lei Fang - Joint NU/Argonne appointment	217	81.RD	09268-00-105	<b>116,592</b>	
Thermoelectric Transport Properties from Materials Project Database	227	81.RD	7218473 Mod 2//DE-AC02-05CH11231	<b>50,966</b>	
Raman Spectroscopy of Catalysis	217	81.RD	8J-00061-0031A/ Revision No. 0031E	<b>13,260</b>	
Nanolaminate Coatings for Improved Nuclear Fuel Cladding Performance	217	81.RD	8J00061//8J00061-0043A Revision No. 0043D	<b>4,941</b>	
James Rondinelli-Joint NU/Argonne Appointment	217	81.RD	Agmt 07/11/2016	<b>44,896</b>	
Argonne Joint Appointment - Wasielewski	217	81.RD	Agmt 11/12/14	<b>53,184</b>	
Emine Begum Gulsoy-Joint NU/Argonne Appointment	217	81.RD	Agmt 9/23/15	<b>11,610</b>	
Fermi Joint Appointment - Eric Dahl	72	81.RD	Agmt 6/27/12// 610906 Rev 3// DE-AC02-07CH11359	<b>71,585</b>	
Argonne Joint Appointment - Kanatzidis	217	81.RD	Agmt. 08/20/14	<b>170,215</b>	
Joint Appointment Agreement - Petriello	217	81.RD	Agmt. 08/26/14	<b>121,365</b>	
Joint Appointment Agreement - Stair	217	81.RD	Agmt. 08/27/14	<b>108,205</b>	
Argonne Joint Appointment Agreement - Nguyen	217	81.RD	Agmt. 09/09/14	<b>24,406</b>	
Argonne Joint Appointment - Low	217	81.RD	Agmt. 10/14/14	<b>98,226</b>	
Argonne Joint Appointment - Hupp	217	81.RD	Agmt. 10/23/14	<b>40,852</b>	
Argonne Joint Appointment - Poeppelmeier	217	81.RD	Agmt. 11/14/14	<b>92,350</b>	
Monolayer Semiconductor Quantum Dots for Efficient Energy Conversion	217	81.RD	Award Letter 8/14/14	<b>18,308</b>	
Development of High-Performance Cast Crankshafts	34	81.RD	C274812 Amd 3//DE-EE0006428	<b>111,768</b>	
Protected High-Capacity Anodes for Li-ion Battery Applications	217	81.RD	Check 10/9/13	<b>12</b>	

**Northwestern University**

Schedule of Expenditures of Federal Awards  
For the Year Ended August 31, 2016

Research Type/Federal Grantor/Subagency/Project Title	Pass-through ID	CFDA	Sponsor Award Number	FY16 Expense	Passed to Subrecipients
Development of a New, Lightweight Alloy for Advanced Cylinder Heads in High-Efficiency, Light-Duty Engines	79	81.RD	DE-EE0006082 // PO# TCS67912-001	<b>205,789</b>	
Energy, Environmental and Economic Systems Analysis and Optimization of Advanced Hydrocarbons Biofuels	217	81.RD	Letter 5/31/13	<b>48,104</b>	
High Efficiency Solar Thermochemical Reactor for Hydrogen Production	191	81.RD	PO 1513586//DE-AC04-94AL85000	<b>15,165</b>	
Support for Kristian Hahn	72	81.RD	PO No. 622384-1	<b>33,011</b>	
US CMS Phase 2 Upgrade R&D - Endcap Calorimeter	72	81.RD	PO No. 622384-1	<b>6,880</b>	
Supplemental funding for US CMS Northwestern University for Activities Related to the US CMS Phase 2 Upgrade R&D Subsystem	72	81.RD	PO# 622384	<b>20,300</b>	
Parallel I/O Library Optimizations Using Dynamic Subfiling	191	81.RD	PO#1032595/1 // DE-AC04-94AL85000	<b>(489)</b>	
Concurrent Optimization of Component Capital Cost and Expected O&M	7	81.RD	XEJ-6-62151-01 // DE-AC36-08G028308	<b>1,844</b>	
PICO-60 Installation and Operations at SNOLAB	72	81.RD	PO No. 625740 // DE AC02-07CH11359	<b>25,712</b>	
Advanced Research Projects Agency-Energy					
A Novel Hierarchical Frequency-Based Load Control Architecture		81.135	DE-AR0000702	187,853	
Versatile Single-Component Protein Scaffolds for Methane C-H Activation		81.135	DE-AR0000435 Mod 0004	<u>108,419</u>	43,412
				<b>296,272</b>	<b>43,412</b>
Intermediate Temperature Fuel Cell Stack	218	81.RD	PO2603659//Agmt 1215334//DE-AR0000498	<b>203,235</b>	
National Energy Technology Laboratory					
Integrated Computation Materials Engineering (ICME) Development of Carbon Fiber Composites for Lightweight Vehicles	74	81.086	RQ15-016R02 Mod 1//DE-EE0006867	<b>501,324</b>	
National Nuclear Security Administration					
Bayesian Methods for Data Integration		81.113	DE-NA0002520	149,434	80,000
Ternary Heavy Metal Halide Semiconductors for Y-Radiation Detection		81.113	DE-NA0002522	<u>250,945</u>	
				<b>400,379</b>	<b>80,000</b>
<b>Department of Energy Total</b>				<b>22,284,914</b>	<b>2,037,786</b>
Department of Health and Human Services					
Evaluation of the Dementia-Capable Home & Community Services Grant	105	93.051	DCG1407//90DS2004-01-00	<b>21,519</b>	
National Health Education Program on Lupus for Healthcare Providers (NHEPLHP)	10	93.137	Agmt 01-29-15 / 1CPIMP141065-01-00	<b>24,006</b>	<b>20,610</b>

**Northwestern University**

Schedule of Expenditures of Federal Awards  
For the Year Ended August 31, 2016

Research Type/Federal Grantor/Subagency/Project Title	Pass-through ID	CFDA	Sponsor Award Number	FY16 Expense	Passed to Subrecipients
Administration for Children and Families					
The Northwestern University Two-Generation Child and Family Outcomes Study of CAP Tulsa's CareerAdvance® Program	47	93.093	Agmt 8/24/16	<b>30,144</b>	
Expanding the Cycle of Opportunity: Simultaneously Educating Parents and Children in Head Start		93.600	90YR0073-02-00	133,665	72,559
Expanding the Cycle of Opportunity: Simultaneously Educating Parents and Children in Head Start (non-competing continuation)		93.600	90YR0073-03-00	<u>392,976</u>	<u>97,814</u>
				<b>526,641</b>	<b>170,373</b>
CareerAdvance: A Dual-Generation Programs Effects on Families and Children		93.647	90PH0020-04-00	<b>171,106</b>	<b>91,268</b>
CareerAdvance	47	93.RD	Agmt 11/11/14 (Amd 2)	<b>64,033</b>	<b>39,865</b>
Administration for Community Living					
Advanced Rehabilitation Research and Training (ARRT) Program		93.433	90AR5015-02-00	78,257	12,275
Advanced Rehabilitation Research and Training (ARRT) Program		93.433	90AR5010-02-00	123,210	
Enhancing Written Communication in Persons with Aphasia: A Clinical Trial	180	93.433	CL#2185//900F0034-01-00	2,656	
Field Initiated Project Programs Motivational Interviewing and Physical Activity Change in Parkinson's Disease	180	93.433	81421//901F0093-01-00	48,614	
Improving Measurement of Medical Rehabilitation Outcome - R1, R3, R5, T1 and T3	180	93.433	CC#80474//90RT5008-01-00	(12,935)	
INTERPRETING COPD DYSPNEA CHANGE: SENSITIVITY, RESPONSIVENESS, AND PREDICTIVE VALIDITY OF THE DMQ-CAT	180	93.433	CC#80498//901F0078-01-00	21,663	
Machines Assisting Recovery from Stroke and Spinal Cord Injury for Reintegration into Society (MARS3)	180	93.433	CC 81765//90RE5010-02-00	67,447	
Northwestern University Advanced Rehabilitation Research Training Application		93.433	90AR5019-01-00	13,393	
Northwestern University Advanced Rehabilitation Research Training Application		93.433	90AR5019-02-00	127,533	
Rehabilitation Research Training in Neurologic Communication Disorders		93.433	90AR5015-01-00	19,655	17,196
Rehabilitation Sciences for Basic Scientists & Engineers: An Advanced Training Program		93.433	90AR5010-01-00	5,987	
Rehabilitation Strategies, Techniques, and Interventions	180	93.433	CC# 81353 3037//90ER5013-01-00	79,066	
RERC on Timing Investigation Dosage Implementation	180	93.433	CC# 81348 CL3037//90RE5013-02-02	10,753	
Robot-Aided Diagnosis, Passive-Active Arm Motor and Sensory Rehabilitation Post Stroke	180	93.433	No. CL3752//90DP0069-01-00	2,778	
Technologies to Evaluate and Advance Mobility and Manipulation (TEAMM)	180	93.433	CC# 81904 CL4521//90RE5014-02-00	15,230	
The Development of a Commercial Rehabilitation Device to Regain Arm Function Following Stroke		93.433	90IF0005-01-00	3,161	

**Northwestern University**

Schedule of Expenditures of Federal Awards  
For the Year Ended August 31, 2016

Research Type/Federal Grantor/Subagency/Project Title	Pass-through ID	CFDA	Sponsor Award Number	FY16 Expense	Passed to Subrecipients
The Development of an Algorithm for Intuitive Control of Grasp and Release During Functional Arm Activities Following Stroke		93.433	90IF0090-01-00	166,400	
The Effect of Resistance to Participant-Supported Reaching on Workspace of the Hand in Severe Chronic Stroke		93.433	90IF0020-01-00	(1,096)	
				<b>771,772</b>	<b>29,471</b>
Developing Optimal Strategies in Exercise and Survival Skills to increase Health and Function	180	93.443	Amend. 1 // CL3802, CC81039//90RT5027-01-00	<b>69,536</b>	
Agency for Healthcare Research and Quality					
Health Services Research Training Grant	234	93.225	FP037911//5T32HS000084-19	126,048	
Northwestern University-University of Chicago HSR Postdoctoral Training Program		93.225	2T32HS000078-17	(37,650)	
Northwestern University-University of Chicago HSR Postdoctoral Training Program		93.225	4T32HS000078-19	<u>502,698</u>	<u>226,502</u>
				<b>591,096</b>	<b>226,502</b>
Comparing Options for Management: Patient-centered Results in Uterine Fibroids	61	93.226	203-8985 / 1P50HS023418-02	178,385	
EHR Based Medication Complete Communication Strategy to Promote Safe Opioid Use		93.226	5R18HS023459-03	491,021	48,581
Engaging Patients and Hospitals to Expand Public Reporting in Surgery		93.226	5R21HS021857-03	84,303	17,321
Enhanced Spanish Drug Label Design to Promote Patient Understanding and Use		93.226	R01HS019435	(1,386)	(1,386)
Evaluating the Implementation of a Multi-Component Quality Collaborative		93.226	1R01HS024516-01	89,425	2,920
Health related quality of life and seizure medications after hemorrhagic stroke		93.226	5K18HS023437-02	176,034	2,890
Identifying Opportunities to Reduce STI/HIV Disparities among Recent Offenders.	107	93.226	1N4681903NW//R01HS023318-01A1	1,445	
Improving Outpatient Safety of Older Adults through Electronic Patient Portals		93.226	1R21HS024071-01 REVISED	112,806	22,398
Improving Safety for Ambulatory Surgical Seniors		93.226	5K08HS024158-02	142,107	
Improving the Quality of Pediatric Emergency Care Using an Electronic Medical Record		93.226	5R01HS020270-06	495,315	472,192
In Situ Simulation for Adoption of New Technology to Enhance Safety in Rural EDs		93.226	1R18HS024027-02	146,976	61,752
Innovative Methods for Modeling Longitudinal Medical Costs		93.226	5R01HS020263-04	58,745	56,964
Innovative methods for modeling longitudinal medical costs		93.226	4R01HS020263-05	319,839	152,687
Midwest Small Practice Care Transformation Research Alliance		93.226	5R18HS023921-02 REVISED	3,752,441	2,240,558
Northwestern University – Patient-centered Intervention and Engagement Training		93.226	5K12HS023011-03	757,657	123,666
NU Center to Advance Equity in Clinical Preventive Services		93.226	5P01HS021141-03 REVISED	102,077	39,708
Pediatric Measurement Center of Excellence	143	93.226	Amend //5U18HS020498-04	65,075	39,243
The Center for Education and Research on Therapeutics (CERTs) Scientific Forum	127	93.226	OOS100238-NWSTRN // U19HS021107	8,842	

**Northwestern University**

Schedule of Expenditures of Federal Awards  
For the Year Ended August 31, 2016

Research Type/Federal Grantor/Subagency/Project Title	Pass-through ID	CFDA	Sponsor Award Number	FY16 Expense	Passed to Subrecipients
The Patient-Centered Medical Home: Impact on Mental Health Treatment and Health Services Use among Adolescents with Mental Health Disorders		93.226	1R36HS024183-01	40,892	
Tools for Optimizing Medication Safety (TOP-MEDS)		93.226	7U19HS021093-03	146,295	117,380
Tools for Optimizing Medication Safety (TOP-MEDS)		93.226	4U19HS021093-05	520,959	57,567
Use of Simulation-Based Mastery Learning for Thoracentesis to Improve Outcomes		93.226	5R18HS021202-03	56,508	
				<b>7,745,761</b>	<b>3,454,441</b>
Measurements for NQF Project	143	93.RD	5U18HS020498//HHSP233201550101A	<b>39,374</b>	
The National Implementation of Team STEPPS	91	93.RD	80784//HHS2902010000I Task#9	<b>17,096</b>	
Comprehensive Patient Safety and Medical Liability Communication and Program Resolution Education Toolkit	91	93.RD	HHS290201000025I//80322	<b>6,673</b>	
Centers for Disease Control and Prevention					
Capacity Building and Technical Assistance Activities	89	93.067	109671-5077619 // u/5UGGH000024-03	<b>8,099</b>	
Developing and Disseminating Programs to Build Sustainable Lupus Awareness, Knowledge, Skills, and Partnerships	10	93.068	6NU58DP006138-01-02	<b>35,670</b>	
Community Counts: Public Health Surveillance for Bleeding Disorders (Region #V-West, HTC #553)	85	93.080	ATHN2015-VW-1-553/ 1 NU27DD001155-01-00	<b>16,166</b>	
Young Men who have Sex with Men HPV Prevalence Study	247	93.135	3210000169-16-138//5U48DP005014-02	<b>64,251</b>	
Chicago Center for Youth Violence Prevention	234	93.136	FP061138//1U01CE002712-01	<b>77,233</b>	
Prevention of the Complications of Bleeding Through HTC's	85	93.184	553/ 5U27DD000862-02	<b>3,799</b>	
The roles of TfRs and HSPA5 in Pu uptake		93.262	5R01OH010469-02	(114,712)	
The roles of TfRs and HSPA5 in Pu uptake		93.262	5R01OH010469-02	816	(30,864)
The roles of TfRs and HSPA5 uptake		93.262	5R01OH010469-04	558,270	24,345
				<b>444,374</b>	<b>(6,519)</b>
An Individually Tailored, Family-Centered Intervention for Childhood Obesity: Connecting Services in Pediatric Primary Healthcare, the Home, and the Community	15	93.535	16-955//1U18DP006255-01	<b>38,587</b>	
HIV Behavioral Surveillance Activities	39	93.940	26940//5U1BPS003260	(7,352)	
HIV Behavioral Surveillance Activities	39	93.940	30626//U1BPS003260	242,022	131,088
				<b>234,670</b>	<b>131,088</b>

**Northwestern University**

Schedule of Expenditures of Federal Awards  
For the Year Ended August 31, 2016

Research Type/Federal Grantor/Subagency/Project Title	Pass-through ID	CFDA	Sponsor Award Number	FY16 Expense	Passed to Subrecipients
Effect of ACA Medicaid Expansion on Diabetes: Diagnosis, Treatment, Patient Compliance, and Health Outcomes		93.945	5U18DP006120-02	260,407	61,518
Effectiveness of a National Health Care Community Partnership to Prevent Diabetes		93.945	5U58DP002718-05 Revised	210,714	62,027
				<b>471,121</b>	<b>123,545</b>
Illinois Perinatal Quality Collaborative (ILPQC)	104	93.946	66380016D//U38DP005367	<b>199,473</b>	<b>128,744</b>
PRAMS for DADS Formative Research		93.RD	200-2015-M-63124	<b>62,325</b>	
Biostatistical Support for HIV Outpatient Study (HOPS)	37	93.RD	Amend. 2 10/03/2014//200-2011-41872	<b>4,778</b>	
Evaluation of Rapid HIV Self-Testing Among MSM in High Prevalence Cities	136	93.RD	Agmt signed 2/22/12//200-2011-41989	<b>5,083</b>	<b>3,333</b>
HIV Outpatient Study	37	93.RD	Agreement Date: 6/11/12//CDC No. 200-2011-41872	<b>17,409</b>	
Centers for Medicare & Medicaid Services					
Community Rx System: Linking Patients with Community-Based Service Providers with HIT	234	93.610	FP050938E//1C1CMS330997-01-01	(972)	
Geriatric Emergency Department Innovations (GEDI WISE)	98	93.610	0254-5703-4609/C1CMS331055-03-00	(51,104)	
				<b>(52,076)</b>	
CHIPRA Quality Demonstration Grant Project	90	93.767	3001//MED124-A1	<b>(9,152)</b>	
Estimating Benefits in Risk Reduction from Cardiovascular Preventive Therapies in Medicare Patients	148	93.RD	106955//HHSM-500-2012-00008I	<b>102,381</b>	
Patient Safety Education Program - Hospital Engagement Contractor	124	93.RD	Fully-executed 2/28/12	<b>4,078</b>	
Food and Drug Administration					
Phase 2 Study of Esophageal String Test in Diagnosing Eosinophilic Esophagitis	243	93.103	Agmt Dated 9/9/2014//1R01FD004086-03	8,027	
Phase 2 Study of Intravenous Gallium Nitrate in the Treatment of Cystic Fibrosis	274	93.103	UWSC8836//2R01FD003704-03A1	79	
				<b>8,106</b>	
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	<b>48,232</b>	
Health Resources and Services Administration					
Hemophilia Liver Transplantation OLTX Observational Study (HOTS)	93	93.110	H30MC24050	2,718	
Hemophilia Treatment Center (HRSA Award)	85	93.110	H30MC24052	25,906	
				<b>28,624</b>	

**Northwestern University**

Schedule of Expenditures of Federal Awards  
For the Year Ended August 31, 2016

Research Type/Federal Grantor/Subagency/Project Title	Pass-through ID	CFDA	Sponsor Award Number	FY16 Expense	Passed to Subrecipients
A joint CCHHS/Northwestern Preventive Medicine Residency with Integrative Health Care Training Program	92	93.117	01351-NoA-NWU01//D33HP29245-01-01	<b>40,898</b>	
Evaluation of a Culturally Competent Website on Living Kidney Donation for Hispanics		93.134	4 R390T22059-03-02	<b>54,089</b>	<b>27,527</b>
Graduate Psychology Education Program		93.191	1 D40HP25719-01-00	3,660	3,389
Graduate Psychology Education Program		93.191	5 D40HP25719-03-00	<u>160,171</u>	<u>23,568</u>
				<b>163,831</b>	<b>26,957</b>
Illinois Perinatal Quality Collaborative (ILPQC)	104	93.505	66380016D//U38DP005367	4,259	
Mothers and Babies Illinois: Maternal, Infant and Early Childhood home Visiting Program (MIECHVP)	103	93.505	FCSUS03738	<u>20,760</u>	
				<b>25,019</b>	
Affordable Care Act Teaching Health Center (THC) Graduate Medical Education (GME) Payment Program		93.530	2T91HP215420300	2,081,961	543,603
Northwestern McGaw Family Medicine Residency Program, McGaw Medical Center of Northwestern University, on Behalf of Northwestern McGaw Family Medicine Residency Program at Erie Family Health Center and FQHC		93.530	2T91HP21542-03-01	<u>324,837</u>	<u>324,837</u>
				<b>2,406,798</b>	<b>868,440</b>
Academic Units for Primary Care Training and Enhancement		93.884	1UH1HP29963-01-00	6,972	
Faculty Development in Primary Care Program		93.884	D55HP23201-04-00	<u>384,115</u>	<u>377,690</u>
				<b>391,087</b>	<b>377,690</b>
Use of Social Media to Improve Engagement, Retention, and Health Outcomes along the HIV Care Continuum	96	93.928	AGREEMENT 3/10/16 // 1 H97HA288910100	<b>18,306</b>	
Better Health through Education and Transformation of Older Adult care in Illinois	187	93.969	1UQHP28715-01-00//6U1QHP287150101	<b>1,007</b>	
Building Data Infrastructure in the Safety Net to Conduct Patient-Centered Outcomes Research	8	93.RD	001C-06//HSH25201400001C	<b>20,300</b>	
Building Data Infrastructure in the Safety Net to Conduct Patient-Centered Outcomes Research	8	93.RD	001C-07//HSH25201400001C	<b>6,798</b>	
Building Data Infrastructure in the Safety Net to Conduct Patient-Centered Outcomes Research	8	93.RD	001C-08//HSH25201400001C	<b>9,373</b>	

**Northwestern University**

Schedule of Expenditures of Federal Awards  
For the Year Ended August 31, 2016

Research Type/Federal Grantor/Subagency/Project Title	Pass-through ID	CFDA	Sponsor Award Number	FY16 Expense	Passed to Subrecipients
National Institutes of Health					
American Heart Association Tobacco Regulation and Addiction Center "A-TRACK"	11	93.077	FX-ATRAC-NWU-04//4P50HL120163-04	<b>385,970</b>	
Association of ALS to gene-environment mediated changes in HDL proteins		93.113	5R01ES022310-03 REVISED	123,457	
Association of ALS to gene-environment mediated changes in HDL proteins		93.113	4R01ES022310-04	494,766	
Carbon Nanotube Structure-Activity Relationships for Predictive Toxicology	228	93.113	0521 G RA276 Amd 3//5R01ES022698-03	122,139	
Epigenetic Mechanisms of PM-Mediated CVD Risk	260	93.113	5032970//5R01ES020836-04	113,756	
Epigenetic Mechanisms of PM-Mediated CVD Risk	260	93.113	5104343//4R01ES020836-05	11,089	
Ex Vivo Female Reproductive Tract Integration In a 3D Microphysiologic System		93.113	3UH3TR001207-05S1	1,770,914	193,528
Gene-Environment Interaction of ZnT8 and Cadmium - A Link to Diabetes Mellitus?		93.113	4K08ES020880-05	112,218	
Gene-Environment Interaction of ZnT8 Cadmium - A Link to Diabetes Mellitus?		93.113	1K08ES020880-03	(8,763)	
Histone Modifications and Respiratory Effects of Traffic Particle Exposure		93.113	1R21ES020984-01A1	58,978	58,978
Mechanisms of airborne particulate matter induced thrombosis	234	93.113	FP058473/7R01ES015024	38,449	
Micro-RNA Profiling and Cardiovascular Effects of Traffic Particle Exposure		93.113	1R21ES020010-02	(4,261)	(4,261)
Mitigation of asbestos induced alveolar epithelial cell injury		93.113	4R01ES020357-05	207,019	
Mitigation of Asbestos-Induced Alveolar Epithelial Cell Injury		93.113	5R01ES020357-04 REVISED	32,762	
Molecular and Epigenetic Mitochondriomics of Air Particles, Lead and Cognition	89	93.113	112474-5052023//5R01ES021733-03	11,034	
Protein Adducts as Measures of Exposure Throughout Childhood Development		93.113	1R21ES026776-01	6,153	
Regulation of the DNA and RNA methylome by PM-induced mitochondrial ROS and IL-6	234	93.113	FP059070-02//R21ES025644	32,376	
Signaling in the Lung Induced by Particulate Matter Air Pollution		93.113	5R01ES013995-10	50,900	3,036
The role of alpha-T-catenin in the pathogenesis of occupational asthma		93.113	5F30ES024622-02	36,002	
				<b>3,208,988</b>	<b>251,281</b>
Cortico-Striatal Plasticity in the Transition to Chronic Pain		93.121	5R01DE022746-04	907,197	
Cortico-striatal plasticity in the transition to chronic pain		93.121	4R01DE022746-05 REVISED	177,978	
Epigenetic Profiling of Oral Cancer Cells		93.121	5R21DE024388-02	156,930	
Matrix Component Interactions in Bone, Dentin, and Invertebrate Mineral		93.121	5R01DE001374-52	(51,997)	
Nanoscale structure and phase composition of sound and carious enamel		93.121	5R03DE025303-02	161,942	
Nanotechnology Strategies for the Growth of Bones and Teeth		93.121	5R01DE015920-10	372,145	251,160
NRSA: SoxE Regulation of Neural Crest Development		93.121	5F31DE021922-04 REVISED	1,499	
The role of amorphous intergranular phases in the development of caries lesions		93.121	1R01DE025702-01	62,224	
				<b>1,787,918</b>	<b>251,160</b>

**Northwestern University**

Schedule of Expenditures of Federal Awards  
For the Year Ended August 31, 2016

Research Type/Federal Grantor/Subagency/Project Title	Pass-through ID	CFDA	Sponsor Award Number	FY16 Expense	Passed to Subrecipients
A Personalized Genomic Medicine Pilot Program Using the NUGene eMERGE Experience		93.172	5U01HG006388-04	174,946	
Embedding Pharmacogenotyping in an Integrated Health System for the Underserved	106	93.172	IN4687739NU//U01HG007762	4,465	
eMERGE Coordinating Center	277	93.172	VUMC43402//5U01HG006385	24,453	
Gene Ontology Consortium	118	93.172	Agmt 7/31/12//2U41HG002273-16	79,830	
Genomic Medicine at Northwestern: Discovery and Implementation		93.172	5U01HG008673-02S1	967,148	
Interactive Multimedia Consent for Biobanking	245	93.172	W000741630//1R01HG008348-01	74,399	
				<b>1,325,241</b>	
A Family-Genetic Study of Language in Autism		93.173	5R01DC010191-06 REVISED	14,418	
Ability of older adults to benefit from dynamic pitch for speech recognition in noise		93.173	5F32DC014629-02	50,656	
Acoustic and Perceptual Effects of WDRC Amplification		93.173	5R01DC006014-11	170,076	38,908
Acoustic and Perceptual Effects of WDRC Amplification		93.173	2R01DC006014-12A1 REVISED	9,980	
Anatomical Physiology of Semantic Associations in Primary Progressive Aphasia		93.173	5R03DC013386-03	147,058	
Aphasia Rehabilitation: Modulating Cues, Feedback, and Practice Conditions	181	93.173	CC#88205 R01DC011754	12,712	
Atrophy and resting state connectivity in primary progressive aphasia		93.173	5 K23 DC014303-02	111,692	
Attention-dependent neural oscillations in the human olfactory system		93.173	5R00DC012803-04	245,451	
Auditory Function at the Base of the Human Cochlea		93.173	5F31DC013710-02	2,247	
Can Consumers and Audiologists Detect Ear Disease Prior to Hearing Aid Use?		93.173	R21DC013115-02	82,861	82,243
Can Consumers and Audiologists Detect Ear Disease Prior to Hearing Aid Use?	154	93.173	5R33DC013115-04	270,065	125,385
Cellular Mechanisms Underlying Corticocollicular Modulation in the Auditory System	263	93.173	0033928 (124432-1)//5R56DC031272-02	117,663	
Characterizing Variability in Hearing Aid Outcomes Among Older Adults		93.173	5R01DC012289-04	211,534	127,048
Characterizing Variability in Hearing Aid Outcomes Among Older Adults		93.173	4R01DC012289-05	88,917	
Core Center for Integrated Research on Human Communication Disorders		93.173	5P30DC012035-03	350,475	
Core Center for Integrated Research on Human Communication Disorders		93.173	4P30DC012035-04	168,234	
CRCNS US-French Research Proposal Plastic Neural Circuits in Olfactory Learning		93.173	5R01DC015137-02	59,794	
Defining molecular mechanisms in the SLC26 family of proteins		93.173	5R03DC014553-02	148,703	
Dynamic Interaction Among Proteins in Hair Cells		93.173	5R01DC011813-04	100,290	
DYNAMIC INTERACTION AMONG PROTEINS IN HAIR CELLS		93.173	4R01DC011813-05	151,543	
Functional Expression of Human Trace Amine-Associated Receptors in Mice		93.173	5R21DC013188-02	607	
Genetic Determinants of Taste Preferences and Risk of Metabolic Disease		93.173	7R03DC013373-03	130,979	28,076
Glomerular domains and olfactory circuitry		93.173	1R03DC014565-01A1	95,064	
Interactive-specialization of language impairment	268	93.173	UTA14-001199//1R01DC013274-01A1	6,570	
Language in Primary Progressive Aphasia		93.173	5R01DC008552-09	389,597	
Language in Primary Progressive Aphasia		93.173	4R01DC008552-10	212,892	
Mapping and function of odorant receptors in the human olfactory system		93.173	5R01DC014426-02 REVISED	768,496	
Mechanisms Regulating Synaptic Function in the Developing Auditory System		93.173	5R03DC013841-02	142,343	

**Northwestern University**

Schedule of Expenditures of Federal Awards  
For the Year Ended August 31, 2016

Research Type/Federal Grantor/Subagency/Project Title	Pass-through ID	CFDA	Sponsor Award Number	FY16 Expense	Passed to Subrecipients
Nanotechnological Regeneration of Spiral Ganglion Neurons with Human Stem Cells		93.173	5K08DC013829-03	226,871	
Networks Underlying Visual Modulation of Speech Perception		93.173	1K99DC013828-01A1	125,628	
Neural Correlates of Auditory Function and Training in Older Adults		93.173	5R01DC010016-05	68,233	
Neurobiology of Language Recovery in Aphasia: Natural History and Treatment-Induced Recovery		93.173	5P50DC012283-03	1,809,562	1,077,036
Neurobiology of Language Recovery in Aphasia: Natural History and Treatment-Induced Recovery		93.173	4P50DC012283-04	709,902	94,432
NRSA F32 for Emily M Mugler in support of: The Cortical Dynamics of Motor Activity During Speech Production		93.173	1F32DC015708-01 REVISED	8,545	
NRSA: Translational Research in Communication Sciences and Disorders		93.173	5T32DC009399-05	(741)	
Olfactory Signaling, Cilia, and Sensory Disorders	240	93.173	UFDSP00010712//5R01DC009606-07	380	
Online measure of selective attention and neural function in real-world-listening		93.173	5F31DC014221-02	33,941	
Perceptual Coding and Modulation of Odor Objects in the Human Brain		93.173	5R01DC010014-08	509,099	
Peripheral Mechanisms of Hearing		93.173	5R01DC000419-24	23,652	8,901
Pre-Implantation Communication Treatment for Children with Hearing Loss		93.173	5R03DC012639-04	107,593	
PROMIS-Deaf Profile: Inclusion of Deaf Patients in Disability and Outcomes Research	185	93.173	31578-02//R01-DC014463-01	8,696	
Proteome Biology of Noise Induced Hearing Loss		93.173	5R00DC013805-03	277,559	
Rhythm and temporal processing in the perception of speech in noise		93.173	5F31DC014891-02 REVISED	36,845	
Role for B-cell Mediated Olfactory Loss in Chronic Rhinosinusitis with Nasal Polyps		93.173	5K23DC012067-02	52,740	
Role of B-cell mediated inflammation in Chronic Rhinosinusitis with Nasal Polyps		93.173	4K23DC012067-05 REVISED	171,232	
Sensory Interaction in Voice and Voice Disorders	275	93.173	6Z9K031//1R01DC014519-01A1 Amd 1	47,897	
Spatiotemporal Mechanisms of Olfactory Processing in the Human Brain		93.173	5R01DC013243-03	184,996	
Spatiotemporal Mechanisms of Olfactory Processing in the Human Brain		93.173	4R01DC013243-04	55,087	
Structural Basis for KCNE Modulation of the KCNQ1 Channel	277	93.173	VUMC42969//R01DC007416	17,364	
Studies in Cochlear Hair Cell Transduction		93.173	5R01DC000089-45	484,896	
Talker-Listener Alignment During Speech Production and Perception		93.173	5R01DC005794-09	31,762	
The role of parent phenotype in parent-mediated language interventions for autism		93.173	5R01DC014709-02	623,084	63,098
The Roles of Espins in Hair Cell Stereocilia		93.173	5R01DC004314-15	401,088	
Trace Amine-Associated Receptors and Olfactory Behavior in Mammals		93.173	5R01DC013576-03	477,232	
Understanding the Benefits of Infrared Nerve Stimulators for Neural Interfaces		93.173	5R01DC011855-04	243,203	
Understanding the Benefits of Infrared Nerve Stimulators for Neural Interfaces		93.173	4R01DC011855-05	249,201	
Understanding the Voice Control System in Parkinson's Disease	194	93.173	NW0001//1R03DC013883-02	4,899	
User-centered control of hearing aid signal processing	24	93.173	Agreement 21116 // 7R44DC013093-03	26,348	
				<b>11,277,711</b>	<b>1,645,127</b>
Brain mechanisms for clinical placebo in chronic pain		93.213	5R01AT007987-03	265,990	
Brain mechanisms for clinical placebo in chronic pain		93.213	4R01AT007987-04 REVISED	387,713	

**Northwestern University**

Schedule of Expenditures of Federal Awards  
For the Year Ended August 31, 2016

Research Type/Federal Grantor/Subagency/Project Title	Pass-through ID	CFDA	Sponsor Award Number	FY16 Expense	Passed to Subrecipients
Investigating Pain Processing in the Brain, Brainstem, and Spinal Cord with fMRI		93.213	5F32AT007800-03	15,020	
Mass Spectrometric Studies of Thiotemplate Biosynthesis		93.213	9R01AT009143-13A1	73,730	
Mechanisms of Probiotic Analgesia		93.213	5R01AT007701-03	328,186	
				<b>1,070,639</b>	
Sleep Disturbance and Risk for Adverse Pregnancy Outcomes		93.233	R01HL105549	<b>70,657</b>	<b>27,944</b>
1/2 - Online Collaborative Learning Intervention to Prevent Perinatal Depression	243	93.242	2015-02053-01-00//R34MH102478	123,991	
2/2 - Suicide Prevention in Chinese Older Adults		93.242	5R34MH100393-03	140,056	15,597
2/2 Targeted Sequencing and Functional Evaluation of Mutations in Schizophrenia	162	93.242	EH13-344-S2//5R01MH100915-03	35,282	
A Family-Genetic Study of Autism and Fragile X Syndrome		93.242	5R01MH091131-04	445,605	184,610
A Family-Genetic Study of Autism and Fragile X Syndrome		93.242	4R01MH091131-05	256,292	
A Mobile Behavioral Monitoring Intervention for Bipolar Disorder		93.242	5R34MH100460-03	215,041	
Acute Estradiol Regulation of Excitatory Synapses in the Hippocampus		93.242	5R01MH095248-04 REVISED	79,727	
Acute Estradiol Regulation of Excitatory Synapses in the Hippocampus		93.242	4R01MH095248-05 REVISED	249,066	
Age-Related Histone Modification Effect on Antipsychotic Action		93.242	1R01MH109466-01	64,791	
Aging and Antipsychotic Efficacy - Epigenetic Mechanisms		93.242	5R21MH100919-02 REVISED	13,158	
Artificial Intelligence in a Mobile Intervention for Depression (AIM)		93.242	5R01MH100482-03	506,761	41,521
Artificial Intelligence in a Mobile Intervention for Depression (AIM)		93.242	4R01MH100482-04	54,542	
Behavioral relevance of active dendritic mechanisms of integration and plasticity		93.242	5R01MH101297-03	287,023	
Behavioral Relevance of Active Dendritic Mechanisms of Integration and Plasticity		93.242	4R01MH101297-04	196,435	
Chloride homeostasis and GABA maturation in fragile X syndrome		93.242	5R21MH104808-02	231,161	
Collaborative Data Synthesis for Adolescent Depression Trials		93.242	7 R01 MH040859-26	84,240	44,295
Connecting Patients and Therapists Using a Tech-Based Treatment Support System	153	93.242	5K08MH102336-03	135,589	
Core C:Genomics, Proteomics & Pheotyping; Conte Center for Computational System Genomics of Neuropsychiatric Phenotypes	234	93.242	FP046983-E//1P50MH094267-05	109,375	
Cortico-Hippocampal Mechanisms of Context Memory		93.242	1R01MH108837-01A1	44,904	
Developing an Integrated Mental Health Model for Home Visitation		93.242	7 R34 MH093514-03	81,121	40,445
Development of a Mobile System for Self-Management of Schizophrenia (SOS)	58	93.242	1258R74//R34MH100195-03	11,755	
Dimensions of Early Temper Loss and Low Concern: Clinical Utility and Mechanisms		93.242	5U01MH082830-08	1,096,193	170,020
Discovery of novel small molecule antidepressants		93.242	1R01MH106511-01A1	108,547	
Early Traumatic Stress Exposure: Neurodevelopmental Mechanisms of Clinical Risk:					
VEX Genetics Supplement	239	93.242	UCHC6-65393570-01//U01-MH090301	59,557	

**Northwestern University**

Schedule of Expenditures of Federal Awards  
For the Year Ended August 31, 2016

Research Type/Federal Grantor/Subagency/Project Title	Pass-through ID	CFDA	Sponsor Award Number	FY16 Expense	Passed to Subrecipients
Early Traumatic Stress Exposure: Neurodevelopmental Mechanisms of Clinical Risk	239	93.242	UCHC6-67337016 // U01-MH090301	(20,482)	
Effectiveness Trial of Youth Suicide Prevention Delivered by Teen Peer Leaders	264	93.242	416177-G//R01MH091452	54,039	
Evaluation of antidepressant-like effects of hippocampal HCN channel modulation		93.242	5R21MH104471-02	180,490	
Exercise and markers of medial temporal health in youth at-risk for psychosis	237	93.242	1554212 // 1R21MH103231-01A1	7,194	
Exercise and markers of medial temporal health in youth at-risk for psychosis		93.242	4R33MH103231-03	30,895	
From Irritability to Impairment: How Neurodevelopment of Executive Function and Parent-Child Neural Synchrony Influence the Transition from Normal to Abnormal	263	93.242	0046528 (126659-1)//1R01MH107540-01	33,466	
Generating an Earlier Science of When to Worry: A Neurodevelopmental, Transactional Approach to Characterizing Irritability Patterns Beginning in Infancy		93.242	1R01MH107652-01A1	355,263	
Identification of cell type specific actions of antipsychotic drugs	186	93.242	AGMT 6/30/14 // P50MH090963	57,548	
IGFI and Depression		93.242	5R01MH094835-04	192,621	
IGFI and Depression		93.242	4R01MH094835-05	155,854	
Internet Psychotherapy for Treating Bipolar Disorder in Primary Care	263	93.242	0046483(126383-1)//1R34MH107541-01	103,285	
Kainate receptor signaling in striatal synaptic function and plasticity		93.242	5F31MH099807-03	23,129	
LATIN-MH: Latin America Treatment and Innovation Network in Mental Health	77	93.242	2015.86612.001//U19MH098780	38,121	
LiveWell: A Mobile Intervention for Bipolar Disorder		93.242	1R01MH110626-01 REVISED	6,615	
Mechanisms of Stress-Enhanced Aversive Conditioning		93.242	5R01MH078064-08	120,527	
Mechanisms of Stress-Enhanced Aversive Conditioning		93.242	2R01MH078064-10	180,452	
Mobile Applications for Depression: Comparing Cognitive and Behavioral Approaches		93.242	5F31MH106321-02	31,561	
Mobile Technology to Engage and Link Patients and Providers in Antidepressant Treatment		93.242	R34MH095907	51,965	
Molecular mechanisms of Abnormal Dendritic Spine Plasticity in Schizophrenia		93.242	5R01MH097216-04	114,148	
Molecular mechanisms of abnormal dendritic spine plasticity in schizophrenia		93.242	4R01MH097216-05	434,804	
Necessary Role of PFC-MTL Interactions in Memory Tested in Humans Using TMS	26	93.242	4500001881//5P50MH094263-05	113,913	6,050
Noninvasive Manipulation of Hippocampal-Cortical Brain Networks and Memory		93.242	5R01MH106512-02	565,601	40,004
Noninvasive modulation of prefrontal contributions to the organization of episodic memories		93.242	1R21MH108863-01	66,073	
Novel Methods for Evaluation and Implementation of Behavioral Intervention Technologies for Depression	45	93.242	1(GG008480)//1R01MH1094696-01	16,811	
NRSA F30 for Daniel W Fisher in support of: Role of HCN Channels in Major Depressive Disorder Etiology and Treatment		93.242	5F30MH109249-02	32,668	
Perception and central coherence in autism: A family genetic eye-tracking study		93.242	1R03MH107834-01A1	18,797	
Plasticity of Auditory Cortical Circuits in Schizophrenia	263	93.242	0038377 (1245412-1)//5R01MH07533-13	111,989	
Positive Affect Regulation for HIV Prevention in People with Mood Disorders		93.242	7K24MH093225-05	74,318	
Positive affect skills for depression: Optimizing internet and mobile delivery		93.242	5R34MH101265-03	225,584	70,500

**Northwestern University**

Schedule of Expenditures of Federal Awards  
For the Year Ended August 31, 2016

Research Type/Federal Grantor/Subagency/Project Title	Pass-through ID	CFDA	Sponsor Award Number	FY16 Expense	Passed to Subrecipients
Postsynaptic roles of ankyrin		93.242	5R01MH107182-02	488,196	
Preclinical and Patient Studies of Affective Disorders in Serbia		93.242	5R21MH098793-02	87,641	18,829
Primary Care Internet-Based Depression Prevention for Adolescents	243	93.242	058831-00001//5R01MH09003505-06	33,227	
Recording Neural Activities onto DNA	180	93.242	CC# 81347 3024//1R01MH103910-01	357,494	
Recording Neural Activities onto DNA	180	93.242	81347 3024//R01MH103910	193,769	
Reducing HIV Stigma to Improve Health Outcomes for African American Women	274	93.242	UWSC6862//5R01MH098675	128,781	48,689
Reducing HIV Stigma to Improve Health Outcomes for African American Women	274	93.242	UWSC6862//4R01MH098675-05	9,718	
Regularity in Parenting: a Biopsychosocial Model for Transmission of Depression		93.242	5F31MH105092-02	28,431	
Risk for Bipolar Disorder: Reward-Related Brain Function & Social Rhythms	210	93.242	360955-NW Amd 1//R01MH077908-06A1	23,192	
Role of Kalirin Signaling in Synaptic Plasticity		93.242	5R01MH071316-10	(8,486)	
SchizConnect: Large-Scale Schizophrenia Neuroimaging Data Mediation & Federation		93.242	5U01MH097435-03	501,963	437,516
SchizConnect: Large-Scale Schizophrenia Neuroimaging Data Mediation & Federation		93.242	4U01MH097435-04	148,320	89,736
Sex Differences in Acute Estradiol Regulation of the Synaptic Proteome		93.242	5R21MH099572-02 REVISED	25,405	
Sleep Homeostasis, Plasticity and Memory		93.242	5R01MH092273-05	224,327	24,943
Small GTPase signaling in spines		93.242	5R01MH071316-12	407,031	17,925
Stepped Telemental Health Care Intervention for Depression		93.242	5R01MH095753-02	565,865	45,224
Stepped Telemental Health Care Intervention for Depression		93.242	4R01MH095753-05	32,267	
SYMPTOM DIMENSIONS OF THREAT-AND REWARD-RELATED NEUROCIRCUITRY	228	93.242	0875 G SA507 Amd 2//5R01MH10117-03	499,703	
Systematic Functional Interpretation of Regulatory Variants in Schizophrenia	162	93.242	EH15-150-S1//1R01MH106575-01A1	8,973	
Tech-Based Depression and Anxiety Treatment for Youth in High Risk Environments		93.242	4K08MH094441-05	56,480	
Technology Assisted Intervention for the Treatment and Prevention of Depression		93.242	5P20MH090318-05 revised	1,112,055	1,171
Test of an intervention to improve retention in HIV care after hospitalization	19	93.242	5600806858//5R01MH085527-05	33,967	
The Hippocampal System and Relational (Declarative) Memory	244	93.242	2011-00082-02-00//5R01MH062500	232,735	
The role of glutamate receptors in compulsive and perseverative behavior		93.242	5R01MH099114-04	244,707	
The role of glutamate receptors in compulsive and perseverative behavior		93.242	4R01MH099114-05	183,489	
Training Program in Neurobiology of Information Storage		93.242	5T32MH067564-13	191,125	
Training Program in Neurobiology of Information Storage		93.242	4T32MH067564-14	18,538	
Understanding the Role of Epac2 in Cognitive Function		93.242	4F30MH096457-04	23,457	
				<b>13,859,831</b>	<b>1,297,075</b>
Alcohol Biomarkers in Post Liver Transplant Patients		93.273	5K24AA015390-10	82,126	318
College Alcohol Assessment and Intervention Training Simulation	195	93.273	Amend. 003//5R44AA022265-03	119,090	
Epigenetic Consequences of Prenatal Alcohol Exposure		93.273	3R01AA017978-05S1 REVISED	(4,196)	
Modulation of epigenetically controlled cardiac repair mechanisms by ethanol		93.273	5K01AA022134-03	121,022	
Newborn Phosphatidylethanol Screening to Detect Fetal Alcohol Exposure in Uruguay		93.273	5U01AA023176-02	224,751	

**Northwestern University**

Schedule of Expenditures of Federal Awards  
For the Year Ended August 31, 2016

Research Type/Federal Grantor/Subagency/Project Title	Pass-through ID	CFDA	Sponsor Award Number	FY16 Expense	Passed to Subrecipients
Gut-Liver-Brain Interactions in Alcohol-Induced Pathogenesis	187	93.273	5R01AA020216-05/4 // 5R01AA020216	608	
Role of Alcohol Disparities in HIV Risk among Sexual Minority Youth		93.273	1R01AA024409-01A1	63,892	
Testing Gene-Testosterone Interplay in Adolescent Alcohol use	268	93.273	UTA15-000854 // 1R21AA023322	47,614	
Virtual Role-Plays to Train Cognitive-Behavioral Treatment for Addictions	195	93.273	Agr. 10/24/2014//5R44AA023719-03	35,315	
				<b>690,222</b>	<b>318</b>
A Multilevel Network Model of Drug Use and HIV Racial Disparities in Men		93.279	5K08DA037825-02	145,792	
A New Approach to Integrating Primary and Secondary HIV Prevention in Young Male Couples		93.279	1DP2DA042417-01	32,713	
A Systems-level Approach to Studying HIV/AIDS Susceptibility and Substance Abuse		93.279	4R01DA033773-05	157,159	
A Systems-Level Approach to Studying HIV/AIDS Susceptibility and Substance Abuse		93.279	5R01DA033773-04	774,148	343,220
Center for Prevention Implementation Method for Drug Abuse & Sex Risk Behavior		93.279	3P30DA027828-05S1	1,218,593	324,258
Center for Prevention Implementation Methodology for Drug Use and HIV (Ce-PIM)		93.279	2P30DA027828-06	79	
Chemokine Receptor Function in the Nervous System		93.279	5R01DA013141-15 REVISED	328,750	
Cognitive-Affective Substrates of Smoking: Targets for Maternal Behavior Change		93.279	5K23DA037913-02	156,773	
Comparative Effectiveness of Adding Weight Control to Smoking Cessation Quitline	5	93.279	Agr. 8/17/14//1R01DA031147-A3	47,464	
Different Components of Nicotine-Induced Upregulation of Nicotinic Receptors	234	93.279	FP052975//1R01DA035430	20,556	
Different Components of Nicotine-Induced Upregulation of Nicotinic Receptors	234	93.279	FP052975//R01DA035430	9,037	
Distress Intolerance on Smoking Lapse among Motivated vs. Unmotivated Smokers		93.279	7F32DA036947-02	51,266	
Diversity Supplement: Implementation of Evidence-Based Preventative Parenting Programs	15	93.279	15-737/3R01DA033991-03S1	90,895	
Diversity Supplement: Implementation of Evidence-Based Preventative Parenting Programs	15	93.279	15-737//R01DA0033991	41,036	
Drug Abuse, Incarceration, Health Disparities in HIV/AIDS		93.279	5R01DA028763-05	574,756	
Efficacy of Internet-Based HIV Prevention		93.279	5R01DA035145-04	764,913	206,626
fMRI-based biomarkers for multiple components of pain	237	93.279	1550991//DA035484	15,998	
fMRI-based biomarkers for multiple components of pain	237	93.279	1554072//4R01DA035484-04	8,639	
Investigating change in HIV risk in a self-monitoring diary study		93.279	1R03DA035704-01	15,601	
KiIDS: Knowing about Intervention Implementation in Detention Sites	67	93.279	T443871/U01 DA036233	20,673	
Measuring Coalition Capacity to Foster Program Sustainment	266	93.279	63501087//5R34DA037516-02	50,911	
Methamphetamine and Parkinson's disease: converging mechanisms of pathogenesis		93.279	1K99DA039253-01A1 REVISED	26,935	
Methamphetamine and terminal oxidant stress in dopaminergic neurons	186	93.279	5P30DA035756-03	95,982	
Multilevel Influences on HIV and Substance use in a YMSM Cohort		93.279	5U01DA036939-03	1,904,735	18,359

**Northwestern University**

Schedule of Expenditures of Federal Awards  
For the Year Ended August 31, 2016

Research Type/Federal Grantor/Subagency/Project Title	Pass-through ID	CFDA	Sponsor Award Number	FY16 Expense	Passed to Subrecipients
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	1R01DA042711-01	3,327	
New Inactivators of GABA Aminotransferase for Addiction		93.279	5R01DA030604-04 REVISED	117,159	32,352
New Inactivators of GABA Aminotransferase for Addiction and Epilepsy		93.279	2R01DA030604-06A1	131,825	
Nicotinic acetylcholine receptor function in the mesolimbic dopamine system		93.279	7R01DA035942-03	89,988	
NRSA F32 for Brian Feinstein in Support of: Dyadic influences on HIV risk behavior and substance abuse among young men who have sex with men and their partners		93.279	1F32DA042708-01	3,641	
NRSA for J. Puckett in Support of Predictors of Substance Use and HIV Risk in Transgender Men and Women		93.279	1F32DA038557	771	
Prenatal Smoking and the Substrates of Disruptive		93.279	5R01DA023653-05 REVISED	(2,892)	
RCT of an integrative intervention for non-treatment-seeking meth users	231	93.279	8244sc//R01DA033854-Amend 1	(1,296)	
RCT of an integrative intervention for non-treatment-seeking meth users	231	93.279	8244sc//5R01DA033854-04Revised	7,565	
UIUC Neuroproteomics and Neurometabolomics Center on Cell to Cell Signaling	244	93.279	2014-01446-01//5P30DA018310-13	196,997	
Vulnerability to Drug Use & HIV: Advancing Prevention for Rural African Americans	241	93.279	RR376-411/4945376 Amd 2//2P30DA027627	157,186	
				<b>7,257,675</b>	<b>924,815</b>
Tech-Based Depression and Anxiety Treatment for Youth in High Risk Environments		93.281	5K08MH094441-04	<b>39,692</b>	
Understanding the Role of Epac2 in Cognitive Function		93.282	5F30MH096457-03	<b>23,775</b>	
A Formalism for Customizing and Training Intelligent Assistive Devices		93.286	5R01EB019335-03	149,634	89,504
A Multi-Scale Modeling Construct of Knee Mechanics following ACL Reconstruction	180	93.286	CC# 81345 2894//5U01EB015410-02	62,363	
A Multi-Scale Modeling Construct of Knee Mechanics following ACL Reconstruction	180	93.286	CL4834//3U01EB015410-03S1	49,188	
Antifouling Peptide Mimetic Polymers		93.286	5R01EB005772-07	108,100	24,717
Antigen Loaded Particles for Tolerance Induction	255	93.286	Sub#3003585891//2R01013198-07	127,578	
Bioactive Scaffolds for Regeneration in Spinal Cord Injury		93.286	3R01EB003806-10	166,459	
Center of Excellence for Mobile Sensor Data-to-Knowledge (MD2K)	253	93.286	5-40312//1U54EB020404-03 REVISED	190,511	
Controlled Release Scaffolds for Nerve Regeneration	255	93.286	3003596443 Amd 3/5R01EB005678-10	53,232	
Development of MRI-based Cerebral Oxygen Extraction Fraction		93.286	5R21EB017928-02	31,483	4,833
Enhancing Biomedical Engineering Senior Design at Northwestern University		93.286	5R25EB013060-05	15,356	
Frontal-Subcortical Development, Movement Abnormalities, and Risk for Psychosis	237	93.286	1554305 // 5R01MH094650-05	14,548	
High-throughput molecular-specific cell nanocytology for cancer screening		93.286	5R01EB016983-03	278,591	
Interdisciplinary Graduate Education in Movement and Rehabilitation Sciences		93.286	5T32EB009406-05	(3,353)	

**Northwestern University**

Schedule of Expenditures of Federal Awards  
For the Year Ended August 31, 2016

Research Type/Federal Grantor/Subagency/Project Title	Pass-through ID	CFDA	Sponsor Award Number	FY16 Expense	Passed to Subrecipients
In-vivo characterization of pancreatic field carcinogenesis using spatially resolved reflectance measurements via a fiber optic probe		93.286	1F31EB022414-01	6,597	
Magnetic Nanocomposites for Catheter-Directed Drug Delivery to Liver Tumors		93.286	5R21EB017986-02	104,652	
Mechanisms of Light Scattering in Living Tissue		93.286	5R01EB003682-08	(48)	
Mechanisms of Light Scattering in Living Tissue		93.286	5R01EB003682-08	4,088	4,088
Microconnectomics of neocortex: a multiscale computer model	205	93.286	1120566-72199/5U01EB017695-02	214,501	
Point of Care test development for Chlamydia	123	93.286	126644// 2U54EB007958-06	6,772	
Preclinical Investigation of a Bioengineered Vascular Graft		93.286	5R01EB017129-03	342,714	
Preclinical Investigation of a Bioengineered Vascular Graft		93.286	4R01EB017129-04	38,517	
Protein-Releasing Microporous Scaffolds for Cell Replacement Therapy	255	93.286	3003655776//2R01EB009910-07	352,840	
SCH: Interface Monitoring System to Promote Residual Limb Health		93.286	5R01EB019337-03	226,269	125,359
Shape Control and Transport Properties of DNA-Copolymer Micelles	122	93.286	2002586569 Amd 1//5R01EB018358-02-REVISED	70,777	
Steroid-Based Contrast Agents for Magnetic Resonance Imaging of Endocrine Diseases		93.286	5R01EB014806-04	298,802	178,275
Transarterial Immunomodulatory Embolization: A novel approach to cancer therapy		93.286	1R21EB022291-01	32,222	
Ultra-fast PCR amplification for a 5 minute Chlamydia point of care test	123	93.286	133055//5U54EB007958	29,905	
Unassisted Blood Pressure Monitoring Using Arterial Tonometry and Photoplethysmography		93.286	5U01EB020589-02	191,157	
Understanding Real-Life Falls in Amputees using Mobile Phone Technology	180	93.286	CC# 81920 CL3719//1R01EB019406-02	20,643	
				<b>3,184,098</b>	
A Pragmatic Trial of An Adaptive eHealth HIV Prevention Program for Diverse Adolescent MSM		93.307	1U01MD011281-01 REVISED	20,907	
Biological and Environmental modifiers of Vitamin D3 and Prostate Cancer Risk	223	93.307	281315//7R01MD007105-04	112,297	
Ethics in HIV Prevention Research Involving LGBT Youth		93.307	5R01MD009561-03	592,706	241,550
Extending Cancer Navigation to Underserved Suburban Women		93.307	R24MD001650	(21,074)	
Genomic Analysis of Enhanced Response to Heart Failure Therapy in African Americans	263	93.307	0041119 (124864-3)//1R01MD009118-02	8,655	
Genomic Analysis of Enhanced Response to Heart Failure Therapy in African Americans (GRAHF)	263	93.307	0041119(124864-6)//R01MD009118-02	20,060	
Latino vs. Non-Latino Disparities in Advance Care Planning & End-of-Life Care	121	93.307	15101657-03//1R01MD007652	59,630	
Steady 3: RECRUIT	270	93.307	0008663AU//U24 MD006941	4,950	
The Price of Debt: The Unequal Burden of Financial Debt and Its Impact on Health	250	93.307	2015000030574-1A//5R01MD007723-03	75,990	
Understanding Patterns of Healthy Aging Among Men who have Sex with Men	263	93.307	0047269(126836-2)//5R01MD010680-02	49,266	
				<b>923,387</b>	<b>241,550</b>

**Northwestern University**

Schedule of Expenditures of Federal Awards  
For the Year Ended August 31, 2016

Research Type/Federal Grantor/Subagency/Project Title	Pass-through ID	CFDA	Sponsor Award Number	FY16 Expense	Passed to Subrecipients
A New High-Throughput Technology to Reveal the Dynamic Functional States of RNAs		93.310	7DP2GM110838-02	3,836	
A Phase 2a Multi-Center Study of 18F-FDG PET, Safety, and Tolerability of AZD0530 in Mild Alzheimer's Disease	266	93.310	CTAFYN067//4UH3TR000967-02	36,417	
Administrative Supplement to Study Sex/Gender Differences and HIV-1 Viral Particle Transmission Capability	204	93.310	66174//5R01GM111028-08	9,114	
Center for Structural Biology and Physics of Chromosomes	251	93.310	WA00363875/OSP2016103//1-U54-DK1079	49,815	
FYN Inhibition by AZD0530 for Alzheimer's Disease	230	93.310	67NWU/M15A11884	1,113	
National Research Mentoring Network for a Diverse Biomedical Workforce	256	93.310	Sub# N005259901//8U54GM119023-03	27,826	
National Research Mentoring Network for a Diverse Biomedical Workforce	275	93.310	636K580//8U54GM119023-02	34,647	
NIH Director's Pioneer Award: Reconstructing Sub-cellular Structure Using Plasmonic Metamaterials		93.310	8DP1EB016540-05	(4,948)	
Regulatory Circuits Controlling Regenerative Growth		93.310	1DP2DE024365-01	467,746	
Sub-micrometer x-ray tomography for neuroanatomy		93.310	5U01MH109100-02	574,651	191,369
				<b>1,200,217</b>	<b>191,369</b>
Gene Expression Profiling in Scleroderma to Discover Therapeutic Targets and Predict Clinical Course	206	93.350	SPARC 15-03-A	(10,568)	
Northwestern University Clinical & Translational Sciences (NUCATS) Institute 2.0		93.350	1U54TR001018-01	(10,872)	
Northwestern University Clinical & Translational Sciences (NUCATS) Institute 2.0		93.350	1U54TR001018-01	197,629	192,323
Northwestern University Clinical and Translational Science Institute (NUCATS)		93.350	5KL2TR001424-02	379,441	65,120
Northwestern University Clinical and Translational Science Institute (NUCATS)		93.350	5TL1TR001423-02	139,682	
Northwestern University Clinical and Translational Sciences Institute (NUCATS)		93.350	5UL1TR001422-02	4,773,375	193,869
				<b>5,468,687</b>	<b>451,312</b>
Mentoring and Research in Mouse Pathobiology		93.351	5K26OD010945-04 REVISED	<b>3,740</b>	
EHR-Based Health Literacy Strategy to Promote Medication Therapy Management		93.361	5R01NR012745-05	383,986	194,854
HippoPCI Hippocampal Predictors of Cognitive Impairment in Breast Cancer Patients		93.361	5R01NR014182-04	428,236	5,916
HippoPCI Hippocampal Predictors of Cognitive Impairment in Breast Cancer Patients		93.361	4R01NR014182-05	72,654	
Interventions for Symptom Management in Older Patients with HAND	231	93.361	8729sc//5R01NR015223-03	33,785	
Life Enhancing Activities for Family Caregivers of People with Dementia	231	93.361	8431sc//R01NR014435-03	17,800	
Life Enhancing Activities for Family Caregivers of People with Dementia	231	93.361	9487sc//5R01NR015223-03	5,580	
Quality of Life in Caregivers of Traumatic Brain Injury: The TBI-CareQOL	255	93.361	3002557849//5R01NR013658-04	67,482	
Quality of Life in Caregivers of Traumatic Brain Injury: The TBI-CareQOL	255	93.361	3002557849//5R01NR013658-04	5,420	
Refinement and expansion of the Palliative Care Research Cooperative Group	61	93.361	2038885//5U24NR014637-03	21,857	

**Northwestern University**

Schedule of Expenditures of Federal Awards  
For the Year Ended August 31, 2016

Research Type/Federal Grantor/Subagency/Project Title	Pass-through ID	CFDA	Sponsor Award Number	FY16 Expense	Passed to Subrecipients
User-Centered, Web-based Portal to Support Regimen Adherence in Transplant	67	93.361	T539496//R21NR014544	36,032	
Video Information Provider for HIV-Associated Non-AIDS (VIP-HANA) Symptoms	45	93.361	1(GG012114-01)//5R01NR015737-02	<u>23,563</u>	
				<b>1,096,395</b>	<b>200,770</b>
Northwestern University Clinical and Translational Sciences (NU-CATS) Institute		93.389	UL1RR025741	(5,595)	(5,595)
Science Club: Building a Science Community Partnership with the Boys and Girls Club of Chicago		93.389	R25RR026021	<u>(2,428)</u>	
				<b>(8,023)</b>	<b>(5,595)</b>
Adapting Patient Navigation To Promote Cancer Screening in Chicagos Chinatown		93.393	5R01CA163830-04	320,245	263,875
Adapting patient navigation to promote cancer screening in Chicagos Chinatown		93.393	4R01CA163830-05	106,774	36,230
Aldo-Keto Reductase Family 1 Member B10 AKR1B10 in Pancreatic Carcinogenesis		93.393	5R01CA164041-04	322,185	23,680
Aldo-keto reductase family 1 member B10 AKR1B10 in pancreatic carcinogenesis		93.393	4R01CA164041-05	42,560	
AMPK as a Molecular Target for Chemoprevention by Apigenin in Preneoplastic Skin		93.393	5R21CA161181-02	49,505	
Antiretroviral Therapy Strategies to Lower Cancer Risk in HIV-Infected Persons	127	93.393	115-9568-4/R01CA165937	10,202	
Apigenin Restores TSP-1 Expression in UVB-Irradiated Keratinocytes		93.393	4R01CA172669-04	315,247	
Apigenin Restores TSP-1 Expression in UVB-Irradiated Keratinocytes		93.393	5R01CA172669-03 REVISED	128,126	
Assessing PROMIS Other Simple Patient-Reported Measures for Cancer	140	93.393	1R01CA154537/ PO# 64197054	57,116	
Assessing PROMIS Other Simple Patient-Reported Measures for Cancer	140	93.393	PO 64780075/ NOR-178359-04 R01CA15453	8,594	
Behavioral Activation and Varenicline for Smoking Cessation in Depressed Smokers		93.393	5R01CA184211-03	622,606	352,461
Co(III) Schiff Base Complexes as Selective and Irreversible Inhibitors of MMP-2		93.393	5R03CA167715-02	(407)	
Communicate and LEarn About youR Variant of Uncertain Significance (CLEAR VUS)		93.393	1R03CA194643-01A1	22,546	
Comparative Effectiveness of Genomics Assay for Active Surveillance					
Failure Prediction in African American Men: the impact of genetic ancestry and socioeconomic status		93.393	1R21CA202552-01	87,778	19,559
Contralateral Prophylactic Mastectomy: The Patient Decision-Making Process		93.393	5R21CA175950-02	152,797	
Core Essential Genes in Primary Effusion Lymphoma Cell Lines		93.393	1R21CA210904-01	51,170	
Culturally Adapted Cognitive Behavioral Stress and Self-Management (C-CBSM) Intervention for PC		93.393	1R01CA206456-01A1 REVISED	10,469	
Exploring a new therapeutic approach through targeting epigenetic enzymes in ALL		93.393	R00CA188293	373,933	
Extended Duration Varenicline for Smoking Among Cancer Patients: A Clinical Trial	262	93.393	559692//1R01CA165001-04	138,391	
Extended Duration Varenicline for Smoking Among Cancer Patients: A Clinical Trial	262	93.393	568912//4R01CA165001-05	45,391	
Genetically-Modified Neural Stem Cell Based Virotherapy for Invasive Gliomas		93.393	7R00CA160775-05	195,531	
Genistein-Mediated Regulation of Prostate Cancer Cell Motility		93.393	5R01CA122985-05	(654)	

**Northwestern University**

Schedule of Expenditures of Federal Awards  
For the Year Ended August 31, 2016

Research Type/Federal Grantor/Subagency/Project Title	Pass-through ID	CFDA	Sponsor Award Number	FY16 Expense	Passed to Subrecipients
Herpesvirus Gene Expression in Transformed Cells		93.393	5R01CA021776-36 REVISED	138,455	23,351
Herpesvirus Gene Expression in Transformed Cells		93.393	4R01CA021776-37	138,315	
HPV and the DNA Damage Response		93.393	5R01CA142861-05	78,015	
HPV and the DNA Damage Response		93.393	2R01CA142861-06A1 REVISED	13,460	
HPV Vaccination among Low-Income Hispanic Adolescents		93.393	5R21CA178592-03	117,607	91,493
Improving Longitudinal Quality of Life Assessment in Hepatocellular Carcinoma		93.393	1R03CA173025-01A1	2,618	
In Vivo Model of Epstein-Barr Virus Latency		93.393	5R01CA073507-18	349,899	
Inhibition of pancreatic carcinogenesis via targeting c-Raf and sEH		93.393	5R01CA172431-03	250,046	38,346
Inhibition of pancreatic carcinogenesis via targeting c-Raf and sEH		93.393	4R01CA172431-04	73,462	
Inhibitors of the Epstgein-Barr Entry Machinery	202	93.393	60137701-40455-B//R01CA117794	143,264	
Inhibitors of the Epstgein-Barr Entry Machinery	202	93.393	60137701-40455//4R01CA117794-11	27,242	
Integration of Palliative Care Training into Oncology		93.393	5R25CA163198-04	89,576	71,663
Interactions Between Intermediate Filaments and Nucleus		93.393	5R01CA031760-31	(1,251)	
Kaposi's Sarcoma-associated Herpesvirus Mimics of Cellular microRNAs		93.393	5R01CA180813-03	285,090	
Life Cycle of Human Papillomaviruses		93.393	5R37CA074202-18	106,064	
Mastectomy Reconstruction Outcomes Consortium (MROC) Study	255	93.393	3002091262//5-R01-CA152192-05	68,281	
Methylomic biomarkers for magnesium deficiency and colon neoplasia prevention	277	93.393	VUMC 57993//1R01CA202936-01	65,668	
Mutations of Chromatin and its Modifying Machineries in Malignancies		93.393	5R35CA197569-02	679,171	
Prosthesis Control by Forward Dynamic Simulation of the Intact Biomechanical System	181	93.393	81876//1R01EB011615-01A1 Amd #5	5,035	
Progesterone Signaling and Blockade in Human Breast Tumorigenesis and Prevention		93.393	5R01CA192124-02	283,584	
Prostate Cancer Susceptibility: The ICPCG Study	140	93.393	NOR-181797-02//5U01CA089600-13	38,006	
Reducing the Effects of Active Surveillance Stress, Uncertainty and Rumination thru Engagement in Mindfulness Education (REASSURE ME)		93.393	1R01CA193331-01A1	149,924	719
Regulation of Human Papillomavirus Gene Expression		93.393	5R01CA059655-23	338,597	
Role of the Ndc80 Loop Domain and Cdt1 in Kinetochore Microtubule Attachments		93.393	5R00CA178188-04	188,881	
ROS and HIFa as molecular targets for chemoprevention in Sirt3 -/- breast cancers		93.393	5R01CA168292-04	321,544	
ROS and HIFa as molecular targets for chemoprevention in Sirt3 -/- breast cancers		93.393	4R01CA168292-05	14,660	
SIRT3 is a Mitochondrial Tumor Suppressor in ER/PR Positive Mammary Tumors		93.393	5R01CA152799-05	150,177	
Targeted eHealth intervention to reduce fear of recurrence among cancer survivors		93.393	1R21CA173193-01A1 REVISED	3,273	
The National Person-Centered Assessment Resource (PCAR)		93.393	5U2CCA186878-03	4,204,433	841,432
Training primary care physicians to perform melanoma opportunistic surveillance		93.393	5R21CA182725-02	200,392	59,630

**Northwestern University**

Schedule of Expenditures of Federal Awards  
For the Year Ended August 31, 2016

Research Type/Federal Grantor/Subagency/Project Title	Pass-through ID	CFDA	Sponsor Award Number	FY16 Expense	Passed to Subrecipients
Tumor Targeted Nanobins for the Treatment of Metastatic Breast and Ovarian Cancer		93.393	5U01CA151461-05	179,338	146,701
Using Text Messaging to Increase HPV Vaccination among Young Sexual Minority Men		93.393	1R21CA208329-01 REVISED	15,134	
				<b>11,778,065</b>	<b>1,969,140</b>
(PQD5) imaging systemic tissue injuries induced by anticancer drugs		93.394	5R01CA185214-03	501,772	
A Comparison of Interventions to Teach Melanoma Patients' Skin Self-Examination		93.394	R01CA154908	311,158	244,847
A comparison of interventions to teach patients skin self-examination		93.394	2R01CA154908-06A1	43,399	
Biophotonics to Couple Pancreatic with Upper GI Screening via Ultrathin Endoscopy		93.394	5R01CA183101-02 REVISED	582,735	264,975
Detection of 5-hmC as a Novel Screening Biomarker for Pancreatic Cancer		93.394	5R21CA187869-02	123,931	
ECOG Pathology Coordinating Office: Human Specimen Banking	76	93.394	2U24CA114737-08 // PCOGBCMP21	(2,934)	
EDRN Pre-Validation Study (EDRN Core Funding)	25	93.394	Activity#0361801 // 4451 // U01CA086402	55,312	
EDRN Pre-Validation Study/Rectal Nanocytology for Colonic Risk Stratification: Transitioning into the Clinic Setting	25	93.394	Activity#0361801//Agmt ID 4542//U01CA086402//Amd 1	53,413	
MRI-Guided Dendritic-Cell-Based Vaccine Immunotherapy for Pancreatic Cancer		93.394	1R01CA209886-01	9,830	
MRI-Guided Irreversible Electroporation Ablation for Liver Tumors		93.394	5R01CA196967-02	281,085	
MRI-Monitored Delivery of Sorafenib-Eluting Microspheres to Liver Tumors		93.394	5R01CA181658-02 revised	336,795	10,059
Nanoscale/Molecular Analysis of Fecal Colonocytes for Colorectal Cancer Screening		93.394	5R01CA165309-04	369,706	161,281
Nanoscale/Molecular analysis of Fecal Colonocytes for Colorectal Cancer Screening		93.394	4R01CA165309-05	42,269	
Optical Nanoscale Analysis of Buccal Cells: Transforming Lung Cancer Screening		93.394	5R01CA155284-04 REVISED	474,919	403,417
Quantitative MRI-Guided Nanoembolization for Liver Cancer		93.394	5R01CA159178-05	366,978	50,857
Risk-stratification of Prostate Cancers via Field Carcinogenesis Nanocytology		93.394	5R01CA200064-02	160,657	28,889
Spectral Markers for Early Detection of Colon Neoplasia	25	93.394	BMC# 3728 A6// 7U01CA111257	81,225	
Targeted Transcatheter Magneto-Mechanical Therapy for Hepatocellular Carcinoma		93.394	1R21CA173491-01A1	80,047	
Transforming Colorectal Cancer Screening through Multimodal Spectral Markers	25	93.394	3727//3R01CA156186-06 Amd 3	84,601	
				<b>3,956,898</b>	<b>1,164,325</b>
An Epigenetic Strategy for Restoring Carboplatin Sensitivity in Ovarian Cancer		93.395	7R01CA182832-03	216,008	114,965
CDK4/6 Inhibitor Therapy for Glioblastoma Multiforme	81	93.395	410676_GR410676//R01CA159467	93,265	
CDK4/6 Inhibitor Therapy for Glioblastoma Multiforme	81	93.395	410676_GR40751-NU4424006/R01CA10594	13,830	
COG NCTN Radiation Oncology Reviewer Work Order	41	93.395	9500080215//U10CA180886	4,400	
Discovery of Selective MAP2K4 Inhibitors to Target Metastasis		93.395	5R01CA188015-02	328,998	3,528
ECOG Cytogenetics CYTO39YZ-00	65	93.395	U10CA180820-02-NWU 1//U10CA180820	17,791	
ECOG-ACRIN Legacy Main Member Support	76	93.395	NWU039AB-00//U10CA021115-39	50,000	

**Northwestern University**

Schedule of Expenditures of Federal Awards  
For the Year Ended August 31, 2016

Research Type/Federal Grantor/Subagency/Project Title	Pass-through ID	CFDA	Sponsor Award Number	FY16 Expense	Passed to Subrecipients
ECOG-ACRIN NCI Community Oncology Research Program (NCORP) Research Base Grant	64	93.395	1UG1CA189828-01-NWU1/UG1CA189828-01	(114,441)	
ECOG-ACRIN NCI Community Oncology Research Program (NCORP) Research Base Grant	65	93.395	1UG1CA189828-01-NWU1/UG1CA189828-02	261,674	
ECOG-ACRIN NCORP Research Base: Cancer Care Delivery Research (CCDR)	65	93.395	1UG1CA189828-01-NWU2	44,354	
ECOG-ACRIN Nursing Committee	65	93.395	U10CA180820-01-NWU3	4,032	3,200
ECOG-ACRIN Operations Center (PI Committee)	65	93.395	U10CA180820-01-NWU2	11,845	
EMR Adverse Drug Event Detection for Pharmacovigilance	251	93.395	WA00356827/RFA2015095	78,646	
Exploiting synthetic-lethal interactions to target triple-negative breast cancer		93.395	5R00CA175700-04	190,983	
Gynecology Oncology Group Cooperative Trials	87	93.395	Agreement # 27469-17	(18,950)	
High Density Lipoprotein Nanoparticles for siRNA Delivery		93.395	5R01CA167041-04	180,665	
High Density Lipoprotein Nanoparticles for siRNA Delivery		93.395	4R01CA167041-05	78,937	
Home-Based Symptom Management via Reflexology for Advanced Breast Cancer Patients	146	93.395	RC100551NWU//R01CA157459-01	11,975	
Improving Adherence to Oral Cancer Agents and Self Care of Symptoms Using an IVR	146	93.395	RC102514NU//R01CA162401	6,576	
Institutional Membership-Alliance for Clinical Trials in Oncology	6	93.395	Fully-executed 11/13/13	25,962	
Intimacy-Enhancing Couples' Intervention for Localized Prostate Cancer	188	93.395	8164//5R01CA140297-05	37,955	
Intimacy-Enhancing Couples' Intervention for Localized Prostate Cancer	188	93.395	8164//4R01CA140297-07	16,489	
Loss of Mitochondrial Sirt3, Decreased MnSOD Activity, and IR Induced Genomic Instability		93.395	5R01CA152601-07	359,252	2,598
Loss of mtSIRT3, Decreased MnSOD Activity, and IR Induced Genomic Instability		93.395	5R01CA152601-05 REVISED	(18,308)	
Magnetic Micelles for Catheter-Directed Sorafenib Delivery to Liver Tumors		93.395	5R21CA185274-02 REVISED	262,020	
MAP Kinase Signaling in Lymphoma: A Novel Therapeutic Paradigm	214	93.395	5010960-SERV//R01CA164311	1,508	
NRG Oncology Foundation, Inc: Member Institution Purchased Service Agreement (PSA)	164	93.395	Agmt Signed 9/5/14	43,683	12,000
Phase I Study of Bortezomib and Romidepsin in Patients with Chronic Lymphocytic Leukemia/Small Lymphocytic Lymphoma, Indolent B-Cell Lymphoma, or Peripheral T-Cell Lymphoma	281	93.395	PD300629-SC103981//5R21CA137823-02R	604	
Regulatory T Cells and Oncolytic Virotherapy of Glioma		93.395	7R01CA122930-09	156,984	
Small molecule CXCR4 modulators as molecular probes for studying AML		93.395	1R01CA189074-01A1	482,563	
SPORE in Prostate Cancer: Admin Core		93.395	3P50CA090386-10S1 REVISED	(45,719)	
Targeting BET Bromodomain in Pancreatic Cancer		93.395	5R01CA186885-03S1	325,915	10,692
Targeting EZH2 in Germinal Center Derived B-Cell Lymphoma	121	93.395	14040470//1R01CA187109-01	23,616	
Targeting Ovarian Cancer Stem Cells through Selective Inhibition of ALDH1A1	107	93.395	IN4684739NWU/1R21CA198409-02	17,894	
Tele-based Psychosocial Intervention for Symptom Management & HRQOL in Men Living with Advanced Prostate Cancer		93.395	5R01CA157809-04	411,046	

**Northwestern University**

Schedule of Expenditures of Federal Awards  
For the Year Ended August 31, 2016

Research Type/Federal Grantor/Subagency/Project Title	Pass-through ID	CFDA	Sponsor Award Number	FY16 Expense	Passed to Subrecipients
Tele-based Psychosocial Intervention for Symptom Management & HRQOL in Men Living with Advanced Prostate Cancer		93.395	4R01CA157809-05	105,903	
The Role of Cidofovir and Structural Analogs as Adjuvant Therapy for Glioblastoma	207	93.395	571003 B.02//5R01CA184283-02	194,448	
Therapeutic Targeting of Malignant Glioma Stem Cells Using SMART Design to Improve Symptom Management Strategies Among Cancer Patients	146	93.395	5R35CA197725-03	474,716	
			RC105782NU//1R01CA193706-01A1	18,716	
				<b>4,355,835</b>	<b>146,983</b>
(B7H1) Mediated Immunosuppression in Glioma		93.396	5R01CA164714-03	227,866	
Active Viral Hepatitis Diagnostics to Support Prevention/Treatment of HCC		93.396	5UH2CA189965-02	555,170	17,101
An In vivo Metastasis Sensor	255	93.396	3003585711-02//5R01CA173745-05	284,624	
An In vivo Metastasis Sensor		93.396	5R01CA173745-03 Revised	(778)	
Arsenic Trioxide Activated Pathways in Malignant Cells		93.396	5R01CA121192-09	225,872	
Arsenic Trioxide activated pathways in malignant cells		93.396	4R01CA121192-10	31,799	
B7H1 Mediated Immunosuppression in Glioma		93.396	4R01CA164714-04	55,240	
CD73 and Tumor Immunity		93.396	5R01CA149669-06	97,756	21,417
DICE - a natural cancer surveillance mechanism - a new road to cancer therapy		93.396	5R35CA197450-02	846,388	
Dot 1 Complex, Transcriptional Elongation Control and Human Cancer		93.396	7R01CA089455-15	117,915	
Elucidating the Role of miR-31 in Retinoblastoma Invasion	14	93.396	901481-NU//R21CA167225	3,666	
Elucidating the stress response regulatory networks that enable malignancy		93.396	4R00CA175293-03	162,167	
Fas protects cancer stem cells from death		93.396	1R01CA178048	155,574	
Genetic Modifiers for Cancer Stem Cells in Secondary MDS/AML		93.396	5R21CA159203-02 REVISED	92,111	78,525
Influence of AKT Pathway on Progesterone Receptor Function in Endometrial Cancer		93.396	5R01CA155513-02	146,345	
Influence of AKT pathway on progesterone receptor function in endometrial cancer		93.396	4R01CA155513-05	104,647	
Integrating Epigenomic and Nuclear Receptor Signaling in Castrate Resistant Prostate Cancer		93.396	5R01CA196270-02	416,634	
Interferon-Induced SLFNs and Tumorigenesis		93.396	5R01CA161796-05	164,099	
Investigating the mechanisms of CD44s splice isoform in breast cancer metastasis		93.396	5R01CA182467-03 REVISED	254,245	
Mechanism and Control of the "Predatory," Levy Walks of Metastatic Cancer Cells		93.396	5R21CA173232-02	(5,080)	
Mechanisms of Leukemogenesis in Down Syndrome		93.396	2R01CA101774-13	109,250	
Mechanisms of Leukemogenesis in Down Syndrome		93.396	4R01CA101774-14	204,660	
Microsystems for Targeting Levy Walks in Metastatic Cancer Cells		93.396	5R21CA173347-03	(5,080)	
Mitochondrial metabolism and ROS regulate cancer		93.396	1R35CA197532-01	209,882	
Mitochondrial Metabolism and ROS Regulate Lung Cancer		93.396	5R01CA123067-09	208,828	19,991
Mnk Pathways and IFN-responses in Malignant Cells		93.396	5R01CA155566-05	228,248	

**Northwestern University**

Schedule of Expenditures of Federal Awards  
For the Year Ended August 31, 2016

Research Type/Federal Grantor/Subagency/Project Title	Pass-through ID	CFDA	Sponsor Award Number	FY16 Expense	Passed to Subrecipients
Modulation of Oncogenic Signaling in Glioblastomas		93.396	3R01CA159811-04S1	204,590	
Modulation of Oncogenic Signaling in Glioblastomas		93.396	4R01CA159811-05	39,123	
Molecular Targets of Tranlocation T(14:4) in Multiple Myeloma Pathogenesis	284	93.396	WU-14-307//1R01CA175349	589	
Multidisciplinary Integrative Genomic Approach to Distinguish Lethal from Indolent Prostate Cancer in Men of European and African Ancestry	122	93.396	2002911519//U01CA196390	8,915	
Prostate Cancer Recurrence: models and mechanisms		93.396	5R01CA167966-05	401,660	
Quantitative analyses of tumor cell extravasation	138	93.396	5710004022//1U01CA202177-01	52,551	
Regulation of Desmosomal Cadherins in Oral Cancer		93.396	5R01CA122151-09	331,328	
Regulation of Desmosomal Cadherins in Oral Cancer		93.396	4R01CA122151-10	14,226	
Role of Cdc25A in Breast Cancer		93.396	5R01CA112282-10	179,074	
Role of Oncogenic Kinase Pim-1 in Prostate Cancer		93.396	5R01CA123484-09	270,377	
Signal Transduction of Type 1 Interferons in Malignant Cells		93.396	5R01CA077816-17	270,172	
Signal Transduction of Type 1 Interferons in Malignant Cells		93.396	4R01CA077816-18	16,452	
Sirt2 Directs Kras IR Cell Resistance and Tumorigenesis		93.396	5R01CA182506-03	277,277	
The COMPASS family of H3K4 methylases in development and cancer		93.396	7R01CA150265-07	155,168	
The role of deubiquitinating enzyme USP33 in Slit-Robo signaling in lung cancer		93.396	5R01CA175360-03	347,786	168,060
The Role of Fas as a Tumor Promoter		93.396	5R01CA112240-10 REVISED	4,921	
The role of ICSBP in the pathogenesis of chronic myeloid leukemia		93.396	5R01CA174205-03	159,305	
The role of ICSBP in the pathogenesis of chronic myeloid leukemia		93.396	4R01CA174205-04	134,558	
The Role of MicroRNAs in Tumor Progression		93.396	5R01CA149356-14	(3)	
The Role of NOV (CCN3) in Prostate Cancer Progression		93.396	5R01CA172384-02	190,145	
The Role of NOV (CCN3) in Prostate Cancer Progression		93.396	4R01CA172384-04	110,165	
Triad1 regulates myelopoiesis and functions as a leukemia suppressor		93.396	5R01CA195642-02	221,601	
UTX, MLL and Pathogenic Dereglulation of Histone Methylation in Multiple Myeloma		93.396	5R01CA180475-02 REVISED	<u>99,854</u>	<u>56,687</u>
				<b>8,381,882</b>	<b>361,781</b>
CCNE: Administrative Core (Mirkin/Rosen)		93.397	5U54CA151880-05	232,588	50,887
Coding, Decoding, Transfer, and Translation of Information in Cancer		93.397	5U54CA143869-05 REVISED	(946,624)	
Coding, Decoding, Transfer, and Translation of Information in Cancer		93.397	5U54CA143869-05 REVISED	23,050	12,274
ECOG/FSTRF PSA for ECOG Clinical Trial Protocols	76	93.397	Agmt 8/13/12 / U01CA021115	32,654	
GMaP Region 4: Building Research & Diversity Scholarship through the Cancer Disparities Research Network	110	93.397	Sub# 12305-52//3P30CA006927-50SB	9,476	
Improving Quality of Life among Hispanic/Latino Breast, Colorectal & Prostate Cancer Survivors: A Randomized Control Trial of Patient Navigators					
Using the LIVESTRONG Cancer Navigation Services Program	270	93.397	158815/158532//U54CA153511	139,541	

**Northwestern University**

Schedule of Expenditures of Federal Awards  
For the Year Ended August 31, 2016

Research Type/Federal Grantor/Subagency/Project Title	Pass-through ID	CFDA	Sponsor Award Number	FY16 Expense	Passed to Subrecipients
NU NEIGHBORS: A Social Science Partnership to Reduce Cancer Disparities (2 of 2)		93.397	5P20CA165592-04	101,285	46,605
Nucleic Acid-Based Nanoconstructs for the Treatment of Cancer		93.397	5U54CA199091-02	2,049,657	53,506
Spatio-Temporal Organization of Chromatin and Information Transfer in Cancer		93.397	1U54CA193419-02 REVISED	1,381,460	432,114
SPORE in Prostate Cancer		93.397	5P50CA180995-02	1,087,605	
Targeting the Multiple Myeloma Epigenome: Project 4	57	93.397	1145413/5P50CA100707-13	50,335	4,523
The Chicago Collaborative to Promote and Advance Cancer Health Equity		93.397	5U54CA203000-02	961,777	23,820
The Robert H. Lurie Comprehensive Cancer Center		93.397	3P30CA060553-21S1	4,651,088	136,015
The Robert H. Lurie Comprehensive Cancer Center		93.397	3P30CA060553-22S1	236,188	
				<b>10,007,080</b>	<b>759,744</b>
A Highly Specific, Tissue-Permeable Inhibitor of Gli Transcription Factors		93.398	1F31CA186761-03	35,704	
Alternative Splicing of Amyloid Precursor-Like Protein 2 during the Epithelial-Mesenchymal Transition and Cancer Metastasis		93.398	5F30CA196118-02	38,372	
Assessment, Development, and Application of Positive Psychological Theory and Science for Cancer (ADAPPTS-C)	283	93.398	WFUHS111556//K07CA158008	11,108	
Behavioral and Psychosocial Research Training in Cancer Prevention and Control		93.398	5T32CA193193-02	16,979	
Cancer Nanotechnology in Imaging and Radiation Oncology		93.398	5R25CA132822-04	(66)	
Cancer Nanotechnology in Imaging and Radiation Oncology		93.398	5R25CA132822-04	78,184	78,182
Cancer Nanotechnology Training Program		93.398	1T32CA186897-02	108,013	
Carcinogenesis Training Program		93.398	5T32CA009560-29	286,100	
Carcinogenesis Training Program		93.398	4T32CA009560-30	33,005	
Clinical bacterial isolate engineered as an immunotherapy for prostate cancer		93.398	1F30CA203472-01	11,688	
Clinical Oncology Research Training Program		93.398	T32CA079447	19	
Designing with Dissemination in Mind: Optimization of a mHealth Physical Activity Intervention for Breast Cancer Survivors		93.398	5K07CA196840-02	124,156	
Development of an MRI gene and application to probing the tumor microenvironment		93.398	5F31CA174281-03 REVISED	11,898	
Development of an MRI Gene and Application to Probing the Tumor Microenvironment		93.398	4F31CA174281-04	21,079	
Fellowship for Chelsey Spriggs: The Role of The Fanconi Anemia Pathway in Human Papillomavirus Infection		93.398	5F31CA192801-03	33,747	
Molecular Mechanism of Hepatocyte Growth Factor Signaling		93.398	5F30CA177193-03	43,920	
Novel Pathway Analysis Methods for Identifying Genomic causes of Cancer		93.398	5K22CA148779-03	99,475	
NRSA Fellowship for A. Cogswell in Support of A Novel Role for PML bodies in Leukemic Transformation		93.398	5F32CA189413-02 REVISED	49,883	

**Northwestern University**

Schedule of Expenditures of Federal Awards

For the Year Ended August 31, 2016

Research Type/Federal Grantor/Subagency/Project Title	Pass-through ID	CFDA	Sponsor Award Number	FY16 Expense	Passed to Subrecipients
NRSA Postdoc Fellowship for E Beauchamp in support of: The role of AMPK signaling in the anti-leukemic effects of Arsenic Trioxide		93.398	1F32CA183536-01	(266)	
Overcoming Temozolomide Resistance using MGMT-targeting Spherical Nucleic Acids		93.398	5F30CA174058-03 REVISED	22,619	
Overcoming Temozolomide Resistance using MGMT-targeting Spherical Nucleic Acids		93.398	4F30CA174058-04	15,280	
Profiling Glycosyltransferase Activities on the Epithelial-Mesenchymal Transition in Breast Epithelial Cells using peptide arrays and mass spectrometry		93.398	1F30CA196185-01A1	11,844	
Real-Time Analysis of Diet and Activity Data		93.398	5K07CA154862-04	65,274	
Role of desmoglein 1 in regulating redox and growth factor signaling in head and neck cancer		93.398	5F30CA192788-02	36,103	
Targeted Delivery of Nanodiamonds for Breast Cancer Imaging and Therapy		93.398	5F30CA174156-03	24,629	
Targeted Delivery of Nanodiamonds for Breast Cancer Imaging and Therapy		93.398	4F30CA174156-04	3,896	
The role of glioblastoma derived activated leukocyte cell adhesion molecule in peripheral monocyte PD-L1 induction and immunosuppression		93.398	1F30CA206413-01	11,094	
The Role of HMG2 in Enhancing Transcription During Prolactin Receptor Signaling		93.398	5F30CA171858-04	42,960	
The Role of ZEB1 Mutations in Cutaneous T Cell Lymphoma		93.398	5K08CA191019-03	207,455	
The Significance of Isocitrate Dehydrogenase Mutations in Gliomas		93.398	7K08CA155764-05	196,645	
Therapeutic and Sustained Cytokine Delivery at the Tumor Site Using Engineered Mononuclear Cells		93.398	1F30CA203325-01	22,052	
Training Program in Oncogenesis and Developmental Biology		93.398	5T32CA080621-13	271,254	
Training Program in Signal Transduction in Cancer		93.398	5T32CA070085-19	239,762	
Treating cognitive impairments in cancer patients via systematic light exposure		93.398	5K07CA184145-03	166,925	
				<b>2,340,790</b>	<b>78,182</b>
Acute Kidney Injury and Double Negative T Cells	122	93.647	2002524940//1R01DK104662-01	<b>2,379</b>	
CTOT-18: A Retrospective Multicenter Study to Determine 4-Year Clinical Outcomes in Subjects Previously Enrolled in the CTOT-05 Study	98	93.701	0255-1358-4424//U01AI063594	<b>6,382</b>	
10-Year Changes in Objectively-Measured Physical Activity and Sedentary Behavior in the CARDIA Cohort	127	93.837	2297-2539//1R56HL125423-01A1	50,329	
4D Magnetic Resonance Imaging for Atrial Flow Assessment in Atrial Fibrillation		93.837	5R21HL113895-02 REVISED	21,514	
A novel gut microbial-dependent nutrient metabolite and atherosclerosis	260	93.837	5101819//K01HL127159	31,842	
A novel implementation and social network strategy for acute pulmonary illnesses		93.837	5K23HL118139-03	109,981	

**Northwestern University**

Schedule of Expenditures of Federal Awards  
For the Year Ended August 31, 2016

Research Type/Federal Grantor/Subagency/Project Title	Pass-through ID	CFDA	Sponsor Award Number	FY16 Expense	Passed to Subrecipients
A novel implementation and social network strategy for acute pulmonary illnesses		93.837	4K23HL118139-04	18,829	
A Systems Science Approach to Understanding Racial/Ethnic Disparities in Obesity		93.837	1K01HL133531-01	5,776	
ACTG Supplemental Funding for Protocol A5314	27	93.837	7389sc//5R01HL117713-02	94	
Acute Coronary Syndrome Quality Improvement in Kerala (ACS QUIK)		93.837	5R00HL107749-05	260,669	122,997
Aortic Plaques and Stroke: Cardiovascular Therapy of Retrograde Embolization Risk		93.837	1R21HL132357-01	32,289	
AsthmaNet Clinical Trials	173	93.837	NWUHL098115 // 5U10HL098115	869,452	532,805
Atrial arrhythmias and Ca2+ waves in HF: simulation and experimental studies		93.837	5R01HL119095-03	614,508	184,467
Atrial fibrillation burden, vascular disease of the brain, and cardiac MRI in MESA	274	93.837	UWSC8533//1R01HL127659-01	11,162	
BEST-CLI: Trial to Compare Best Endovascular versus Best Surgical Therapy in Patients with Critical Limb Ischemia (BEST)	156	93.837	Agr. 8/7/14 // U01HL107407	10,534	
Beyond PECAM: Mechanisms of Transendothelial Migration		93.837	5R37HL064774-14 REVISED	58,141	
Cannabinimimetic Treatment of Obstructive Sleep Apnea: A Proof of Concept Trial	243	93.837	2011-06400-01-02-KM / UM1HL112856	568,005	
Cardiomyocyte Integrin-Matrix Interactions Regulate Cardiac Fibrosis		93.837	1F32HL131301-01	10,145	
Cardiomyopathy Genomes Project		93.837	5R01HL128075-02	469,856	152,789
Cardiovascular Regenerative Medicine		93.837	5P01HL108795-05	1,419,491	385,393
Cerebral Autoregulation Monitoring to Reduce Brain Injury from Cardiac Surgery		93.837	7R01HL092259-08	5,983	
Channelopathies and Cardiomyopathies Among Sudden Deaths in the Young		93.837	1U01HL131914-01	122,101	
Chicagoland Metropolitan AsthmaNet Consortium		93.837	5U10HL098096-07	127,485	97,324
Childhood Origins of CHD Disparities: Neural & Immune Pathways		93.837	5R01HL122328-02	821,517	135,105
Chronic Obstructive Pulmonary Disease in Non-Smokers	45	93.837	5(GG011046-01)//1R01HL130506-01A1	4,954	
Comparing and Combining Bortezomib and Mycophenolate in SSc Pulmonary Fibrosis		93.837	5R34HL122558-02	151,092	
Comprehensive Cardiac Structure-Function Analysis in Heart Transplantation		93.837	5R01HL117888-03	518,901	
Computer Modeling and Cardiac MR of Structural Factors of Atrial Fibrillation		93.837	R21HL110041	(916)	
CXCR4-c-Kit Signaling and BM Progenitor Cell Recruitment in the Ischemic Heart		93.837	5R01HL113541-04	246,198	
Decrypting Variants of Uncertain Significance in Long-QT Syndrome		93.837	5R01HL122010-03	1,256,992	700,989
Determinants of Midlife & Longitudinal Change in Cognitive Function: CARDIA Study	127	93.837	RNG200103-NW//R01HL122658	54,921	
Determinants, Trajectories, and Consequences of Abnormal Cardiac Mechanics		93.837	2R01HL107577-05A1	30,324	
Development of combination immunotherapies for atherosclerotic inflammation		93.837	1DP2HL132390-01	371,760	
E2F1 in BM progenitor cell differentiation and cardiovascular repair		93.837	1R01HL131110-01A1	112,077	
Effect of Low Dose Methotrexate on Arterial Inflammation in HIV	137	93.837	224883 / R01HL122177	4,200	
Efferocytosis Directed Inflammation Resolution and Repair in the Hypoxic Heart		93.837	3R01HL122309-03S1	368,129	

**Northwestern University**

Schedule of Expenditures of Federal Awards  
For the Year Ended August 31, 2016

Research Type/Federal Grantor/Subagency/Project Title	Pass-through ID	CFDA	Sponsor Award Number	FY16 Expense	Passed to Subrecipients
Efficacy of Potassium Nitrate In Heart Failure with Preserved Ejection Fraction	262	93.837	567661//1R01HL121510-01A1	32,426	
Epidemiologic Determinants of Cardiac Structure and Function Among Hispanics	283	93.837	WFUHS 110855//5R01HL104199-04	4,780	
Exploiting Tie2 Activation for the Treatment of Vascular Diseases		93.837	5R01HL124120-03	323,034	
Exploring the roles of Gi and S1Pr1 in endothelial barrier function in vivo		93.837	7K08HL105657-05	54,943	
F32 for Mazen Saadi Albaghdadi in Support of: Evaluation of the Efficacy of a Liquid Cast Drug-Eluting Biodegradable Stent		93.837	5F32HL118976-03	406	
Favorable Cardiovascular Health and the Compression of Morbidity in Older Age		93.837	5R01HL118289-03	391,432	15,079
Femoral Plaque Composition, Oxidative Stress, and Coronary Events		93.837	5R01HL109244-04	195,603	15,993
FIGHT: Functional Impact of GLP-1 for Heart Failure Treatment	61	93.837	193603//U10HL084904	(8,473)	
Fox Transcription factors in lymphatic vessel development		93.837	1R01HL126920-02	372,160	
Functional Cardiovascular 4D MRI in Congenital Heart Disease		93.837	5R01HL115828-04	426,859	208,506
Functional Cardiovascular 4D MRI in Congenital Heart Disease		93.837	4R01HL115828-05	65,466	
Genotype-Phenotype Discordance in Long QT Syndrome	33	93.837	RES126034 Amd 1//R01HL124245	32,628	
HCMR - Novel Predictors of Outcome in Hypertrophic Cardiomyopathy	99	93.837	Study# 2222/0003//1U01HL117006-01A1	25,019	
Hemodynamic Loading of the Left Ventricle and Aorta in Aortic Valve Disease		93.837	5K25HL119608-03	129,099	
High Resolution and Functional MRI Assessment of Intracranial Atherosclerotic Plaque		93.837	1R21HL130969-01	22,161	
Hispanic Community Children's Health Study of Latino Youth - SOL Youth	260	93.837	5104518//5R01HL102130-04 REVISED	9,529	
Hypercapnia and Neutrophil Function in Pulmonary Host Defense		93.837	5K01HL108860-05	124,632	
Identifying risk factors for subclinical myocardial disease in HIV infection	122	93.837	2002507820 Amend. # 1// R01HL126552	70,470	
IRONOUT-HF: Oral Iron Repletion effects On Oxygen UpTake in Heart Failure	61	93.837	177494/200464/029692//U10HL084904	13,842	
Joint Effect of Malpractice Risk and Financial Incentives on Cardiac Testing	80	93.837	14-M49//7R01HL113550-02	65,798	
Longitudinal Study of Cognition, Health Literacy, and Self-Care in COPD Patients	98	93.837	0255-4335-4609//R01 HL105385	43,914	
Long-Term Patterns in Cardiovascular Risk Factors and Their Time-Varying Impact on the Incidence of Cardiovascular Disease		93.837	5R21HL129022-02	102,086	
Low Intensity Exercise intervention for peripheral artery disease: The LITE Trial		93.837	5R01HL122846-02	921,241	54,309
Make Better Choices (MBC) - Multiple Behavior Change in Diet and Activity		93.837	5R01HL075451-09	135,532	
Mapping electrogram morphology recurrence for atrial fibrillation ablation	84	93.837	1R41HL127907-01A1 NU//1R41HL127907	76,052	
Maternal-Offspring Metabolics: Family Intervention Trial (MOMFIT)		93.837	4U01HL114344-05	410,453	
Maternal-Offspring Metabolics: Family Intervention Trial (MOMFIT)		93.837	3U01HL114344-04S1	466,478	13,783
Mechanical circulatory support: Measures of adjustment and quality of life		93.837	1R01HL130502-01	141,229	4,711
Mechanisms of sulfonylurea receptor mediated cardiomyopathy		93.837	5R01HL122109-02 REVISED	791,079	376,202
Mechanistic Insights into the Cardioprotective Effects of mABC1 Protein		93.837	5K02HL107448-05	65,918	
Mediators of Atherosclerosis in South Asians in America	231	93.837	8696sc//R01HL093009	246,566	
Metabolomics-Measured Urinary Metabolites/Diet & BP, 17 Random Samples		93.837	5R01HL084228-08	440,600	234,851
Modeling the role of the genome in chemotherapy induced cardiotoxicity using iPSC		93.837	5R00HL121177-03	191,131	
MRI of Diffuse Left Ventricular Fibrosis in Atrial Fibrillation		93.837	7R01HL116895-03 REVISED	154,559	

**Northwestern University**

Schedule of Expenditures of Federal Awards  
For the Year Ended August 31, 2016

Research Type/Federal Grantor/Subagency/Project Title	Pass-through ID	CFDA	Sponsor Award Number	FY16 Expense	Passed to Subrecipients
MtDNA variant modifiers of cardiopulmonary responsiveness to physical activity	240	93.837	UFDSP00010117//R01HL121023	14,737	
Multi-Ethnic Study of Autoimmunity and Cardiovascular Disease		93.837	5R01HL104047-04 REVISED	69,466	
Myosin binding protein H-like and its role in cardiomyopathy		93.837	1F32HL131304-01	16,825	
NEAT:Nitrates Effect on Activity Tolerance in Heart Failure with Preserved Eject	61	93.837	200464//U10HL084904	30,438	
Neonatal Long QT Syndrome and Sudden Infant Death		93.837	5R01HL083374-08	222,450	50,424
NO Inhibits Arterial Injury After Vascular Procedures via Adventitial Stem Cells		93.837	5R01HL108118-05	185,358	
Non-invasive detection of heart transplant rejection with MRI		93.837	5F31HL117618-03	22,384	
Non-invasive detection of heart transplant rejection with MRI		93.837	4F31HL117618-04	18,192	
Novel Vehicles for Targeted Cardiovascular Repair		93.837	5R01HL116577-03	924,858	
Novel Vehicles for Targeted Cardiovascular Repair		93.837	4R01HL116577-04	167,063	
NRSA F32 for Matthew DeBerge in support of: Efferocytosis Regulation by Hypoxia and Reperfusion After Myocardial Infarction		93.837	5F32HL127958-02	52,572	
nuMOM2b Hearth Health Study Capitation Funding Memorandum of Understanding (MOU)	184	93.837	0214047//1U10HL119991	201,237	
PACemaker & B-Blocker Therapy Post-Myocardial Infarct		93.837	5U01HL080416-04 REVISED	25,168	
PAI-1 and Vascular Senescence		93.837	5R01HL051387-20	432,260	97,276
Parents' Dense and Supportive Social Networks Facilitate Children's Health		93.837	5F32HL119021-02 REVISED	18,393	
Parents' Dense and Supportive Social Networks Facilitate Children's Health		93.837	4F32HL119021-03 REVISED	38,873	
Pathophysiological Significance of Atrial Fibrillation Electrogram Patterns		93.837	5R01HL125881-02	291,517	
Pediatric Heart Transplantation: Transitioning to Adult Care	14	93.837	901477-NU//1R34HL111492-03	52,671	
Phagocyte Intoxication by ExoU in Pseudomonas Pneumonia		93.837	5F30HL107092-04 Revised	10,053	
Phagocyte Intoxication by ExoU in Pseudomonas Pneumonia		93.837	4F30HL107092-05	29,233	
Pregnancy as a Window for Future Cardiovascular Health		93.837	3U10HL119992-03S1	105,013	18,633
Pregnancy as a Window for Future Cardiovascular Health		93.837	4U10HL119992-04	20,926	
Pregnancy as a Window to Future Cardiovascular Health: Adverse Pregnancy Outcomes - Heart Health Study	184	93.837	7-312-0214047-52577L//1U10HL119991-01	3,807	
PROgenitor Cell Release Plus Exercise to Improve Functional Performance in PAD		93.837	5R01HL107510-05	768,690	37,697
Progression of Coronary Atherosclerosis in MACS	122	93.837	2002350097//5R01HL125053-03	166,722	
Projection Imaging of Peripheral Vascular Calcifications	162	93.837	EH14-410-S1//5R21HL126015-02	25,552	
Prox1 in Mammalian Lymphangiogenesis		93.837	5R01HL073402-15	461,342	
Pseudomonas Genomic Signatures Associated With Persistence in Cystic Fibrosis		93.837	5R21HL129930-02	67,547	17,925
Quantitative MRI for the assessment of subclinical CAD in T2DM		93.837	5K01HL121162-02	107,907	
Refining Conceptual Models for the Role of Health Literacy in Health Outcomes	25	93.837	0341401//1R01HL116630	111,887	
Regulation of cardiac metabolism and heart failure by tristetraprolin		93.837	1F31HL132552-01	22,498	
REPRIEVE A5332 and A5333s	137	93.837	PS#225707//U01HL123336	39,836	
Research Coordination Unit - Translating Basic Behavioral and Social					

**Northwestern University**

Schedule of Expenditures of Federal Awards  
For the Year Ended August 31, 2016

Research Type/Federal Grantor/Subagency/Project Title	Pass-through ID	CFDA	Sponsor Award Number	FY16 Expense	Passed to Subrecipients
Science Discoveries into Interventions	187	93.837	U01HL097894	108,568	
RESEARCH TRAINING IN CVD EPIDEMIOLOGY AND PREVENTION		93.837	5T32HL069771-13	224,431	
Respiratory and Metabolic Adaptation to Hypoxia		93.837	5R01HL035440-28	332,763	69,287
Risk Factors for Ischemic Stroke	27	93.837	113896//2R01HL08851-06A1	9,035	
Risk Stratification in Older Persons with Acute Myocardial Infarction: Silver-AMI	289	93.837	Agmt 8/30/13//R01HL115295	23,493	
Role of SNRK in cardiac metabolism and development of heart failure		93.837	1R01HL127646-01A1	242,838	11,304
Sarcoglycan in Myopathy and Muscle Membrane Stability		93.837	5R01HL061322-17	348,429	
Social and Cultural Influences on Cardiovascular Risk in South Asians		93.837	5R01HL120725-03	562,986	283,551
Sorafenib In Hepatopulmonary Syndrome	262	93.837	SUB#567266//5UM1HL116886-03	49,242	
Statistical methods to correct for measurement error in self-reported dietary data from lifestyle intervention trials		93.837	5R01HL127491-02	178,479	9,032
Study of Cardiac Mechanics in Systemic Hypertension		93.837	5R01HL107577-04	164,637	14,384
Targeting Depression and Nicotine Dependence to Promote Cardiovascular Health		93.837	1F31HL129494-02	36,642	
TELMisartan plus EXercise to improve functioning in PAD: The TELEX Trial		93.837	5R01HL126117-02	741,088	46,534
The Role of CD99 in Leukocyte Transendothelial Migration in vitro and in vivo		93.837	5F30HL116100-03	41,385	
The Role of CD99L2 in Leukocyte Transendothelial Migration in vitro and in vivo		93.837	1F31HL131355-01	9,896	
The Role of Group 1 CD1-Restricted T Cells in Atherosclerosis		93.837	5R21HL112186-02 REVISED	(26,137)	
The Role of Gut Microbiota in Neointimal Hyperplasia After Vascular Injury		93.837	1K08HL130601-01 REVISED	91,008	
The role of p21-activated Kinase (Pak1) in Atrial Fibrillation.	187	93.837	1R01HL128330-01A1//14091801	11,076	
The Role of Plasminogen Activator Inhibitor-1 in the Development and Progression of Obesity		93.837	1F32HL129695-02	62,510	
The Roles of Endothelial Cell PECAM and the LBRC in leukocyte transmigration		93.837	5R01HL046849-23	55,495	
The Roles of Endothelial PECAM and the LBRC in Leukocyte Transmigration		93.837	2R01HL046849-25 REVISED	82,023	
Training Grant in Circadian and Sleep Research		93.837	5T32HL007909-18	218,835	
Transition from Risk Factors to Heart Failure: Prevalence, Pathogenesis, and Phenomics	283	93.837	WFUHS114486//R01HL127028	95,023	
Vascular Surgery Scientist Training Program		93.837	5T32HL094293-08	271,474	
Vimentin-mediated regulation of the inflammasome in acute lung injury		93.837	1R01HL128194-01A1	126,145	
				<b>24,083,826</b>	<b>3,891,350</b>
5 -Hydroxytryptophan Regulation of Endothelial Cell Signals for Lung Inflammation		93.838	5R01HL111624-03	274,538	
5 -Hydroxytryptophan Regulation of Endothelial Cell Signals for Lung Inflammation		93.838	4R01HL111624-04	64,363	
A Randomized Double-Blind Placebo-Controlled Trial of Ganciclovir/ Valganciclovir for Prevention of Cytomegalovirus Reactivation in Acute Injury of the Lung and Respiratory Failure (The GRAIL Study)	75	93.838	0000788107//5U01HL102547-03	18,641	
Chitinase1 as a biomarker and therapeutic target in scleroderma lung disease	28	93.838	00000755//5R01HL115813-02	15,126	
CNS Pathways Integrating Respiratory and Metabolic Control		93.838	5R01HL122921-03	646,526	

**Northwestern University**

Schedule of Expenditures of Federal Awards  
For the Year Ended August 31, 2016

Research Type/Federal Grantor/Subagency/Project Title	Pass-through ID	CFDA	Sponsor Award Number	FY16 Expense	Passed to Subrecipients
Cortactin in Regulation of Pulmonary Vascular Permeability	243	93.838	2014-05076-01-00. EC//R56HL088144-0	73,768	
Effects of Hypoxia on Alveolar Epithelial Cytoskeleton		93.838	5R01HL079190-09	(25,193)	
Genes Mediating Innate Immune Suppression by Hypercapnia in Mammals and Flies		93.838	5R01HL107629-04 REVISED	149,381	
Glucocorticosteroid Action In Inflammatory Disease		93.838	5R37HL068546-33	331,402	
Glycobiology of Inflammatory Lung Diseases	122	93.838	4P01HL107151-06	56,738	
High carbon dioxide impairs lung repair		93.838	5K08HL125940-02	152,566	
Lung Function Decline and Disease Risk from Young Adulthood to Middle Age		93.838	5R01HL122477-03	747,911	498,070
Metabolic Regulation of Pulmonary Vascular Remodeling		93.838	5R01HL122062-03 REVISED	311,465	63,973
MFMU Network Capitation for ALPS Study	80	93.838	Agmt 4/25/14//U01HL098354	43,974	1,615
Molecular Mechanisms of Central Chemoreception in Breathing		93.838	5R01HL095731-04	(1,106)	
Multi-Level Understanding of Social Contributors to SES Disparities in Asthma		93.838	5R01HL108723-03	372,456	128,020
Multi-Level Understanding of Social Contributors to SES Disparities in Asthma		93.838	4R01HL108723-05	86,058	
New Approaches for Empowering Studies of Asthma in Populations of African Descent	122	93.838	2001428327//5R01HL104608-04	(4,371)	
Pathophysiology of Acute Lung Injury		93.838	5P01HL071643-12	2,343,358	
Pathophysiology of Alveolar Epithelial Lung Injury		93.838	5P01HL071643-10 REVISED	(207,314)	
Pulmonary Microvascular Blood Flow and Cor Pulmonale Parvus in Emphysema/COPD	45	93.838	7 (GG007619-03) // R01HL093081	119,751	
Pulmonary microvascular perfusion in the Multi-Ethnic Study of Atherosclerosis	45	93.838	5(GG010919)//2R01HL077612-09	4,795	
Redox Regulation in the Prenatal Pulmonary Vasculature		93.838	R01HL054705	(380)	(380)
Redox Regulation of Vascular cGMP Signaling in Neonatal Lungs		93.838	5R01HL109478-05	306,296	144,555
Regulation of Inflammation and Acute Lung Injury by the Transcription Factor Miz1		93.838	5R01HL114763-03 REVISED	409,914	14,433
Regulatory T cell Uhrf1 and DNA methylation in repair of acute lung injury		93.838	1K08HL128867-02	156,619	
Right Ventricular-Pulmonary Vascular Interactions in Pulmonary Hypertension	275	93.838	337K960/R01HL105598	72,990	
Role and Regulation of Sodium, Potassium ATPase in Lung		93.838	4R37HL048129-22	143,421	
Role and Regulation of Sodium, Potassium ATPase in Lung Epithelium		93.838	5R37HL048129-21	171,801	
Role of Group 1 CD1-restricted T cells in Mycobacterium Tuberculosis Infection		93.838	1F32HL126376-01 REVISED	28,654	
Role of the Na K ATPase Beta 1 subunit in alveolar epithelial integrity		93.838	5R01HL113350-03	296,859	150,239
Role of the Na K ATPase Beta 1 subunit in alveolar epithelial integrity		93.838	4R01HL113350-04	40,977	
Role of vimentin in influenza A-induced acute lung injury		93.838	5R01HL124664-02	8,010	
Self-Management Behaviors Among COPD Patients with Multi-Morbidity	98	93.838	0255-8782-4609//R01HL126508	173,577	
The deleterious effects of hypercapnia on the lungs		93.838	5R01HL085534-10	304,606	
Training Program In Lung Sciences		93.838	5T32HL076139-13	422,624	
Treating Lung Inflammation by Targeting Siglecs	122	93.838	2001901746//5P01HL107151-05	175,366	
Trial of Late SURFactant (TOLSURF) to Prevent BPD (Clinical Coordinating Center)	231	93.838	6069sc / U01HL094338	(3,819)	
				<b>8,282,348</b>	<b>1,000,525</b>

**Northwestern University**

Schedule of Expenditures of Federal Awards  
For the Year Ended August 31, 2016

Research Type/Federal Grantor/Subagency/Project Title	Pass-through ID	CFDA	Sponsor Award Number	FY16 Expense	Passed to Subrecipients
Aberrant Megakaryopoiesis in the Myeloproliferative Neoplasms		93.839	5R01HL112792-03	285,781	106,697
Aberrant Megakaryopoiesis in the Myeloproliferative Neoplasms		93.839	4R01HL112792-04	167,317	
Coboglobins-Cobalt-Substituted Hemoglobins and Myoglobin		93.839	5R01HL013531-41	(13)	
EHR Anticoagulants Pharmacovigilance	251	93.839	WA00406355-RFS2015140//5R01HL125089-02	23,511	
Electron Transfer Within Protein Complexes		93.839	5R01HL063203-17 REVISED	81,273	
Electron Transfer within Protein Complexes		93.839	4R01HL063203-18	213,707	
FGF-23 and the Risk of Stroke and Cognitive Decline	254	93.839	66917H/5R01HL108623-04	24,428	
Functional Analysis of mDia Formins in Hematopoietic Stem Cell Engraftment and Migration		93.839	5R00HL102154-04	(1,649)	
Generating Human Cord-Blood-Derived Functional Megakaryocytes and Platelets	243	93.839	2015-05001-01-00//1R01HL130760-01	171,057	
Membrane-Cytoskeletal Remodeling in Platelet Biogenesis		93.839	5K08HL114871-02	94,993	
Motors Regulating Targeted Recycling of the Lateral Border Recycling Compartment		93.839	5F31HL114374-03 REVISED	26,845	
Multiscale Modeling of Myelodysplastic Syndromes	281	93.839	FP00000825_SA003//7R01HL128173-02	13,666	
Quantitative renal oxygenation assessment with compartment specific calibration		93.839	5F31HL123360-02 REVISED	38,367	
Vascular-Targeted Genomic and Genetic Strategies for Acute Chest Syndrome	243	93.839	2012-04562-04-00//R01HL111656-03	5,126	
Vascular-Targeted Genomic and Genetic Strategies for Acute Chest Syndrome	243	93.839	2016-05307-04-00//R01HL111656-03	7,177	
				<b>1,151,586</b>	<b>106,697</b>
3-D printed hyperelastic bone composites for bone regeneration and spine fusion		93.846	1R01AR069580-01	39,576	
A Multi-Center Prospective Study of Quality of Life in Adult Scoliosis	284	93.846	WU-10-154 Amendment 04 //1R01AR055176-02	534	
A novel desmosomal COP9 signalosome complex in epidermal differentiation		93.846	1F32AR066465	34,277	
A prospective study of human bone adaptation using a novel in-vivo loading model	287	93.846	15-210750-00//7R01AR063691-03	10,410	
A regulatory checkpoint in the pathogenesis of inflammatory arthritis		93.846	3R01AR064349-03S1	129,866	
A Regulatory Checkpoint in the Pathogenesis of Inflammatory Arthritis		93.846	4R01AR064349-04	140,138	
AAID-PEPR: Asthma and Atopic Dermatitis Validation of PROMIS Pediatric Instruments		93.846	1U19AR069526-01 REVISED	260,731	
Adipokine Modulation of Fibrosis: Novel Scleroderma Pathway		93.846	5R03AR066343-02	79,998	
Association of genetic and autoantibody signatures with SLE clinical course	221	93.846	000504653-002//R01AR064820	52,729	
Biomarkers and Pathogenesis of Systemic Sclerosis (NIAMS: CORT)	26	93.846	4500001925/5P50AR060780-05	25,720	
Cadherin clusters and actin filaments		93.846	1R01AR070166-01	984	
Caspase 8: A Novel Suppressor of Dendritic Cell-Mediated Autoimmunity		93.846	5K01AR064313-03	33,058	
Caspase 8: A Novel Suppressor of Dendritic Cell-Mediated Autoimmunity		93.846	4K01AR064313-04	81,344	
Contribution of Adipocytes and Adipose Secreted Factors to Fibrosis in Systemic Sclerosis		93.846	1K08AR070285-01	11,187	
Desmoplakin Assembly and Function in Epidermis		93.846	5R37AR043380-20	297,559	

**Northwestern University**

Schedule of Expenditures of Federal Awards  
For the Year Ended August 31, 2016

Research Type/Federal Grantor/Subagency/Project Title	Pass-through ID	CFDA	Sponsor Award Number	FY16 Expense	Passed to Subrecipients
Desmoplakin Assembly and Function in Epidermis (R37 MERIT Extension Application R37AR043380)		93.846	4R37AR043380-21	203,350	
Developing a Nrf2 activator for the treatment of scleroderma	54	93.846	Agr. FE 11/11/2014//1R41AR066418-01	(5,321)	
Development of a Novel RA/Atherosclerosis Mouse Model		93.846	5R01AR064546-03	243,167	
Development of a Novel RA/Atherosclerosis Mouse Model		93.846	4R01AR064546-04	5,944	
EphA/Ephrin-A Signaling in Epidermal Differentiation and Disease		93.846	5R01AR062110-04	385,679	
FAILED REGENERATION IN THE MUSCULAR DYSTROPHIES: INFLAMMATION, FIBROSIS AND FAT	240	93.846	UFDSP00010891//U54AR052646	7,672	
Failed Regeneration in the Muscular Dystrophies: Inflammation, Fibrosis and Fat: Project 2	262	93.846	554991//5U54AR052646	10,320	
Function of Desmoglein 1/Pemphigus Foliaceus Antigen		93.846	5R01AR041836-23	445,333	
Function of Desmoglein 1/Pemphigus Foliaceus Antigen		93.846	4R01AR041836-24	96	
Functional and Structural Links Between Cadherin Adhesion, Gamma-Secretase, and Notch		93.846	5R01AR057992-05	1,597	
Gene expression signatures for treatment response in systemic sclerosis	35	93.846	Agr. 10/06/2015//5R44AR061920-03	120,834	
Genome Wide Association Study in African Americans with Rheumatoid Arthritis	221	93.846	Agmnt 11/14/13 //R01AR057202	324	
Glycosphingolipids Mediate Diabetic Wound Healing Impairment		93.846	1R01AR068375-01A1	4,142	
Human Rheumatoid Arthritis in Mice		93.846	5R03AR061593-03	103,925	
Inflammasome adaptor and effectors in Cryopyrinopathies and crystal arthropathies		93.846	5K01AR066739-02 REVISED	97,969	
Intercadherin Interactions in Epithelial Cells		93.846	5R01AR044016-18	(47,378)	
Inter-junctional signaling in epithelial junctional complex		93.846	2R56AR044016-20	505,694	
Inter-junctional signaling in epithelial junctional complex		93.846	2R01AR044016-20A1	108	
Knee OA: Predictors and Outcomes of Physical Inactivity-Activity Transitions		93.846	5R01AR054155-08	234,742	33,655
Long-term Significance of Pre-radiographic Lesions in Persons at Risk for Knee OA		93.846	5R01AR065473-03	935,367	687,714
Mapping Modifiers of Cardiomyopathy in Muscular Dystrophy	240	93.846	UFDSP00010890	246,369	
Mechanisms Underlying Heterotopic Ossification		93.846	5R01AR066539-02	485,200	
Mobil-Wise: Mobile Phone Remote Coaching After Worksite Joint Adventure Exposure	187	93.846	Agmt 4/24/15//1R21AR065054-01A1	75,375	
Molecular biomarkers of improvement for patients with systemic sclerosis in an open label trial of mycophenolate mofetil	58	93.846	R284/1R21AR068035-02	67,427	
NIAMS Multidisciplinary Clinical Research Center in Rheumatology		93.846	5P60AR064464-03	675,988	79,871
NIAMS Multidisciplinary Clinical Research Center in Rheumatology		93.846	4P60AR064464-04	43,449	
NIAMS: Core Center - Proteomics and Clinical Core	26	93.846	4500001928//5P30AR061271-05	65,706	
Northwestern University Skin Disease Reseach Core Center		93.846	2P30AR057216-08	510,560	
OAI Ancillary- Prediction of Incident and progressive OA from imaging biomarkers	223	93.846	238323 Amend 1//R01AR066601	16,199	
Osteoarthritis Progression and Sensory Pathway Alterations	187	93.846	5R01AR064251-03 Amd 2	88,265	

**Northwestern University**

Schedule of Expenditures of Federal Awards  
For the Year Ended August 31, 2016

Research Type/Federal Grantor/Subagency/Project Title	Pass-through ID	CFDA	Sponsor Award Number	FY16 Expense	Passed to Subrecipients
Osteoarthritis Progression and Sensory Pathway Alterations	187	93.846	12052504-NU//4R01AR064251-04	53,855	
Planning Activity and Nutrition Trial in Lupus to Energize and Renew		93.846	5U34AR064513-02	283,606	51,711
Post Graduate Program In Cutaneous Biology		93.846	5T32AR060710-04	81,878	
Post Graduate Program in Cutaneous Biology		93.846	4T32AR060710-05	30,811	
Postdoctoral Rheumatology Training		93.846	5T32AR007611-14	147,651	
Postdoctoral Rheumatology Training		93.846	4T32AR007611-15	20,243	
Predictive ability of gene expression signatures in skin as SSc biomarkers		93.846	5K23AR059763-03	97,076	
PROMIS Statistical Center		93.846	U54AR057951	103,313	46,739
Pt Reported Outcomes Measurement Information System Technology Center(U54)		93.846	3U54AR057943-04S3	297,408	
Regulators of Epidermal Gene Expression	151	93.846	RAR065480B	163,438	
RhEumatoid Arthritis SynOvial tissue Network (REASON)		93.846	3UH2AR067687-01S2	312,351	116,454
Role of CCR7 in Clinical Response in Inflammatory Arthritis		93.846	5R21AR065076-02	28,782	
Sedentary Behavior Characteristics, Sedentary Profiles, and Subsequent Functional Loss		93.846	5R21AR068500-02	177,195	6,257
Simultaneous Targeting of IRE1a in B Cells and Macrophages for Lupus Therapy		93.846	5R01AR066634-03	339,613	57,869
Synthetic Oleananes: Innovative Treatment of Fibrosis		93.846	5R03AR065800-03	86,492	
Targeting Adiponectin Signaling: Novel Peptide Therapy for Scleroderma		93.846	1R21AR064925-02	(12,480)	
Targeting Adiponectin Signaling: Novel Peptide Therapy for Scleroderma		93.846	1R21AR064925-02	2,022	2,022
The Vasculitis of Kawasaki Disease		93.846	5R21AR068041-02	220,276	78,219
Topical Delivery of siRNA Nanoconjugates: Suppressing Epidermal Hyperplasia		93.846	5R01AR060810-04	161,680	
Validation of PROMIS Measures in Children with Brain Tumors		93.846	5R01CA174452-04	302,802	91,335
				<b>9,624,225</b>	<b>1,251,846</b>
10/22 Diabetes Prevention Program Outcomes Study (DPPOS) Phase 3- Research Project		93.847	2U01DK048380-23S2	196,643	
A Culturally Targeted Transplant Program to Increase Live Donation in Hispanics		93.847	1R01DK104876-01A1	108,894	2,697
A Multi-Center Group to Study Acute Liver Failure	271	93.847	GMO-161131//2U01DK058369-16	104,600	
A novel autophagy gene beclin 2 in the prevention of type 2 diabetes and obesity		93.847	5R00DK094980-05 REVISED	164,439	
A novel role of FFAR2 in pancreatic beta cell function	234	93.847	FP035726-02-E//P30DK020595	30,903	
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	271	93.847	GMO-161130//2U01DK058369-16	2,060	
A2ALL-Patient Safety System Improvements in Living Donor Liver Transplantation		93.847	R01DK090129	240,351	50,308
Acute Liver Failure Study Group 13C-Methacetin Breath Test for the Prediction of Outcome in Acute Liver Failure	271	93.847	GMO160216//2U01DK058369-16	217	
Adult Life Predictors of Genitourinary Disorders	127	93.847	115-9107-03-M1//5R01 DK084997-04	8,764	
Altered Microbiome of Chronic Pelvic Pain		93.847	1R01DK103769-01A1	23,790	

**Northwestern University**

Schedule of Expenditures of Federal Awards  
For the Year Ended August 31, 2016

Research Type/Federal Grantor/Subagency/Project Title	Pass-through ID	CFDA	Sponsor Award Number	FY16 Expense	Passed to Subrecipients
An Assessment of Liver Disease in HIV-infected and HIV/HBV Co-infected Tanzanians		93.847	5K23DK095707-03	61,467	23,290
An Assessment of Liver Disease in HIV-infected and HIV/HBV Co-infected Tanzanians		93.847	4K23DK095707-04	66,158	
Basic Science Training Grant in Urology		93.847	5T32DK062716-10	24,257	
Brain imaging based strategies for treating UCPPS pain		93.847	1R01DK100924-01	25,810	4,020
Chemokine Mechanisms in Chronic Pelvic Pain		93.847	5R01DK083609-05	(4,268)	
Chicago Center for Diabetes Translation Research	234	93.847	FP047431-08//P30DK092949	19,231	14,597
Cholestasis and the Unfolded Protein Response		93.847	5R01DK093807-04	292,598	
Circadian control of nutrient-sensing and fuel utilization in skeletal muscle		93.847	5K01DK105137-02	133,636	
Clinical Islet Transplantation: Data Coordinating Center	245	93.847	1001259991/2U01DK070431-11	370,360	
Collaborative Islet Transplant Registry (CITR)	66	93.847	CITR Agmt 4/22/2013	9,233	
Community Translation of a Lifestyle Intervention to Improve Health in Diabetes		93.847	5R18DK083941-06	280,449	16,445
Community-Clinic Partnership to Promote Physical Activity in South Asian Women	152	93.847	1R56DK099680-01A1	31,751	27,864
Defining bacterial virulence, cAMP and PKA in necrotizing enterocolitis		93.847	5K08DK106450-02	168,515	122,472
Defining Clinically Relevant Phenotypes of PPI Non-Responders		93.847	5R01DK092217-03	18,184	
Design and Implementation of an Intervention for Transitions in Diabetes Care	234	93.847	FP047431-09//P30DK092949	14,975	
Development, cellular plasticity and homeostasis of the exocrine pancreas		93.847	5R01DK106266-03	294,935	
Diabetes Prevention Program Outcomes Study- Phase 2		93.847	5U01DK048380-21	(49,961)	
Diabetes Research and Training Center	234	93.847	FP035726-02-PR//5P30DK020595-38	34,143	
DPPOS Follow-Up		93.847	2U01DK048380-22	191,692	
Effect of Barrier Function on HIV Interactions in the Glans after Circumcision		93.847	5R21DK105865-02	80,139	
Epidemiology of Diabetes Interventions and Complications (EDIC)	33	93.847	RES510027//DK094157	159,506	
Establishing Immunological Tolerance to Transplanted Pancreatic Beta-Cells F32 for Joseph Stephen Uzarski in Support of: Delineating Determinants of Renal Tubulogenesis in an ECM-based Co-culture Model	277	93.847	VUMC38573/2 U01 DK072473-07	(34)	
FGF23 and Cardiovascular Disease in CKD		93.847	5F32DK103499-02	51,593	
FGF23 and Cardiovascular Disease in CKD		93.847	5R01DK081374-10	792,924	340,008
FGF-23 and Clinical Outcomes in ADPKD patients	238	93.847	FY15.269.001/AMD 2//5R01DK094796-03	140,863	5,026
FGF23 and mineral metabolism in Acute Kidney Injury		93.847	5R21DK100754-02	221,290	62,051
Functional Retinal Imaging to Monitor Pharmacologic Therapies in Diabetic Retinopathy		93.847	1DP3DK108248-01 REVISED	347,731	
GATA1 Mutation in Defective Erythropoiesis		93.847	5R01DK101329-03	360,449	
GATA1 Mutation in Defective Erythropoiesis		93.847	4R01DK101329-04	26,776	
Genetics and Evolution of Fetal Human Fat Accretion During Development		93.847	5R01DK099820-03	232,663	146,680
Genetics and Evolution of Fetal Human Fat Accretion During Development		93.847	4R01DK099820-04	28,867	
Genetics and Genomics of Maternal Glycemia During Pregnancy		93.847	5R01DK097534-03	479,908	357,170
Genetics and Genomics of Maternal Glycemia During Pregnancy		93.847	4R01DK097534-04	36,745	
Health literacy intervention to improve diabetes outcomes among rural primary care	224	93.847	50961//R01DK107572	27,433	

**Northwestern University**

Schedule of Expenditures of Federal Awards  
For the Year Ended August 31, 2016

Research Type/Federal Grantor/Subagency/Project Title	Pass-through ID	CFDA	Sponsor Award Number	FY16 Expense	Passed to Subrecipients
Hearing Impairment in Long-Term Type 1 Diabetes	33	93.847	RES508623//1DP3DK101074-01	6,343	
Hyperglycemia and Adverse Pregnancy Outcome (HAPO) Follow Up Study		93.847	4U01DK094830-05	754,059	155,689
Hyperglycemia and Adverse Pregnancy Outcome (HAPO) Follow-Up Study		93.847	5U01DK094830-04	3,367,840	2,510,773
Impact of Emerging Health Insurance Designs on Diabetes Complications	88	93.847	AH000527//5R01DK100304-03	14,155	
Impact of phosphate and FGF23 reduction on intermediate end points in CKD		93.847	5R01DK102438-03	789,958	561,973
Integration of Feeding and Glucose Metabolism by the Circadian Gene Network		93.847	5R01DK090625-04	(173,490)	
Integration of Feeding Time and Glucose Metabolism by the Circadian Gene Network		93.847	2R01DK090625-05	231,893	
Interplay of Dietary Lipid and Circadian Dysregulation in Metabolic Syndrome		93.847	5R01DK100814-03	482,034	
Investigation of FFAR2 as a novel regulator of pancreatic beta cell function		93.847	5F31DK102371-02	32,324	
Lipoteichoic acid mediated immune modulation of chronic pain		93.847	1R01DK108127-01A1	11,679	
Living Donor Liver Transplant - Predictive Models for Long-Term Health Outcomes		93.847	5U01DK062467-12	373	
Mast cells in male pelvic pain and lower urinary tract dysfunction		93.847	2R01DK083609-06A1	33,216	
Maternal Obesity and Gestational Diabetes: Impact on Metabolome		93.847	5R01DK095963-03	338,712	252,437
Maternal Obesity and Gestational Diabetes: Impact on Metabolome		93.847	4R01DK095963-04	94,030	
Measuring Human BAT Volume and Activity by Quantitative and Functional MRI	14	93.847	901494-NU//R21DK103145-02	38,390	
Med1 in Liver Metabolism, Regeneration and Cancer		93.847	5R01DK097249-03	391,677	
Med1 in Liver Metabolism, Regeneration and Cancer		93.847	4R01DK097249-04	49,448	
Mentored Patient Oriented Research in Mineral Metabolism		93.847	5K24DK093723-05	179,243	30,019
Methylomics of prenatal GDM: Natural history & lifestyle intervention in children	172	93.847	1R01DK100790-50363-S2	122,080	
Molecular and Genetic Mechanisms of Fatty Liver Disease		93.847	1R56DK105824-01A1	162,659	
Mouse Urinary Bladder Identifying Targets to Treat Overactive Bladder		93.847	1R01DK095775-01A1	245	
Multifunctional Printed Scaffolds for Enhancing Hepatocyte Viability and Function		93.847	5K01DK099454-03	107,994	
Multifunctional Printed Scaffolds for Enhancing Hepatocyte Viability and Function		93.847	4K01DK099454-04	14,478	
Neutrophil interactions with apical ICAM-1 regulate intestinal epithelial homeostasis		93.847	5K01DK101675-04	163,785	
Nuclear Repressors in Genomic Control of Healthful Obesity		93.847	1R01DK108987-01	100,358	
NUKIDs: Scientist Training Program in Kidney Disease		93.847	1T32DK108738-01	16,407	
NW University Program in Endo Diabetes and Hormone Action		93.847	5T32DK007169-36	218,040	
NW University Program in Endo Diabetes and Hormone Action		93.847	2T32DK007169-37	48,839	
Omega-3 derived epoxy fatty acids and sEH in pancreatitis-induced carcinogenesis		93.847	1R01DK107767-01A1	70,972	
Optimization and control of hepatocyte activity via biofunctional modification		93.847	5K08DK101757-03	151,736	
OPT-IN: Optimizing Intensive Lifestyle Intervention for Weight Loss		93.847	4R01DK097364-05	49,177	
Opt-IN: Optimizing Intensive Lifestyle Interventions for Weight Loss		93.847	5R01DK097364-04	599,278	90,216
Pathogenesis of Diabetic Nephropathy		93.847	5R01DK060635-14	219,073	
Pathogenesis of Diabetic Nephropathy		93.847	4R01DK060635-15	36,878	
Pelvic Pain and Depression		93.847	5U01DK082342-08	1,099,790	
PERL: A multicenter clinical trial of allopurinol to prevent GFR loss in T1D	125	93.847	1987203-6 AMEND 1UC4DK1101108-01	286,218	18,863
Phenotype of urinary symptoms and relationships with genotype, sleep and obesity		93.847	3U01DK097779-04S1 REVISED	512,605	188,075

**Northwestern University**

Schedule of Expenditures of Federal Awards  
For the Year Ended August 31, 2016

Research Type/Federal Grantor/Subagency/Project Title	Pass-through ID	CFDA	Sponsor Award Number	FY16 Expense	Passed to Subrecipients
Phenotype of urinary symptoms and relationships with genotype, sleep and obesity		93.847	4U01DK097779-05	108,702	
Pilot Studies Targeting Mineral Metabolism in CKD		93.847	5U01DK099930-05	536,506	
Pregnancy-Related Risk Factors and Glucose Intolerance in Women during Midlife	127	93.847	RNG200279-05//R01DK106201	70,625	
Prevention of Type-2 Diabetes: The Circadian System as a Novel Target for Long-Term Maintenance of Weight Loss	234	93.847	FP035726-02-H//4P30DK020595-39	25,190	
Probiotic Analgesia for Pelvic Pain		93.847	1R56DK102807-01 REVISED	91,881	
Promotora-Led Intervention to Promote Weight Loss in Latinas at-risk for Diabetes		93.847	5K23DK095981-06	175,030	50,508
Proteomics of Primary Hyperoxaluria Type I: A Rare Calcium Oxalate Stone Disease	140	93.847	NOR-182824-01// PO:64294419//U54DK083908	31,872	
Randomized, double blind, prospective trial investigating the efficacy of Methotrexate in induction and maintenance of steroid free remission in ulcerative colitis (MEthotrexate Response in Treatment of UC-MERIT-UC)	260	93.847	5-34106//5U01DK092239-05	104	
Regulation of FGF23 by DMP1 in Health and in Chronic Kidney Disease (CKD)		93.847	5R01DK101730-02	327,837	11,266
Regulation of FGF23 in Chronic Kidney Disease (CKD) by iron and inflammation		93.847	5R01DK102815-02	286,092	54,995
Regulation of metabolism and diabetes mellitus by tristetraprolin		93.847	5F30DK102341-02	28,537	
Regulation of Ulcerative Colitis by mast cells and histamine		93.847	5K08DK097721-02	101,211	81,648
Residual Beta Cell Function in Patients with Long-Term Type 1 Diabetes	33	93.847	RES509477//DP3DK104438	28,499	
Role of Ahr in T Lymphocyte Development and Function		93.847	2R01DK105562-06A1 REVISED	14,352	
Role of FGF23 in Mineral Metabolism Across the Spectrum of Chronic Kidney Disease		93.847	5R01DK076116-10	194,375	7,883
Self-Administered CBT for IBS: A Multicenter Trial	203	93.847	Sub#R986638///1U01DK077738	5,195	
Signaling Pathways in Renal Fibrogenesis		93.847	5R01DK049362-17	(4,221)	
Signaling Pathways in Renal Fibrogenesis		93.847	5R01DK049362-17	4,203	4,203
SMART Weight Loss Management		93.847	1R01DK108678-01A1	177,494	5,430
T cells in Chronic Pelvic Pain		93.847	3R01DK094898-03S1	214,445	
T cells in Chronic Pelvic Pain		93.847	4R01DK094898-04	312,101	
Testing a medication risk communication and surveillance strategy: The EMC2 Trial		93.847	5R01DK103684-02	568,964	326,470
The Esophagogastric Junction in Health and Disease		93.847	5R01DK056033-14	275,589	
The function and regulation of the novel pregnancy-specific hexokinase HKDC1		93.847	5R01DK104927-02	386,684	66,995
The mechanics of symptom generation in dysphagia		93.847	5R01DK079902-08	329,191	
The Role of an RNA Binding Protein, Tristetrapolin, in Hepatic Glucose Metabolism and the Development of Diabetes		93.847	1F30DK109608-01	10,826	
The role of emergency granulopoiesis in the pathogenesis of Fanconi Anemia		93.847	5R01DK098812-03 REVISED	285,673	
The role of microenvironment in esophageal epithelial homeostasis		93.847	5R00DK094977-04	278,880	
The Role of PAI-1 and Circadian Disruption in the Pathogenesis of NASH		93.847	5K08DK095992-03	111,546	
The roles of pleckstrin-2 as a functional node in erythropoiesis		93.847	5R01DK102718-02	444,208	109,131

**Northwestern University**

Schedule of Expenditures of Federal Awards  
For the Year Ended August 31, 2016

Research Type/Federal Grantor/Subagency/Project Title	Pass-through ID	CFDA	Sponsor Award Number	FY16 Expense	Passed to Subrecipients
Training Grant in Gastrointestinal Physiology and Psychology		93.847	3T32DK101363-03S1	321,847	
Transcriptional Coactivators in Liver Function		93.847	R01DK083163	(4,243)	
Transplant Surgery Scientist Training Program		93.847	5T32DK077662-09	115,514	
Transplant Surgery Scientist Training Program		93.847	3T32DK077662-10S2	42,191	
Tryptase - PAR2 axis involved in urinary voiding dysfunction		93.847	5F32DK104544-02	61,256	
Urinary Renin Angiotensin System in Diabetes		93.847	5R01DK104785-02	299,566	
Vitamin D and type 2 diabetes (D2d study)	215	93.847	5008752-SERV//U01DK098245-03	195,004	
Vitamin D and type 2 diabetes (D2d study)	215	93.847	5008752-SERV//4U01DK098245-04	59,348	
Vitamin D Catabolism in Chronic Kidney Disease	274	93.847	UWSC7707//5R01DK099199-03	27,051	
				<b>23,012,300</b>	<b>5,699,202</b>
Self-administered CBT for IBS: A Multicenter Trial	203	93.848	R928233//1U01DK077738	<b>(167,084)</b>	
(CREST-2) Trial: Carotid Revascularization and Medical Management for Asymptomatic Carotid Stenosis Trial	141	93.853	NWU-187276-02//5U01NS080168-03	18,348	
A Primate Model of an Intra-Cortically Controlled FES Prosthesis for Grasp		93.853	5R01NS053603-10	374,250	94,295
A role for beta-arrestins in mGluR-dependent plasticity		93.853	5R21NS088916-02	168,827	
ARRA-POINT: Platelet-Oriented Inhibition in New TIA	66	93.853	Agreement signed 11/9/10 // 1U01NS026835-01A1	3,131	
Assessing Aberrant Motor Learning in Parkinsons Disease	177	93.853	41880-A Amd 1//1R21NS083578-01A1	79,309	
Autophagy Regulation of Glioblastoma Tumorigenesis and Responses to Therapy		93.853	5R01NS095634-02	236,611	
B7-H1 Expressing Macrophages Mediate Immunosuppression in Glioma		93.853	5R00NS078055-05	340,018	
Behavioral and molecular responses to high-intensity exercise in humans with iSCI		93.853	5F31NS084723-02 REVISED	7,197	
Biomimetic Somatosensory Feedback through Intracorticalmicrostimulation		93.853	1R01NS095251-01A1 REVISED	92,256	29,305
Body-machine interfaces after spinal injury: rehabilitation and brain plasticity		93.853	5F31NS090877-02	36,950	
BRAF Mutation in Malignant Astrocytoma Origin, Evolution, and Response to Therapy		93.853	5R01NS080619-05	214,244	82,937
Cajal-Retzius cells and neuronal signaling in postnatal cortical networks		93.853	5R01NS064135-07 REVISED	432,193	
Cellular dissection of herpes simplex encephalitis with iPS cells	186	93.853	5R01NS072381-05/Amend. 2	103,319	
Cellular Pathways Underlying Polyglutamine Degeneration		93.853	5R01NS062051-05	(8,015)	
Cerebellar Microcircuits: Organization and Development		93.853	R01NS009904	(10,284)	
Cerebral Small Vessels in Motor and Cognitive Decline		93.853	5R01NS085002-04 REVISED	267,161	
Chemokine Signaling in Diabetic Neuropathy		93.853	5K08NS079482-03	125,414	
Chemokine Signaling in Diabetic Neuropathy		93.853	4K08NS079482-04	34,439	
Circadian Dysfunction, Encephalopathy, and Cognitive Outcomes after Critical Illness		93.853	5K23NS092975-02	157,171	
C-kit Signaling Pathways Regulate EAE Susceptibility in Male SJL Mice		93.853	5F31NS084691-03	43,329	
Clinical Coordination Center for STEADY-PD3		93.853	5U01NS080818-03	3,852,961	2,403,479

**Northwestern University**

Schedule of Expenditures of Federal Awards  
For the Year Ended August 31, 2016

Research Type/Federal Grantor/Subagency/Project Title	Pass-through ID	CFDA	Sponsor Award Number	FY16 Expense	Passed to Subrecipients
Clinical Research Sites for the Network of Excellence in Neuroscience Clinical Trials (NEXT Sites)		93.853	5U10NS077271-05	186,187	21,410
Clinical Research Sites for the Network of Excellence in Neuroscience Clinical Trials (NEXT Sites)		93.853	4U10NS077271-06	35,871	
Coding properties of Vibrissal-Responsive Trigeminal Ganglion Neurons		93.853	5R01NS093585-02	329,298	
Combined Approach to Genetic Modifiers of Inherited Epilepsy		93.853	5R01NS053792-13	188,837	
Combined Approach to the Genetic Basis of Epilepsy		93.853	2R01NS053792-14	170,476	15,582
Computer Models of Normal and Abnormal Discharge Patterns in Human Motoneurons	274	93.853	747752 // R01 NS062200-05A1	(19,923)	
Computer Simulations of Populations of Mammalian Motor Units		93.853	5R01NS071951-05	42,441	16,052
Concordance of TDP-43 Inclusions with Cortical Atrophy and Clinical Phenotype		93.853	5R01NS085770-03	367,610	
Cortical Pathophysiology of Pain		93.853	5R01NS035115-16	(5,914)	
CRCNS: Collaboration on High Resolution Maps of Synapses on Hippocampal Neurons		93.853	5R01NS077601-03 REVISED	24,272	
DEFUSE 3: Endovascular Therapy Following Imaging Evaluation for Ischemic Stroke 3	236	93.853	010085-110021//1U01NS092076-01A1 R	2,206	
Designing brain machine interfaces to drive plasticity and enhance recovery after brain injury		93.853	5R01NS094748-02	358,715	99,229
Determinants of Neurodegenerative Decline in Primary Progressive Aphasia		93.853	1R01NS075075-01A1	166,998	8,616
Determinants of Neurodegenerative Decline in Primary Progressive Aphasia		93.853	4R01NS075075-05	179,079	
Development of a Bidirectional Brain Machine Interface		93.853	5R01NS048845-09	110,398	59,339
Development of excitatory V2a connectivity within spinal circuits		93.853	5F32NS087889-02 REVISED	44,832	
Development of mouse models for ALS5 and SPG11		93.853	1R21NS096572-01A1	59,734	
Development of Novel MR Imaging for Ischemic Stroke Evaluation		93.853	1R01NS093908-01	110,108	61,979
DIFFERING NEURONAL MECHANISMS MEDIATING LOCOMOTION AND SPASMS AFTER SPINAL CORD INJURY	222	93.853	S002//2R01NS047567-11A1	17,089	
Disease Mechanisms in Human Ubiquilinopathy		93.853	5R01NS078504-04	289,068	
Disease Mechanisms in Human Ubiquilinopathy		93.853	4R01NS078504-05 REVISED	413,722	
Dopaminergic and Muscarinic Signaling in the Striatum		93.853	5R01NS034696-21	512,848	
DProt#99-705: Carotid Revascularization Endarterectomy vs. Stent Trial (CREST)	252	93.853	Agmt 06-16-03/ R01 NS038384-05	3,034	
Effect of Unilateral and Bilateral STN Stimulation on Eye-Hand Coordination		93.853	1R01NS092950-01A1	29,548	
Electrical and Mechanical Properties of Motor Units in a Mouse Model of ALS		93.853	5R01NS077863-05	393,406	316,893
Elp1 function in Familial Dysautonomia		93.853	1R56NS089626-01A1	278,513	
Elp1 function in Familial Dysautonomia		93.853	1R01NS095894-01	13,813	
Evaluation of glucocerebrosidase pathway biomarkers in Parkinson Disease	22	93.853	1U01NS094148-01	65,661	
Evaluation of glucocerebrosidase pathway biomarkers in Parkinson Disease	98	93.853	0255-1042-4609//5U01NS094148-03	70,990	

**Northwestern University**

Schedule of Expenditures of Federal Awards  
For the Year Ended August 31, 2016

Research Type/Federal Grantor/Subagency/Project Title	Pass-through ID	CFDA	Sponsor Award Number	FY16 Expense	Passed to Subrecipients
Exploratory Study of Different Doses of Endurance Exercise in People with Parkinson's Disease	238	93.853	FY16.160.007 AMD4 / R01NS074343	109,844	
FTLD Clinical Research Consortium	231	93.853	8568sc//U54NS092089	474	
Function and dysfunction of brain networks for the flexible expression of memory		93.853	F32NS083340-03	1,600	
Functional Development of Motor Networks		93.853	2R01NS067299-06A1	534,379	
Functional Segregation Within the Whisker-Barrel Neuraxis	284	93.853	WU-16-153-MOD-1//5R01NS091439-02	122,470	
Functions of filamin in brain development and diseases		93.853	5R01NS087575-02	255,200	
Galectin Modulation of Glutamate Receptors and Neuronal Function		93.853	5R01NS080598-03	156,699	
Galectin Modulation of Glutamate Receptors and Neuronal Function		93.853	4R01NS080598-04	249,925	
General Motor Control Mechanisms and Disease Training Program		93.853	5T32NS041234-15 REVISED	219,968	
Generation of High Passage and Immortalized Human Microglia Cell Lines		93.853	5R21NS084210-02	163,357	102,072
Genetic labeling and visualization of CSMN in models of motor neuron disorders		93.853	5R21NS085750-02	61,017	
Genetic Modifiers of Childhood Epilepsy		93.853	5R01NS084959-03	346,212	
Genetic tools to study CNS development and function		93.853	5R21NS092034-02	292,732	
Glioblastoma Phenotype Modulation Through miRNA Control of Wnt Signaling		93.853	5R01NS093843-02	286,757	18,316
HCN channel trafficking in epilepsy		93.853	5R01NS059934-08	498,022	1,361
Hereditary Defects in Human Sodium Channels		93.853	5R01NS032387-23	232,371	
IL13Ra2 targeted T-cell therapy for glioma		93.853	7R21NS089802-03	156,585	
Immune Modifying Microparticles for Acute Treatment of Spinal Cord Injury		93.853	1F30NS093811-01A1	19,688	
Immunoregulation and Pathology of Chronic Relapsing EAE		93.853	5R01NS026543-26	253,766	
Immunoregulation and Pathology of Chronic-Relapsing EAE		93.853	4R01NS026543-27	91,631	
In Vivo Analysis of Cortical Projection Neurons		93.853	5R21NS087479-02	81,353	
Induced Pluripotent Stem Cell Core for NINDS Investigators		93.853	5P30NS081774-04	411,595	
Induced Pluripotent Stem Cell Core for NINDS Investigators		93.853	4P30NS081774-05	91,099	
Information Processing in the Themosensory System of Drosophila Melanogaster		93.853	5F31NS093873-02	37,958	
Innate Regulation and CD+Th1/17 Immunity in TMEV-Induced Demyelination		93.853	5R01NS062365-05	142,716	
Integration of synaptic excitation and inhibition in the deep cerebellar nuclei		93.853	1F31NS092329-01	30,637	
Interneuron and Motoneuron Properties in Chronic Spinal Injury	222	93.853	AGMT 7/14/15//R01NS047567	28,513	
Intranasal Stem-Cell Based Therapy of Glioblastoma		93.853	7R01NS087990-03	300,016	
Intrinsic Plasticity and Information Storage in Cerebellar Purkinje Cells	234	93.853	FP038885//R01NS62771	12,131	
Investigation of Histone H3 Post-Translational Modifications in Pediatric Brainstem Glioma		93.853	1K08NS097624-01	3,681	
Ionic currents and spiking in cerebellar nuclear neurons		93.853	5R37NS039395-16	551,462	
Kainate Receptors in Signaling Between Hippocampal Mossy Cells and Granule Cells		93.853	1R21NS090040-01	218,235	
LRRK2-mediated molecular and synaptic events in the striatum		93.853	1R01NS097901-01	7,423	

**Northwestern University**

Schedule of Expenditures of Federal Awards  
For the Year Ended August 31, 2016

Research Type/Federal Grantor/Subagency/Project Title	Pass-through ID	CFDA	Sponsor Award Number	FY16 Expense	Passed to Subrecipients
L-type channels as pharmacological targets for the treatment and prevention of febrile seizures		93.853	1R21NS096424-01	105,585	
Magnetic-vortex microdiscs for glioma therapy		93.853	7R01NS077388-05	248,235	
Massive scale electrical neural recordings in vivo using commercial ROIC chips	180	93.853	CC# 81395 1U01NS094248-01	16,313	
Maternal Outcomes and Neurodevelopmental Effects of Antiepileptic Drugs	67	93.853	T470333//3U01NS038455-14	119,752	
Maternal Outcomes and Neurodevelopmental Effects of Antiepileptic Drugs	67	93.853	T652681//4U01NS038455-15	6,820	
Mechanical Signals and Trigeminal Ganglion Neuron Responses During Whisking		93.853	5F31NS090872-02	33,826	
Mechanisms of Distorted Inputs in Chronic Spinal Injury		93.853	5R01NS089313-03	521,020	
Mechanisms of Early Recurrence in Intracranial Atherosclerotic Disease (MyRIAD)	254	93.853	662706//5R01NS084288-03	35,315	
Mechanisms of Early Recurrence in Intracranial Atherosclerotic Disease (MyRIAD)	254	93.853	662706//5R01NS084288-03	773	
Mechanisms Underlying Tau45-230-Induced Neuronal Degeneration		93.853	5R01NS090993-02	252,692	
Metabolic Control of Immune Suppression in Gliomas		93.853	7R01NS093903-02	219,007	
MicroRNAs and Perinatal Hypoxia-Ischemia		93.853	5R01NS086945-02	328,934	133,030
Minimally Invasive Surgery plus rt-PA for ICH Evacuation	122	93.853	2001995429//U01NS080824-02	32	
Molecular basis of Scapuloperoneal SMA and Charcot-Marie-Tooth disease type 2C		93.853	5R01NS078287-04	326,342	
Motor Cortical Function During Motor Learning with a Brain-Machine Interface		93.853	5F31NS092356-02	33,687	
Myoelectric Computer Interface to Reduce Muscle Co-Activation after Stroke		93.853	5R21NS084069-02	145,241	3,732
Myoferlin in muscle membrane fusion and repair		93.853	5R01NS047726-12	431,330	
Neural mechanisms of memory stability and change		93.853	1F32NS087885	3,188	
Neural Systems for the Dynamic Use of Memory		93.853	5R00NS069788-04 REVISED	(1,670)	
Neurogenetic Approaches to Study Directed Behavior in Drosophila		93.853	5R01NS086859-03	318,139	
Neurological Emergencies Treatment Trials: Clinical Coordinating Center	255	93.853	3002108368 Amend No.4//U01NS056975	35,894	
NeuroNEXT Clinical Trials	137	93.853	Master Agrmnt 2/27/12/ U10NS077271	26,791	
Neuroprotection Studies in PD: A Coordinating Center	264	93.853	416634 / U01NS043128	4,414	
New Directions in Biology and Disease of Skeletal Muscle		93.853	1R13NS098752-01	13,200	
NN104 / ZZ-3K3A-201: A multi-center, Phase 2 study using a continual reassessment method to determine the safety and tolerability of 3K3A-APC, a recombinant variant of human activated protein C (APC), in combination with tissue plasminogen activator (tPA	137	93.853	NN104//U01NS088312	2,470	
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)	137	93.853	4U44NS090616-02	645	

**Northwestern University**

Schedule of Expenditures of Federal Awards  
For the Year Ended August 31, 2016

Research Type/Federal Grantor/Subagency/Project Title	Pass-through ID	CFDA	Sponsor Award Number	FY16 Expense	Passed to Subrecipients
Novel Therapies for Epilepsy Using Biodegradable Immune-Modifying Nanoparticles		93.853	5R21NS094999-02	195,407	30,179
NRSA F31 Predoctoral Fellowship for Sarah Brooker in support of: Beta1-integrin and BMP pathway interactions in adult hippocampal neurogenesis		93.853	5F31NS089154-02	32,835	
NRSA Fellowship for Warren Alexander McGee in support of: TDP-43-regulated microRNAs and TDP-43 Proteinopathy		93.853	5F30NS090893-02 REVISED	37,581	
Stretch Reflex Contributions to Multijoint Coordination	181	93.853	03.81888-Amd 3/2R01NS053813-05	77,396	
Probing Somatosensory Representations in the Cuneate Nucleus of Awake Primates	234	93.853	FP060211//R01NS095162	161,691	
Protein Acetylation and Selective Autophagy		93.853	5R01NS070168-4	33,985	
Radiation + Temozolomide Induced Mutation and Malignant Progression of GBM		93.853	1R01NS095642-01	91,987	
Rational derivation of DA neuron subtypes from iPS cells for improved modelling of Parkinson's disease		93.853	1R01NS096240-01	248,397	
Regulating fibrosis and muscle growth in the muscular dystrophies		93.853	5P01NS072027-06	1,801,106	1,322,170
REGULATION OF GLIOTRANSMISSION BY STORE-OPERATED CALCIUM CHANNELS		93.853	1F30NS090817-01A1	4,428	
Regulation of neural progenitor cell migration by store-operated CRAC channels		93.853	5R01NS094011-02	286,261	
Regulation of neuronal survival by gamma protocadherins		93.853	5R21NS079880-02	307	
Regulation of Neurotransmitter Metabolism		93.853	R01NS020778	9,886	
Research Education Program for Trainees in Neurology		93.853	5R25NS070695-07	55,976	
Reverse Engineering Motor Unit Discharge	274	93.853	UWSC8225(BPO#2840)//R01NS085331	200,137	
Rhythmicity and Synchrony in the Basal Ganglia		93.853	5P50NS047085-13	1,291,396	193,240
Rhythmicity and Synchrony in the Basal Ganglia		93.853	4P50NS047085-14	86,745	
Role of 4.1 Proteins in Kainate Receptor Localization and Function		93.853	5R01NS071952-04	(4,043)	
Role of mTORC2 in GBM - Development of a Novel Therapeutic mTOR Kinase Inhibitor	134	93.853	233303-05015//5R01NS073831-05	5,075	
ScanImage: Flexible Software for Laser Scanning Microscopy in Neuroscience	279	93.853	R24NS086549-NU Amd 1	75,477	
Spatiotemporal Integration of Mechanical Information in the Rat Brainstem		93.853	5F31NS092335-02	33,922	
Spinal Muscular Atrophy: Inducing SMN Expression	14	93.853	901483-NU/5R01NS060926-07	55,092	
Spinal Muscular Atrophy: Inducing SMN Expression	14	93.853	901483//5R01NS060926-05	(2,909)	
Spinal serotonin in cerebral palsy	162	93.853	EH15-177-S1//5R01NS091278-02	57,084	
Store-Operated Channels in the Nervous System		93.853	5R01NS057499-08 REVISED	68,979	
Store-operated channels in the nervous system		93.853	4R01NS057499-09 REVISED	181,129	
Striatopallidal GABAergic Signaling in Mouse Models of Parkinson's Disease		93.853	5R01NS069777-05	27,596	
Stroke Trials Network - Regional Coordinating Stroke Centers		93.853	5U10NS086608-03	323,235	42,926

**Northwestern University**

Schedule of Expenditures of Federal Awards  
For the Year Ended August 31, 2016

Research Type/Federal Grantor/Subagency/Project Title	Pass-through ID	CFDA	Sponsor Award Number	FY16 Expense	Passed to Subrecipients
Stroke Trials Network - Regional Coordinating Stroke Centers		93.853	4U10NS086608-04	25,874	
SUDEP Translational Research Alliance – SUTRA	33	93.853	RES510370//5U01NS090407-02	73,934	
Synaptic Circuit Organization of Motor Cortex		93.853	5R01NS061963-08	306,761	
Synaptic Circuit Organization of Motor Cortex		93.853	4R01NS061963-09	28,570	
Synaptic physiology in the zebrafish cerebellum during swimming and learning		93.853	1F31NS095476-01	18,168	
Synaptic Transmission, Plasticity and Integration in the Subthalamic Nucleus		93.853	5R37NS041280-17	318,364	
Synaptic Transmission, Plasticity, and Integration in the Subthalamic Nucleus		93.853	4R37NS041280-18	76,199	
Targeting histone demethylase activity for the treatment of pediatric brainstem glioma		93.853	1R01NS093079-02	340,794	
Targeting the NMDA receptor-mediated disruption of autonomous subthalamic nucleus activity to ameliorate physiological and motor symptoms in a mouse model of Parkinson's Disease		93.853	5F31NS090845-02 REVISED	40,425	
The Human Motor Output Map		93.853	1R01NS098509-01	15,510	
The Interaction of IDO and TRegs Leads to Immunosuppression in Glioma		93.853	5R00NS082381-05	305,006	
The Neural Control of Internal Joint State		93.853	5R01NS086973-03 REVISED	360,483	14,285
The Representation of Uncertainty in the Sensorimotor System	181	93.853	RIC 81881-NU/ R01 NS074044 AMD 6	195,913	
The role of a-synuclein accumulation in lysosomal hydrolase trafficking and function		93.853	5R01NS092823-02	301,286	
The Role of Lysosomal Glucocerebrosidase in Synucleinopathies		93.853	5R01NS076054-06	161,610	
The role of neonatal kainate receptors in developing hippocampal circuits.		93.853	5R21NS082785-02 REVISED	(5,590)	
The role of Sirt1 in Huntington's Disease		93.853	5R01NS080331-2	194,920	
The role of UCHL1 on the health and stability of upper motor neurons		93.853	5R01NS085161-03	378,163	
The role of UCHL1 on the health and stability of upper motor neurons		93.853	4R01NS085161-04	24,559	
The role of uncertainty for motor learning and adaptation	180	93.853	81378 NU//2R01NS063399-07	37,441	
The Stroke Hyperglycemia Insulin Network Effort (SHINE) Trial	273	93.853	GC12107-149595//U01NS069498	13,242	
Training in Neurotherapeutics Discovery and Development for Academic Scientists	225	93.853	4R25NS077582-05	13,415	
Training Program in the Neuroscience of Human Cognition		93.853	5T32NS047987-10	301,411	
Understanding the cellular basis of Movement Disorders		93.853	5R01NS082351-03	268,718	
Understanding the cellular basis of Movement Disorders		93.853	4R01NS082351-04	17,769	
Validation of the HD-HRQOL (Huntington Disease Health Related Quality of Life)	255	93.853	3002420992//5R01NS077946-04	60,414	
Validation of the HD-HRQOL (Huntington Disease Health Related Quality of Life)	255	93.853	3002420992//5R01NS077946-04	6,148	
Wrist/Grasp Muscle Activity Patterns for EMG-neural Interface Prosthesis Control		93.853	5F31NS083166-03	503	
				<b>29,521,405</b>	<b>5,070,427</b>
(CTOTC-12/ ARTEMIS) Safety of Donor Alloantigen Reactive Tregs to Facilitate Minimization and/or Discontinuation of Immunosuppression in Adult Liver Transplant Recipients	231	93.855	4U01AI104347-04//9320sc	4,256	
A Development-Specific Mechanism of Pathogenesis in HSV Encephalitis		93.855	5F30AI116106-02	34,401	

**Northwestern University**

Schedule of Expenditures of Federal Awards  
For the Year Ended August 31, 2016

Research Type/Federal Grantor/Subagency/Project Title	Pass-through ID	CFDA	Sponsor Award Number	FY16 Expense	Passed to Subrecipients
A novel mouse model to monitor inflammasome activation in vivo		93.855	5R21AI120618-02	258,523	
A surface-exposed region of the UL37 protein that is essential for alphaherpesvirus neuroinvasion		93.855	5F32AI116044-02	53,406	
Accessory Virulence Factors of Pseudomonas aeruginosa		93.855	1R01AI118257-01A1	311,794	
ACTG A5338 Committee Support	27	93.855	110229//UM1A1068636	8,537	
ACTG LOC Protocol A5320 Vice-Chair	27	93.855	110236 A5320//5UM1A1068636-10	1,274	
ACTG LOC Protocol Co-Chair for Protocol A5322	27	93.855	110229 A5322//5UM1A1068636-10	16,088	
ACTG Research Group DMC Committee Chair	27	93.855	110009//5UM1A1068636-09	23,362	
ACTG, Aids Clinical Trials Group - Berzins SASC Leadership Support	27	93.855	110007//5UM1A1068636-10	11,613	
Aging and Fracture Risk Among HIV-infected and HIV-uninfected Men	122	93.855	2001586404//R01AI093520	31,779	
AhR Activation in Th17 and Treg Cell Differentiation		93.855	5R01AI089954-05	9,627	
AIDS Clinical Trial Group Network Protocol Funds	27	93.855	Mod 1 //2UM1A1068636-08	244,664	
AIDS Clinical Trial Group Network Protocol Funds - Cost Reimbursement	27	93.855	111672//5UM1A1068636-09	177,586	
AIDS Clinical Trials Group - ARTS Chair Support	27	93.855	110009/5UM1A1068636-10	37,301	
AIDS Clinical Trials Group - Protocol Chair Support A5322	27	93.855	110237//5UM1A1068636-09	3,826	
AIDS Clinical Trials Group - Protocol Vice-Chair for Protocol A5273	27	93.855	110237//UM1A1068636 A5273	3,237	
AIDS Clinical Trials Group (ACTG) - WOW	27	93.855	114663//UM1A1068636	9,070	
AIDS Clinical Trials Group- Chair Support for Protocol A5316	27	93.855	110229//UM1A1068636	16,389	
Alloantigen Delivery Via ECDI-Fixed Cells for Tolerance to Monkey Islet Grafts	256	93.855	N002854801//5U01A1102463	202,631	
Alloantigen Delivery Via ECDI-Fixed Cells for Tolerance to Monkey Islet Grafts	256	93.855	N002854801//1U01A11202463-01	18,894	
ALPHA-HERPESVIRUS TRANSPORT IN AXONS		93.855	5R01AI056346-12	214,023	49,823
An 'omics' approach towards influenza A replication and pathogenesis	98	93.855	0254-3244-4609//4U19AI106754-04	37,939	
Anti IL5 and Churg Strauss Syndrome: a double blind, placebo controlled trial	155	93.855	6182014/5U01A1097073-03	41,075	
Anti IL5 and Churg Strauss Syndrome: a double blind, placebo controlled trial	155	93.855	20083504//4U01A1097073-04	1,300	
Anti-TSLP (AMG 157) plus antigen-specific immunotherapy for induction of tolerance in individuals with cat allergy CATNIP	21	93.855	FY14ITN011//1UM1A1109565-04	249,896	
Assembly and Function of the Gonococcal Pilus		93.855	1R56AI114821-01A1	177,477	
Bioresponsive Combination Microbicide Delivery System for HIV and HSV		93.855	7R33AI071971-06	120,301	77,075
Cervical/Vaginal Mucus and Microbicides		93.855	5R33AI094584-05	306,484	142,645
Chicago Clinical Trials Unit		93.855	UM1A1069471	1,258,737	453,792
Chicago WIHS Consortium V (WIHS-V)	92	93.855	50615-324-NWU2-AI034993//5U01AI034993	44,058	
Chicago Women's Interagency HIV Study (WIHS V)	92	93.855	50612-324-NWU1-AI034993//5U01AI034993	8,092	
Chicago Women's Interagency HIV Study (WIHS V)		93.855	50612-324-NWU1-AI034993	14,939	
Chronic Rhinosinusitis Integrative Studies Program (CRISP)		93.855	5U19AI106683-03	1,740,140	914,548
Chronic Rhinosinusitis Integrative Studies Program (CRISP)		93.855	4U19AI106683-04 REVISED	77,811	
Clinical Islet Transplantation at Northwestern		93.855	5U01AI089316-03	(212,982)	
Consortium of Eosinophilic Gastrointestinal Disease Researchers: OMEGA	42	93.855	Sub#135408//1U54AI117804-02	43,634	7,723
Continuation Funding for the Immune Tolerance Network [ITN030ST (A-WISH)]	21	93.855	FY16ITN048//5UM1A1109565-02	152	

**Northwestern University**

Schedule of Expenditures of Federal Awards  
For the Year Ended August 31, 2016

Research Type/Federal Grantor/Subagency/Project Title	Pass-through ID	CFDA	Sponsor Award Number	FY16 Expense	Passed to Subrecipients
Control of E1 oligomerization regulates E1 function in papillomavirus DNA replication	44	93.855	55890212//1R01AI114897-02	4,755	
CRISPR Cas Genes and Legionella Pneumophila Infection		93.855	5R21AI103451-02	72,102	
CTOT-11: Novel Therapies to Improve Renal and Cardiac Allograft Outcomes: Prevention of Cardiac Allograft Vasculopathy Using Rituximab (Rituxan) Therapy in Cardiac Transplantation	27	93.855	105087 // U01 AI063623	5,535	
Dengue Human Immunology Project Consortium (DHIPC)	98	93.855	0255-8633-4609//5U19AI118610-02	523,139	
Development of Immune-Modulated HIV Vaccines		93.855	1K22AI118421-01	52,717	
Development of Novel Anti-Biofilm Compounds for Treating Chronic Wounds	2	93.855	ASI//2R44AI092952-02A1	93,900	
Discovery and validation of avermectin resistance loci in free-living and parasitic nematodes		93.855	1R21AI121836-01A1	19,686	
DLL4 Regulation of T Cell Migration in EAE		93.855	5R01AI101378-03 REVISED	(415)	
Do Early Maternal Antibodies Facilitate Oral Transmission of HIV in Infants?	212	93.855	15-04442-003//5R01DE023049-06	241,968	
Drug at the Right Place & Concentration: Optimizing Combination Vaginal Ring PrEP	4	93.855	31097B//5U19AI103461-04	172,610	
Drug at the Right Place and Concentration: Optimizing Sustained PreP Agents	4	93.855	310841 Amd. 3//5U19AI-103461	72,811	
Drug at the Right Place and Concentration: Optimizing Sustained PreP Agents	4	93.855	310841//5U19AI103461-03	33,549	
Drug at the Right Place and Concentration: Optimizing Sustained PreP Agents	4	93.855	31097B Amd. 5//5U19AI-103461-4	126,204	
Drug at the Right Place and Concentration: Optimizing Sustained PreP Agents	4	93.855	31097B//5U19AI103461-05	52,680	
Early Events in Mucosal SIV Pathogenesis	216	93.855	1R01AI084793-01//TUL-HSC-161-09/1	(2,255)	
Effectiveness, Safety and Value of Integrating Molecular Diagnostics into the Post-Transplant Management of Kidney Transplant Recipients - The Next Frontier of Biomarker Research		93.855	1R34AI118493-01	144,629	35,385
Efficacy of Ustekinumab (Anti-IL_12/23) followed by Abatcept (CTLA4-Ig) for the treatment of Psoriasis Vulgaris	21	93.855	FY14ITN086//1UM1AI109565-03	32,221	
EoE Clinical Study 2: Consortium of Eosinophilic Gastrointestinal Disease Researchers	42	93.855	135409//1U54AI117804-02	45,869	
Ethical and Sociocultural Implications of Genetic Testing in Transplantation		93.855	1R03AI126090-01	13,875	
Expanding Small Molecule Functional Metagenomics through Shuttle BAC Expression in Aspergillus nidulans	112	93.855	AGMT 07/25/2014//2R44AI094885-02	111,582	
Function of Vibrio vulnificus MARTX Toxin During Early Gut Infection		93.855	5R01AI098369-04	36,121	
Function of Vibrio vulnificus MARTX toxin during early gut infection		93.855	4R01AI098369-05	106,708	
Genetics of Iron Acquisition by Legionella Pneumophila		93.855	5R01AI034937-19	118,491	
Genomics for Transplantation: Discovery and Biomarkers	193	93.855	5-23318// U19 AI063603	79,963	
Global innate immune responses to HIV-1 infection: Project 5	192	93.855	55648-12649-NWU//7P01AI090935-05	(481)	
Glucocorticoids and glucocorticoid receptor translational isoforms		93.855	5R21AI113935-02	167,091	
Group 1 CD1 in Infectious Disease and T Cell Development		93.855	5R01AI057460-11 REVISED	(7,742)	
Group 1 CD1-restricted Autoreactive T cells in Inflammatory Disease		93.855	1R21AI117238-01	197,078	

**Northwestern University**

Schedule of Expenditures of Federal Awards  
For the Year Ended August 31, 2016

Research Type/Federal Grantor/Subagency/Project Title	Pass-through ID	CFDA	Sponsor Award Number	FY16 Expense	Passed to Subrecipients
Harnessing MUC16-IgG Interactions to Enhance HIV Vaccine Function		93.855	1R01AI125171-01A1 REVISED	35,746	
HIV and Tuberculosis Transmission and Future Trends in the African Population	274	93.855	UWSC8429 / K01AI095060	2,829	
Host-Pathogen Interactions in a Failing Global lineage of MTBC:M.africanum	219	93.855	USTTB/NU/1R01AI1110386-02-2016	(4,239)	
How beta-catenin expands Foxp3+ROR&gamma;t+ Pro-inflammatory T-regulatory cells	234	93.855	FP054763-B//1R01AI108682	6,973	
Identification and Inference for Longitudinal Causal Mediation Analysis in HIV Research	89	93.855	114153-5086067//5R01AI104459-03	1,631	
Identification of the Initial Targets of Transmission		93.855	5R01AI094595-05 REVISED	746,470	391,914
Immune Monitoring and CNI Withdrawal in Low Risk Recipients of Kidney Transplantation (CTOT-09)	98	93.855	025513524609//2U01AI06359411	32,000	
Immune profiling and network modeling of Chikungunya infections	98	93.855	U255-8624-4609//1U19AI118610-10	93,510	
Immunology and Molecular Pathogenesis Training Program		93.855	5T32AI007476-19	264,661	
Immunosuppressive Drug Withdrawal from Liver Transplant Recipients on Tacrolimus versus Sirolimus	21	93.855	FY15ITN165//5UM1AI109565-02	6,458	
IMPAACT Network Leadership and Operations Center (LOC) Grant - CRS 4001 PF	14	93.855	915377-NU//PTCL102002438850/UM1AI068632	69,868	
Impact of CCR5 Blockade in HIV+ Kidney Transplant Recipients	231	93.855	9254sc//5U01AI118594-02	25,288	
Implementation strategies for a new point-of-care test for early infant diagnosis	122	93.855	2002785688//5R01AI116324-02	8,742	
Improving Food Allergy Management through an Electronic Physician Support Tool		93.855	5R21AI103433-02	40,440	27,860
Influenza virus receptors on human airway epithelial cells	193	93.855	5-52470-1R01AI114730-02	55,509	
Integrating Mechanistic Insights from Diverse Models to Prevent CMV Reactivation following Transplantation		93.855	5P01AI112522-02	2,082,349	134,241
Mechanisms of Gonococcal Pilin Antigenic and Phase Variation		93.855	5R37AI033493-22	91,918	
Mechanisms of Gonococcal Pilin Antigenic and Phase Variation		93.855	4R37AI033493-23	195,468	
Mechanisms of MCMV reactivation in immunodeficient transplant recipients		93.855	5R01AI112911-03	456,700	
Mechanistic Studies of Patatin-like Toxins		93.855	5R01AI053674-12	589,769	
Metabolic Heterogeneity and Antibiotic Susceptibility in Biofilms		93.855	5R01AI081983-05	68,325	43,431
Microbicide Delivery System to Target Lymphoid Organs	1	93.855	5R33AI082738//5R21AI082738-05-A2	(4,191)	
Modeling concurrent cytomegalovirus infection and transplantation tolerance		93.855	1R01AI114824-01A1	86,694	
Molecular Mechanism of V. Vulnificus MARTX Toxin in Pathogenesis and Food Safety		93.855	5R01AI092825-05	207,121	
Molecular Regulation of Systemic Inflammation		93.855	1R01AI120625-01A1	152,081	
Multicenter AIDS Cohort Study		93.855	5U01AI035039-24	2,991,850	363,565
Northwestern University Allergy Immunology Research Program		93.855	5T32AI083216-05	(50,522)	
Northwestern University Allergy Immunology Research Program		93.855	5T32AI083216-05	73,772	53,875
Northwestern University Allergy Immunology Research Program (NUAIR)		93.855	5T32AI083216-07	168,129	

**Northwestern University**

Schedule of Expenditures of Federal Awards  
For the Year Ended August 31, 2016

Research Type/Federal Grantor/Subagency/Project Title	Pass-through ID	CFDA	Sponsor Award Number	FY16 Expense	Passed to Subrecipients
Novel asthma pathogenesis genes in the mucosa of the human airways		93.855	5R21AI115055-02	200,158	
Novel long-acting microbicide and contraceptive intrauterine system	62	93.855	S140181-2//5R01AI112009-03	123,346	
NRSA Fellowship for A. DuMont in Support of Mechanism of Action of Stenotrophomonas maltophilia proteases		93.855	5F32AI114130-03	55,673	
Optimizing Clinical Use of Polymyxin B: Teaching an Old Drug to Treat Superbugs	285	93.855	WSU15102-A1//5R01AI119446	81,984	
Patient-Oriented Research on Hospital-Acquired Pathogens		93.855	5K24AI104831-03	77,237	8,657
Patient-Oriented Research on Hospital-Acquired Pathogens		93.855	4K24AI104831-04	13,711	
Pig-to-Monkey Islet Xenotransplantation	256	93.855	N004761502//1U01AI120130-02	35,106	
Pilot Study: Consortium of Eosinophilic Gastrointestinal Disease Researchers (CEGIR)	42	93.855	135407//1U54AI117804-02	17,657	
Point of Care Use Flu Drug Resistance Test	36	93.855	agmnt 12/18/10//R44AI082728	(93,753)	
Post Genome-Wide Association Study of Food Allergy	122	93.855	2001358062 // 5U01 AI090727-04	(1,449)	
Post-transcriptional regulation of Crp in Yersinia pestis		93.855	1R21AI111018-01A1	8,238	
Drug at the Right Place & Concentration: Optimizing Combination Vaginal Ring PrEP	4	93.855	310841//5U19AI103461-03	133,896	
Prevention of HIV transmission/acquisition through informed contraceptive choice (ADMINISTRATIVE SUPPLEMENT)	132	93.855	16-17-103//R01AI110373	42,740	
Prevention of HIV Transmission/acquistion through informed contraceptive choice	132	93.855	14-17-107//R01AI110373	8,861	
Probing the Functions of KLF2 Downregulation		93.855	1R21AI119137-01A1	41,782	
Project 3: An 'omics' approach towards influenza A replication and pathogenesis	98	93.855	0254-3243-4609//5U19AI106754-03	387,729	
Prospective Observational Evaluation of the Association between the Day 2 Vancomycin Exposure and Failure Rates among Adult Hospitalized Patients with MRSA Bloodstream Infections (PROVIDE)	61	93.855	UM1AI104681	9,366	6,000
Proteogenomics for Organ Transplantation: Prediction, Diagnosis, Intervention		93.855	5U01AI084146-05 REVISED	756,964	391,533
Proteomic Predictors of Chronic Kidney Disease in Liver Transplant Recipients		93.855	5R21AI113916-02	99,906	
"Protocol ITN056ST: Evaluation of Donor Specific Immune Senescence and Exhaustion as Biomarkers of Operational Tolerance Following Liver Transplantation in Adults"	21	93.855	FY16ITN158//5UM1AI109565-03	148,325	
Regulation of Allergic Inflammation by Histamine		93.855	5R01AI076456-08	360,052	
Regulation of Allergic Inflammation by Histamine		93.855	4R01AI076456-09	114,657	
Regulation of cytosolic pattern recognition receptor signaling in macrophages		93.855	5R01AI099009-02	109,758	
Regulation of cytosolic pattern recognition receptor signaling in macrophages		93.855	4R01AI099009-04	206,085	
Regulation of food allergy and anaphylaxis by IL 33		93.855	5R01AI105839-03	334,500	
Role of CTCF in HPV replication and viral DNA looping		93.855	5R21AI120492-02	157,117	

**Northwestern University**

Schedule of Expenditures of Federal Awards  
For the Year Ended August 31, 2016

Research Type/Federal Grantor/Subagency/Project Title	Pass-through ID	CFDA	Sponsor Award Number	FY16 Expense	Passed to Subrecipients
Role of the Plasminogen Activator Protease During Pneumonic Plague		93.855	5R01AI093727-05	161,721	
Role of Thymic Stromal Lymphopoietin in Chronic Rhinosinusitis		93.855	5R01AI104733-03	465,181	
S. aureus and Regulatory T cells in the Failure of Oral Tolerance		93.855	5K23AI100995-03	152,273	127,575
S. aureus and Regulatory T cells in the Failure of Oral Tolerance		93.855	4K23AI100995-04	6,948	
SIV Transmission in Male NHP	225	93.855	201015485-01 Amend #5//R01AI094620	64,425	
Small, noncoding RNAs and the evolution of Yersinia pestis virulence		93.855	5R21AI103658-02	44,046	
Structural and Functional Studies of gp42 and HLA Class 2 in EBV Entry		93.855	5R01AI076183-13	424,953	281,266
Structural and Functional Studies of gp42 and HLA Class 2 in EBV Entry		93.855	4R01AI076183-14	78,569	
Structure and Function of EBV Protein Complexes that Trigger Epithelial Cell Entry	202	93.855	61048128-117572//1R21AI119480-02	36,405	
SubProject* Mechanisms of B Cell Responses in Autoimmune Disease: D14-AUC02-NWU	61	93.855	203-4117//5U19AI056363-10REV	54,101	
Sustained Long Acting Prevention Against HIV Program Operation		93.855	5UM1AI120184-02 REVISED	2,561,933	1,052,904
Targeting Siglec-8/-F to treat eosinophil and mast cell related disorders		93.855	5R01AI072265-09	176,193	
Targeting Siglec-8/-F to Treat Eosinophil and Mast Cell Related Disorders		93.855	4R01AI072265-10	272,012	
The HIV Care Continuum Among Recent Offenders	107	93.855	IN4689683NW//5R01AI114435-02	4,335	
The Outer Surface of Vibrio cholerae	268	93.855	UTA13-001016//R01AI076322	(11,609)	
The Pathogenesis of Kawasaki Disease		93.855	2R56AI106030-13A1	75,170	56,717
The regulation and function of CD1d-restricted T cells		93.855	5R01AI043407-17	271,646	
The Role of Group 1 CD1-restricted T Cells in Infectious Disease		93.855	2R56AI057460-12	195,483	19,410
The Role of Group 1 CD1-restricted T Cells in Infectious Disease		93.855	2R01AI057460-12A1	174,671	
The Role of MHC Class Ib in T Cell Development and Infectious Disease		93.855	5R01AI040310-18	151,380	
The Role of MHC class Ib in T cell development and infectious disease		93.855	4R01AI040310-19	194,330	
The roles of Sirt1, a deacetylase, in immune tolerance and autoimmunity		93.855	5R01AI079056-07	142,313	
The roles of Sirt1, a deacetylase, in immune tolerance and autoimmunity		93.855	4R01AI079056-08	271,126	
The roles of Synoviolin in immune tolerance and autoimmunity		93.855	5R01AI108634-03	318,937	
The Structure and Function of the Influenza Virus Genome		93.855	5R01AI020201-31	111,850	
The Structure and Function of the Influenza Virus Genome		93.855	4R01AI020201-33	189,359	
Third Coast Center for AIDS Research		93.855	5P30AI117943-02	1,459,745	370,628
Tomotherapy and Hematopoietic Cells for Tolerance to Kidney Transplants	275	93.855	623K976//U01AI102456	7,039	
Translational Control of Gene Expression during Poxvirus Infection		93.855	7R21AI105330-02 REVISED	103,038	
Translational Research Training in Infectious Diseases		93.855	5T32AI095207-04	108,512	
Translational Research Training in Infectious Diseases		93.855	4T32AI095207-05 REVISED	18,769	
Type II Secretion and Legionella pneumophila Infection		93.855	5R01AI043987-18	323,124	
Unconventional APC Inducing Autoimmune Th17 Cell Expansion in Lupus		93.855	5R01AI041985-33	(83)	
UTI Immune Modulation by LPS Structure		93.855	5F31AI106357-03 REVISED	17,395	
UTI Immune Modulation by LPS Structure		93.855	4F31AI106357-04 REVISED	23,449	
Validating Targets in P. Aeruginosa Type III Secretion Using Chemical Probes	147	93.855	Agmt Signed 3/25/14 // 5R01AI099269	69,644	

**Northwestern University**

Schedule of Expenditures of Federal Awards  
For the Year Ended August 31, 2016

Research Type/Federal Grantor/Subagency/Project Title	Pass-through ID	CFDA	Sponsor Award Number	FY16 Expense	Passed to Subrecipients
Virulence Mechanisms of the Emerging Pathogen <i>Stenotrophomonas maltophilia</i>		93.855	5R21AI117082-02	234,776	
Virulence-Associated Accessory Genomic Elements of <i>Pseudomonas aeruginosa</i>		93.855	5F32AI108247-02	(333)	
Women's Interagency HIV Study	92	93.855	50612-324-NWU2-AI034993//5U01AI034993	20,373	
				<b>29,013,919</b>	<b>5,010,567</b>
Regulation of Bacterial Aggregation During Host Colonization		93.856	1R21AI117262-01A1	<b>49,491</b>	
Mechanisms of Kinesin Self-Regulation		93.859	5R01GM072656-09	76,940	
Regulation of Microtubule Motors		93.859	5R01GM052111-16	852	
2 P01 Gm 067166-06A1 Subproject: Structural Biology of Copper Homeostasis	122	93.859	2000995734/3 // 5 P01 GM067166-09	(1,823)	
A Computational Biology Approach to Mapping Nucleosomes in Stem Cells		93.859	5R01GM107177-03	338,285	
Activation Mechanisms of Store-Operated Calcium Channels		93.859	5R01GM114210-02	242,741	
Activities of nucleoprotein complexes visualized in single-molecule experiments		93.859	cont5R01GM105847-03	189,535	
Activities of Nucleoprotein Complexes Visualized in Single-Molecule Experiments		93.859	4R01GM105847-04	65,957	
Analysis of Novel Virus-Induced RNAs		93.859	5R01GM111652-02	368,031	
Assembly and epigenetic inheritance of the human centromere		93.859	5R01GM111907-03	300,132	87,959
Biosynthetic and Biomimetic Investigations into Roseophilin		93.859	1F31GM119368-01	18,046	
Biotechnology Predoctoral Training Program		93.859	5T32GM008449-23	326,089	
Capturing Transient Protein Structures on Multiple Spatial and Temporal Scales		93.859	5R01GM115761-02	290,960	
Carbene Catalysis Strategies for Organic Synthesis		93.859	5R01GM073072-09	654	
Carbene Catalysis Strategies for Organic Synthesis		93.859	5R01GM073072-11	384,711	55,708
Career Decision-Making of Future Minority Biomedical Science Faculty		93.859	5R01GM085385-08	417,655	41,193
Cellular and Molecular Basis of Disease Training Program		93.859	5T32GM008061-33	701,235	
Cellular and Molecular Basis of Disease Training Program		93.859	4T32GM008061-34	76,172	
Characterization of pmoD		93.859	1F32GM119191-01	8,241	
Characterization of the antiviral and nuclear regulatory functions of FEZ1 & NEK1		93.859	5R01GM101975-05S1	250,252	
Chemistry of Life Processes Predoctoral Training Program		93.859	5T32GM105538-03	238,584	
Chemistry of Life Processes Predoctoral Training Program		93.859	4T32GM105538-04	33,274	
Chromatin Modifications by Histone Ubiquitination and Methylations		93.859	5R01GM069905-14	458,512	
Coboglobins-Cobalt-Substituted Hemoglobins and Myoglobin		93.859	5R01GM111097-44	610,247	
Control and Function of Ndr/LATS Signaling Systems		93.859	5R01GM084223-08	286,367	
Copper Acquisition by Methanotrophs.		93.859	5F32GM110934-03	54,661	
Cryo Ptychography Combined with X-Ray Fluorescence Analysis of Metals in Cells		93.859	5R01GM104530-03	113,027	
Cryo Ptychography Combined With X-Ray Fluorescence Analysis of Metals in Cells		93.859	4R01GM104530-04 REVISED	114,625	
Defining the molecular and cellular mechanism of epigenetic transcriptional memory		93.859	1R01GM118712-01	5,234	
Design, Synthesis, and Biology of Inhibitors of Neuronal Nitric Oxide Synthase		93.859	5F32GM109667-02	32,725	
Development of dictyBase, an online informatics resource		93.859	5R01GM064426-14	428,880	
Developmental Dynamics of Ciliated Epithelia		93.859	5R01GM089970-07	332,789	

**Northwestern University**

Schedule of Expenditures of Federal Awards  
For the Year Ended August 31, 2016

Research Type/Federal Grantor/Subagency/Project Title	Pass-through ID	CFDA	Sponsor Award Number	FY16 Expense	Passed to Subrecipients
Direct Determination of the Distribution of Fitness Effects of Spontaneous Mutations in <i>Caenorhabditis Elegans</i>	240	93.859	UFDSP00010414//R01GM107227-02	143,833	
Dissecting chromatin and lamin contributions to nuclear structure and function		93.859	1F32GM112422-01A1	25,172	
DNA zip codes and the spatial organization of the yeast genome		93.859	5R01GM080484-08	66,625	
DNA zip codes and the spatial organization of the yeast genome		93.859	4R01GM080484-09	157,377	
Eukaryotic Post-Translational Modifications		93.859	5R01GM067193-12	246,115	
Excitability in Dictyostelium Development		93.859	5K25GM098875-06	94,057	
Exploration of Novel Silyl Derived d1 Synthons Equivalents		93.859	5F31GM116532-02	37,340	
Functional Characterization of the P1B-5ATPase Hemerythrin-like and Metal-Binding		93.859	5F32GM105339-03	47,647	
Global Characterization of Protein Palmitoylation in Trypanosomes		93.859	5R01GM102689-03	248,562	45,400
Global Characterization of Protein Palmitoylation in Trypanosomes		93.859	4R01GM102689-04	85,317	
High Throughput Screening for Small-molecules Facilitating Prion Study		93.859	5R01GM110045-03	209,371	
Identifying Microenvironment Regulators that Control Stem Cell Behavior		93.859	1F32GM108395-01A1	4,098	
Information Processing by Post-Translational Modification	89	93.859	152213.5081815.0003//5R01GM105375-02	61,273	
Innate and Adaptive Immunity in Childhood Epilepsy	67	93.859	T547071//7R01NS073768-06	35,418	
Integrated Empirical and Translational Research to Diversify the Scientific Workforce		93.859	1R35GM118184-01	51,457	6,042
Integrative informatics approach to develop safe glucocorticoid therapies		93.859	5R01GM112945-02S1	413,724	162,720
International Population Study on Macronutrients and BP - INTERMAP		93.859	R01HL050490	221,375	147,907
Investigating The Functional Role Of Zinc Fluxes During Sperm Activation		93.859	1F31GM117971-01 REVISED	20,070	
Investigation into the Dynamic Zn Proteome during Mammalian Oocyte Maturation		93.859	5F32GM115052-02	49,925	
Mass Spectrometric Studies of Thiotemplate Biosynthesis		93.859	5R01GM067725-12	(2,751)	
Measuring signaling pathway dynamics during tissue growth in hydrogels	255	93.859	5R01GM097220-05	45,395	
Mechanism of Nuclear Signaling and cell-cell adhesion by catenins		93.859	5R01GM076561-09S1	334,619	
Mechanisms of hnRNPM in Alternative Splicing Regulation During EMT		93.859	5R01GM110146-03 REVISED	233,481	
Medical Scientist Training Program		93.859	5T32GM008152-29	1,098,163	
MEDICAL SCIENTIST TRAINING PROGRAM		93.859	4T32GM008152-30	113,500	
Mentoring for Success: Developing Fundamental Skills for Biomedical Research		93.859	5R25GM079300-09	282,124	
Mentoring for Success: Developing Fundamental Skills for Biomedical Research		93.859	2R25GM079300-10	216,780	
Metalloenzymes and metal homeostasis		93.859	1R35GM118035-01	162,587	
Metalloregulation by MerR and Fur Protein Families		93.859	5R01GM038784-27	379,585	
MicroRNA Regulation of Biological Mechanisms		93.859	2R01GM077581-09A1	203,465	
Microtubule motors and generation of cell polarity		93.859	5R01GM052111-18	471,181	
Modeling scientific workforce dynamics using social network analysis	89	93.859	152451.5080936.0202//5U01GM112623-02	170,178	
Molecular Biophysics Training Grant		93.859	5T32GM008382-23	240,279	
Molecular Biophysics Training Program at Northwestern University		93.859	2T32GM008382-24	22,920	

**Northwestern University**

Schedule of Expenditures of Federal Awards  
For the Year Ended August 31, 2016

Research Type/Federal Grantor/Subagency/Project Title	Pass-through ID	CFDA	Sponsor Award Number	FY16 Expense	Passed to Subrecipients
Molecular Mechanisms of Basolateral Targeting in Polarized Epithelial Cells		93.859	5R01GM070736-11	279,538	
National Infrastructure for Standardized and Portable EHR Phenotyping Algorithms	140	93.859	64073742//5R01GM105688-03	4,656	
National Infrastructure for Standardized and Portable EHR Phenotyping Algorithms	121	93.859	16081299-03//R01GM105688-04	113,559	
National Resource for Translational and Developmental Proteomics		93.859	5P41GM108569-02	1,939,015	62,500
Neural Crest Ontogeny and the Control of Stem Cell Attributes		93.859	5R01GM116538-02	351,595	
Non-coding RNAs and their mechanisms and functions		93.859	1R35GM118144-01	137,671	
Nuclear Organization Aberrations Underlying Systemic Lupus Erythematosus		93.859	5F32GM115046-02	55,277	
Orthogonal Ubiquitin Transfer to Profile E3 Substrate Specificity	83	93.859	SP00011584-01//5R01GM104498-04	128,135	
Particulate methane monooxygenase		93.859	5R01GM070473-11	395,564	
Pharmacological Inhibitors of Nedd4 ubiquitin ligase as anticancer therapeutics		93.859	5R01GM115632-02	307,048	
Predictive Modeling of Collective Swimming in Bacterial Suspensions	173	93.859	4674-NU-DHHS-4978//5R01GM104978-03	(1,567)	(1,567)
Molecular Mechanisms of Gene Silencing by RNAi		93.859	5R01GM068743-12	4,022	
Probing Cellular Membrane Processes by Single Particle Orientation and Rotational Tracking	83	93.859	SP00012129-01//1R01GM115763-01	70,670	
Regulation and Function of Intermediate Filaments in Cell Mechanics		93.859	5P01GM096971-05	1,395,375	841,606
Regulation of SoxE Function During Neural Crest Formation		93.859	5R01GM077288-04	16,220	
Regulatory Roles of Zinc Fluxes in Metalloprotein Occupancy and Cell Cycle Progression		93.859	5R01GM115848-02	355,597	
Selective Inhibition of Neuronal Nitric Oxide Synthase		93.859	5R01GM049725-19	26,681	26,227
Selective inhibition of nitric oxide synthase for multiple indications		93.859	2R01GM049725-21	366,124	56,411
Src kinase phosphoregulation of the human mitotic kinesin, Eg5		93.859	5R01GM107209-03	237,050	86,380
Src kinase phosphoregulation of the human mitotic kinesin, Eg5		93.859	4R01GM107209-04	53,013	
Structural Biology of Membrane Scaffolds		93.859	5R01GM094479-04	(9,086)	
Structural mechanism of membrane remodeling during herpesvirus nuclear egress	215	93.859	Amend 1 FE 3/27/2015/R01GM111795//R01GM111795	41,483	
Structural Mechanisms in Semaphorin Signaling		93.859	5R01GM098259-04	93,808	
Structural Studies of a Spectrin/Ankyrin Complex		93.859	5R01GM057692-15	216	
Structural Studies of RNase P		93.859	5R01GM058443-16	205,932	
Structural Studies of Type I Topoisomerases		93.859	5R01GM051350-19 REVISED	59,165	
Structure and Function of the Trypanosome Flagellar Membrane		93.859	5R01GM093359-09	37,992	
Structure and Specificity in Metal Ion Homeostasis		93.859	5R01GM058518-17	257,356	
Super-resolution microscopy of nuclear lamin and spindle envelope/matrix function	31	93.859	5-10490-01//R01GM106023	62,447	
Super-resolution microscopy of nuclear lamin and spindle envelope/matrix function	31	93.859	5-10490-01//5R01GM106023-4	40,262	
Tailoring liposomal spherical nucleic acid nanoparticles for biological and therapeutic potency		93.859	1F31GM119392-01	13,151	
Targets for Design of Drug Combinations that Select against Antibiotic Resistance		93.859	5R01GM113238-03	282,479	189,722

**Northwestern University**

Schedule of Expenditures of Federal Awards  
For the Year Ended August 31, 2016

Research Type/Federal Grantor/Subagency/Project Title	Pass-through ID	CFDA	Sponsor Award Number	FY16 Expense	Passed to Subrecipients
The Academy for Future Science Faculty Diversity through Theory Driven Coaching		93.859	5R01GM107701-03	348,513	
The Dictyostelium Stock Center		93.859	5R01GM087371-07	228,283	
The Endocrine Society Minority Access Program Evaluation	68	93.859	Agmt dated 04/08/2014	16,145	
The Impact of Public Reporting on Clinical Outcomes and Quality Improvement		93.859	5F32GM113513-02 REVISED	47,724	
The role of innate immunity in the traumatic brain injury-induced immune suppression syndrome		93.859	5K08GM117341-02	141,405	
The role of the microtubule regulators Kif4 and EB1 in HIV-1 infection - Project 2	45	93.859	GG010108-05//5P01GM105536-02	582,052	
The Structure and Function of Perinucleolar Compartment		93.859	5R01GM078555-08	160,914	
Tissue morphogenesis: A study of molecular machines and cell mechanics		93.859	5R01GM098077-03	256,151	131,251
Tissue morphogenesis: A study of molecular machines and cell mechanics		93.859	4R01GM098077-04	69,268	
Tube size control by Src and Yorkie/YAP		93.859	5R01GM108964-03 REVISED	254,392	
Virus Imaging Core P50 GM082545 CHEETAH	272	93.859	10027535-02//P50GM082545-A1	263,542	
Virus Imaging Core P50 GM082545 CHEETAH	272	93.859	10027535-02//5P50GM082545-10	22,248	
Why Do Research Prizes Have Effects on Minorities' Biomedical Research Careers?		93.859	5R01GM098568-03	318,840	2,065
Zinc Regulation of Germline and Embryo Development in Caenorhabditis elegans		93.859	5F31GM112478-03	42,204	
				<b>23,025,981</b>	<b>1,941,524</b>
The Inflammatory Response Pathway in the Etiology of Polycystic Ovary Syndrome		93.864	R01HD057450	<b>5,891</b>	
A Cognitive Test Battery for Intellectual Disabilities	225	93.865	201402548-02/R01HD076189	95,701	
A Preschool Biomarker for Literacy		93.865	5R01HD069414-04	244,389	
A preschool biomarker for literacy		93.865	4R01HD069414-05	134,454	
A Randomized Study to Abate Truancy and Violence in Grades 3-9		93.865	5R01HD067500-06 REVISED	158,653	82,204
Altering Activation Patterns in the Distal Upper Extremity After Stroke	180	93.865	CC# 81370 CL3437//R01HD075813	28,871	
Application of Targeted Reinnervation for People with Transradial Amputation	180	93.865	CC# 81930 CL4098//1R01HD081525-02	6,994	
Building Bridges, Breaking Barriers: An Academic-Community Partnership to Address Disparities in Uterine Fibroids		93.865	5R13HD085936-02	18,084	
Career Development in Women's Health (CDWH)		93.865	5K12HD055884-09	446,687	92,240
Career Development in Women's Health (CDWH)		93.865	4K12HD055884-10	28,529	
Center for Reproductive Health After Disease		93.865	4P50HD076188-04	648,027	4,749
Center for Reproductive Research after Disease		93.865	5P50HD076188-03	1,046,262	246,004
Characterizing the Epigenetic GATA Switch in Endometriosis		93.865	5R03HD082558-02	76,060	
Cloning Genes that Cause Mental Retardation	86	93.865	AGMT 02/25/15//R01HD039331	2,640	
Cognitive Architecture of Bilingual Language Processing		93.865	5R01HD059858-05	162,595	
Constraint induced movement therapy for walking in individuals post stroke	180	93.865	CC# 81388 CL4442//1R01HD082216-01A1	8,194	
Cortical Priming to Optimize Gait Rehabilitation Post Stroke	243	93.865	2013-03653-01-02KN//R01HD075777	35,388	

**Northwestern University**

Schedule of Expenditures of Federal Awards  
For the Year Ended August 31, 2016

Research Type/Federal Grantor/Subagency/Project Title	Pass-through ID	CFDA	Sponsor Award Number	FY16 Expense	Passed to Subrecipients
Cortisol, Socioeconomic Status, and Genetic Influences on Cognitive Development	268	93.865	UTA16-000087 // 1R01HD083613-01A1	53,863	
Deubiquitinating Enzymes as Targets for Male Contraception	14	93.865	901501-NU Amd 01//5U01HD084046-02	87,010	
Development of a serum biosignature for ectopic pregnancy	262	93.865	564595/10041227/9135/01	86,868	
Effect of a patient-centered decision app on TOLAC: An RCT	231	93.865	8231sc//1R01HD078748	196,262	
Effect of Injury Severity and Location on Spasms Post SCI		93.865	1K01HD084672-02	124,463	
Effect of Neural Constraints on Movement in Stroke		93.865	5R01HD039343-13	232,417	
Effect of Neural Constraints on Movement in Stroke		93.865	4R01HD039343-14	55,420	
Endometriosis and Retinoids		93.865	R37HD038691	639	
Endometriosis and Retinoids		93.865	4R37HD038691-17	461,974	
Engineering Career Development Center in Movement and Rehabilitation Sciences		93.865	5K12HD073945-04	785,308	641,841
Engineering Career Development Center in Movement and Rehabilitation Sciences		93.865	4K12HD073945-05	65,248	10,980
Genes, Androgens and Intrauterine Environment in PCOS		93.865	2P50HD044405-13	1,223,848	142,401
Genes, Androgens and Intrauterine Environment in PCOS		93.865	4P50HD044405-15	104,024	
Hormonal Signals that Regulate Ovarian Differentiation		93.865	5P01HD021921-25	76,249	
Improving Mobility for Bilateral Transfemoral Amputees with Coordinated Robotic Prostheses	277	93.865	2404-017266//1R21HD076124-02	14,216	
Intensive Rehabilitation Research Grant Writing Workshops in the United States	144	93.865	MUSC14-024//T15HD074546	11,084	
INTER-CAMBIO: Community-Academic Meetings to Bridge Initiatives in Obesity		93.865	5R13HD075494-03	47,416	12,862
Intimate Partner Violence in Sexual Minority Female Adolescents and Young Adults	236	93.865	010314-002//1R01HD08	14,431	
Linking language and cognition in infancy: Entry points and developmental change		93.865	5R01HD083310-02	262,130	
Manipulating cGMP Pathway to Impact Vascular Development in Neonatal BPD and ROP		93.865	5R21HD077336-02	176,522	12,721
Maternal-Fetal Medicine Units Network -- The Northwestern Study Center		93.865	2UG1HD040512-17	91,912	
Meeting Gestational Weight Gain Guidelines: Development of a Group Intervention During Pregnancy for Low-Income					
Racial/Ethnic Minority Obese Women and Their Providers		93.865	5K23HD076010-04	106,270	
MFMU Network Capitation Agreement	80	93.865	Agmt 4/25/14//U10HD036801	584,681	150,974
Motor impairment related changes in muscles properties in chronic stroke		93.865	5R01HD084009-02	577,733	87,174
Motor Learning in a Customized Body-Machine Interface for Persons with Paralysis	180	93.865	CC#81750//R01HD072080	67,171	
Motor Learning in a Customized Body-Machine Interface for Persons with Paralysis	180	93.865	CC#81750//R01HD072080	70,365	
Neuromuscular Mechanisms Underlying Poor Recovery from Whiplash Injuries		93.865	5R01HD079076-03	446,382	39,674
NICHD Maternal Fetal Medicine Units Network		93.865	5U10HD040512-16	194,575	41,443
NRSA F32 for Daniel John Stieh in support of: Analysis of HIV acquisition via the ovary		93.865	5F32HD080540-03	57,415	
Oncofertility Consortium Annual Conference		93.865	5R13HD063248-06	28,910	

**Northwestern University**

Schedule of Expenditures of Federal Awards  
For the Year Ended August 31, 2016

Research Type/Federal Grantor/Subagency/Project Title	Pass-through ID	CFDA	Sponsor Award Number	FY16 Expense	Passed to Subrecipients
Optimizing Medication Management for Mothers with Depression during Pregnancy (OPTI-MOM)		93.865	5U54HD085601-02	430,404	51,991
Pathophysiology and Rehabilitation of Neural Dysfunction		93.865	5T32HD007418-24	169,112	
Pathophysiology and Rehabilitation of Neural Dysfunction		93.865	4T32HD007418-25	67,330	
Pathways Linking Social Disparities, Inflammation, and Health Across Generations		93.865	1R01HD074765-01A1	152,224	109,209
Pharmacologic strategies to use the levonorgestrel implant in HIV-infected women	259	93.865	34-2009-2031-001//R01HD085887	26,977	
Phonetic echoes of cognitive disruptions in speech production		93.865	5R21HD077140-02	201,771	35,447
Prenatal Cytogenetic Diagnosis by Array-based Copy Number Analysis	45	93.865	10 (GG006961-04)//5U01HD055651-07	(2,342)	
Probing Mediator 12 function in uterine fibroids		93.865	5R21HD082781-02	186,462	
Prognostic Biomarkers to Predict Progression of Pediatric Chronic Kidney Disease	14	93.865	901484-NU/5R01HD074596-02	7,149	
Promoting Safe Use of Pediatric Liquid Medications: A Health Literacy Approach	158	93.865	12-00512//5R01HD070864-04	96,497	22,843
Regulation of NOD-like receptors in juvenile influenza A virus infection	272	93.865	10034012-CHIC//K12HD047349	55,716	51,030
Research Career Development in Obstetrics and Gynecology		93.865	5K12HD050121-09	(54,552)	
Research Career Development in Obstetrics and Gynecology		93.865	5K12HD050121-12	332,086	
Role of MicroRNA-29 in Uterine Leiomyoma Pathogenesis		93.865	1R21HD077479-02	59,505	
Rural African American Young Adults' Pathways to Psychosocial and Physical Health	241	93.865	RR376-410/4708620//2R01HD030588	69,317	
Self-regulation as a Health-Protective Factor in Adverse Socioeconomic Conditions		93.865	5F32HD078048-02 REVI	33,906	
Sensorimotor Adaptation During Powered Prosthesis Control Conditions		93.865	5F31HD080335-02	5,034	
Statistical Learning, Memory Systems, and Sleep-Based Memory Consolidation		93.865	5F32HD078223-02	49,837	
Targeted problem reactivation and incubation during slow-wave sleep		93.865	1R03HD087111-01	20,666	
The Effect of Wrist Motion on Pattern-Recognition-Based Myoelectric Control		93.865	5F31HD078092-02	14,732	
The Effect of Wrist Motion on Pattern-Recognition-Based Myoelectric Control		93.865	4F31HD078092-03 REVISED	30,469	
The Reproductive Window in Young Adult Cancer Survivors	230	93.865	55368070 // R01HD080952	22,237	
Training in the Neurobiology of Movement and Rehabilitation Sciences		93.865	5T32HD057845-05	69,795	
UBR7 is a novel chromatin directed E3 ubiquitin ligase		93.865	7R21HD078946-02	128,507	
Uterine Leiomyoma Development in Mouse Models	146	93.865	5R01HD072489-03//RC103124NU	13,310	
Uterine Leiomyoma Research Center Program		93.865	2P01HD057877-06A1	1,089,426	115,581
Young Men's Health and the Transition to Fatherhood		93.865	5K23HD060664-05	103,436	81,000
				<b>12,825,345</b>	<b>2,032,368</b>
A novel, nanoparticle-based molecular MRI probe for early Alzheimer's diagnostics		93.866	5R21AG045637-02	91,077	
A Universal Medication Schedule to Promote Adherence to Complex Drug Regimens		93.866	5R01AG046352-02	395,560	110,346

**Northwestern University**

Schedule of Expenditures of Federal Awards  
For the Year Ended August 31, 2016

Research Type/Federal Grantor/Subagency/Project Title	Pass-through ID	CFDA	Sponsor Award Number	FY16 Expense	Passed to Subrecipients
Alterations of Sleep and Circadian Timing in Aging: Administrative Core	234	93.866	39915/A6//P01AG011412	(8,433)	
Alzheimer's Disease Core Center		93.866	5P30AG013854-20	1,078,866	
Alzheimer's Disease Core Center		93.866	2P30AG013854-21	163,376	
Alzheimer's Disease Neuroimaging Initiative - 2 (ADNI-2)	230	93.866	67-ADNI-2//U01 AG24904	90,500	
Alzheimer's Disease Neuroimaging Initiative 2 (ADNI2)	266	93.866	WE1929//5U01AG024904-10	10,507	
Anti-Amyloid Treatment in Asymptomatic Alzheimer's Disease (Study A4)	230	93.866	45893177//2U19AG010483-22	17,583	
BACE1 as a Therapeutic Target for Alzheimer's Disease		93.866	5R01AG022560-13	213,375	
BACE1 as a Therapeutic Target for Alzheimer's Disease		93.866	4R01AG022560-14	60,853	
Breaking the Cycle of Poverty Among Seniors and Their Family Caregivers		93.866	R03AG040690	5,469	
C. elegans Model for Neurodegenerative Diseases of Aging		93.866	5R37AG026647-12	640,146	
Cell aging and vimentin glycation: Effects on the cytoskeleton and cell mechanics		93.866	5R21AG049218-02	138,435	
COCOA to improve walking performance in Peripheral Artery Disease: the COCOA-PAD Study		93.866	1R21AG050897-01A1	8,424	
Community-Generated Palliative Care Telemedicine for Rural Black and White Elders	265	93.866	15-2746//R21AG046772	16,719	
Comparative Effectiveness of Customary F&S vs Fit and Strong Plus	243	93.866	2011-06769-01-02 / R01AG039374	8,172	
Comparative Effectiveness of Customary F&S vs Fit and Strong Plus	243	93.866	7950//4R01AG039374-05	8,172	
Developing a Longitudinal Resource for Genetic Research in Behavioral and Health Sciences	275	93.866	636K694//1R01AG041868-01A1	121,866	
Disordered Proteostasis as a Driver of Disease in the Aging Lung		93.866	5P01AG049665-02	2,213,846	462,070
Epidemiology of Psychological Distress in a Chinese Aging Population	187	93.866	5R01AG042318-02//5R01AG042318	14,582	
Exceptional Cognitive Aging: Neuropsychologic, Anatomic and Pathologic Correlates		93.866	5R01AG045571-03	570,882	
Fellowship for J. Pitt in Support of Astrocytic regulation of pallidal function in a mouse model of Parkinsons disease		93.866	1F32AG047782-01	120	
High-Dimensional Movement Analysis as a Diagnostic Tool in C. elegans		93.866	5F31AG045017-02	2,587	
Hospital Discharge and Cognitive Changes in Older Adults		93.866	5R21AG042640-02	(309)	
Integrative Analysis of Longitudinal Studies of Aging	171	93.866	9008468_NU//P01AG043362	141,403	
Integrative Analysis of Longitudinal Studies of Aging	171	93.866	908468_NU//4P01AG043362-04	128,261	
Integrative Pathways to Health and Illness	275	93.866	618K166//P01AG020166	28,688	
LitCog II: Health Literacy and Cognitive Function		93.866	5R01AG030611-08	264,115	29,977
LitCog III: Health Literacy and Cognitive Function among Older Adults		93.866	2R01AG030611-09A1	143,485	
Living Well With Later Life Multimorbidity: A Biopsychosocial Approach	176	93.866	4102-56030//1R01AG041750-01A1	10,638	
Living Well With Later Life Multimorbidity: A Biopsychosocial Approach	176	93.866	4102-56030//1R01AG041750-01A1	3,565	
Longitudinal Evaluation of Amyloid Risk and Neurodegeneration - the LEARN Study. A companion study to Anti-Amyloid Treatment in Asymptomatic Alzheimer's Disease (A4) Trial	230	93.866	59504835//5U19AG010483-24	17,492	

**Northwestern University**

Schedule of Expenditures of Federal Awards  
For the Year Ended August 31, 2016

Research Type/Federal Grantor/Subagency/Project Title	Pass-through ID	CFDA	Sponsor Award Number	FY16 Expense	Passed to Subrecipients
Mechanisms of Aging and Dementia Training Program		93.866	5T32AG020506-14	323,579	
Mechanisms Regulating Tau Alternative Pre-mRNA Splicing		93.866	5R01AG033004-05	182,926	
Molecular Neuropathology and Mechanisms of BACE1 Elevation in Alzheimer's Disease		93.866	5R01AG030142-07	418,491	
Multidimensional Pathways to Healthy Aging Among Filipino Women	260	93.866	5-31773 Amd. 4//5R01AG039443-04	113,007	
National Alzheimer's Coordinating Center	274	93.866	UWSC7728//5U01AG016976-18	30,318	
National Health Literacy Mapping to Inform Healthcare Policy	260	93.866	Amend 1/5050165/5R01AG046267-03	19,264	
Noninvasive Stimulation to Improve Hippocampal-Dependent Memory in Older Adults		93.866	5R01AG049002-02	395,674	
Non-Invasive Treatment of Abdominal Aortic Aneurysm Clinical Trial (N-TA3CT)	259	93.866	36-5360-2141-001//R01AG037120-03	38,664	
NRSA F30 Fellowship for Anil Ramesh Wadhvani in support of: Cell autonomous mechanisms of Apolipoprotein E isoform-dependent neurodegeneration		93.866	1F30AG051327-01A1	4,000	
Optimal Older Donor and Recipient Matching to Enhance Liver Transplant Outcomes		93.866	1R21AG049385-02	207,321	24,843
Personality and Well-Being Trajectories in Adulthood		93.866	5R01AG018436-15	255,702	46,381
Physical Exercise to Prevent Disability (The Life Study)	240	93.866	UFDaSP00010684/U01AG022376	87,579	
Preclinical Alzheimers Disease Drug Development of Novel MAPK Inhibitors		93.866	4U01AG043415-05	271,182	
Preclinical Alzheimer's Disease Drug Development of Novel MAPK Inhibitors		93.866	3U01AG043415-04S1	2,172,183	710,278
Preclinical development of a selective attenuator of neuroinflammation for MCI/AD	247	93.866	3200000607-16-257//U01AG050636-02	420,692	
Predoctoral and postdoctoral training program in aging and dementia		93.866	4T32AG020506-15	104,994	
RESveratrol To Improve Outcomes in oldeR pEople with PAD (the RESTORE Trial)		93.866	5R21AG047510-02	221,247	27,152
Role of CK2 in NMDAR trafficking during development and in Alzheimer's disease		93.866	5R00AG041225-03	152,432	
Slow Outward Currents & Learning in Aging Hippocampus		93.866	5R37AG008796-23 REVISED	(3,721)	
Slow Outward Currents and Learning In Aging Hippocampus		93.866	5R37AG008796-25	659,999	
Sustaining quality of life of the aged: Heart transplant or mechanical support?		93.866	5R01 AG047416-02	459,515	119,585
Synaptic substrates of age-dependent memory deficits		93.866	2RF1AG017139-15	115,730	
The ENRGISE Study	240	93.866	UFDSP00011301//U01AG050499	185,912	
Therapeutic Effects of Intranasally-Administered insulin (INI) in Adults with Amnesic Mild Cognitive Impairment (aMCI) or Mild Alzheimer's Disease (AD)	266	93.866	CTAINI067//RF1AG041845	18,961	
				<b>13,455,673</b>	<b>1,530,632</b>
A Novel Treatment for Retinal Ischemia	266	93.867	69129923//5R01EY022059-03	40,433	
Activation of the Angiotensin-Tie2 Pathway to Treat Ocular Hypertension and Glaucoma		93.867	1R01EY025799-01A1	26,154	
Biocompatible retinal prosthesis based on a conjugated polymer photoactive layer	135	93.867	Agmt 06/29/16//R43EY024802A	59,464	

**Northwestern University**

Schedule of Expenditures of Federal Awards  
For the Year Ended August 31, 2016

Research Type/Federal Grantor/Subagency/Project Title	Pass-through ID	CFDA	Sponsor Award Number	FY16 Expense	Passed to Subrecipients
Corneal Epithelial Stem Cells		93.867	5R01EY006769-26	9,287	
Critical Period Plasticity and Binocular Matching in the Visual Cortex		93.867	3R01EY020950-07S1	416,757	
Deciding Where to Look Next: Frontal Eye Field's Role during Natural Viewing		93.867	5F31EY025532-02	26,275	
Diabetic Retinopathy Clinical Research Network Chair Grant		93.867	5U10EY023207-03	456,413	236,870
Eye Movement Maps in Superior Colliculus		93.867	5R21EY023060-02	(14,443)	
First Line Antimetabolites as Steroid-sparing Treatment (FAST) Uveitis Trial	231	93.867	7925sc//U10EY021125	12,829	
Function of Basal Synapses at Mammalian Photoreceptors		93.867	3R01EY012141-19S1	407,398	
Homeobox Gene Six3 in Forebrain and Visual System Development		93.867	7R01EY012162-17 REVISED	406,710	
Hyperspectral Imaging of the Normal and Age-related Macular Degeneration Fundus	158	93.867	12-01177 Proj #100944//5R01EY021470-03	219,525	
Light responses and microcircuitry of two novel amacrine cell types in the mouse retina		93.867	1F32EY025930-02	48,754	
Long-term Follow-up of Patients Who Participated in the Multicenter Uveitis Steriod Treatment Trial (MUST Trial Follow-up Study)	122	93.867	Agmt. 4/4/13//2U10EY014660	4,681	
Macular Edema Treatment Trials Associated with MUST (META-MUST)	122	93.867	Sub#2002749092//1U10EY024527-01	5,372	
Mechanisms of anterior segment development and corneal neovascularization		93.867	2R01EY019484-01A1	112,692	
Multidisciplinary Visual Sciences Training Program		93.867	5T32EY025202-02	124,758	
Multimodal Retinal Functional Imaging for Diabetic Retinopathy	73	93.867	800006243-01//7R01EY019951-05	160,097	
Neural Mechanisms of Fixation Choice While Searching Natural Scenes		93.867	5R01EY021579-04	234,387	64,789
Novel Antiangiogenic Peptides for Treatment of Exudative AMD	275	93.867	553K221 Amd 2//5R24EY022883-03	396,271	93,630
Novel Antiangiogenic Peptides for Treatment of Exudative AMD	275	93.867	676K001//R24EY022883	392,592	
Novel circuit mapping strategies to reverse engineer the retina		93.867	1DP2EY026770-01	520,523	
NRSA: The flexibility of individuation and ensemble representation (Liverence)		93.867	5F32EY023508-03	51,890	
Oxygen delivery and metabolism in diabetic retinopathy using visible-light optical coherence tomography		93.867	1F30EY026472-01	27,460	
Role of Host Cell Factors in Herpes Simplex Virus (HSV) Keratitis		93.867	1R01EY023977-01A1	98,500	
Signal Processing in the Inner Retina		93.867	2R01EY018204	(127,671)	
Signal Processing in the Inner Retina		93.867	4R01EY018204-09 REVISED	340,902	
The Mechanical Basis of Primary Open Angle Glaucoma		93.867	5R01EY019696-05	(3,233)	
The Mechanical Basis of Primary Open Angle Glaucoma		93.867	5R01EY019696-05	88,704	88,704
The Mechanical Basis of Primary Open Angle Glaucoma		93.867	5R01EY019696-07	642,679	440,689
The Retinal Microenvironment in Diabetic Retinopathy		93.867	5R01EY021165-05	300,310	86,371
The Role of MicroRNAs in Corneal Epithelial Homeostasis		93.867	5R01EY019463-07	566,121	
Understanding Diabetic Eye Disease in the Underserved Using Health Data Exchange		93.867	5R21EY024050-02	238,899	
Understanding Feature-based Auditory-Visual Interactions		93.867	5R01EY021184-03	(346)	
Visual Signal Transformation in the Retinocollicular Pathway		93.867	1R01EY026286-01	424,085	
				<b>6,715,229</b>	<b>1,011,053</b>

**Northwestern University**

Schedule of Expenditures of Federal Awards  
For the Year Ended August 31, 2016

Research Type/Federal Grantor/Subagency/Project Title	Pass-through ID	CFDA	Sponsor Award Number	FY16 Expense	Passed to Subrecipients
A New Generation Clinical Decision Support System	263	93.879	0038305 (124684-1) // 5R01LM011663-02	160,710	
A Novel Graph Processing Architecture to Ascertain & Monitor Care Coordination		93.879	5K01LM011973-03	126,913	
Improving the Efficiency and Efficacy in Authoring Essential Clinical FAQs		93.879	5R00LM011389-04	133,998	
Informatics Platform for Mammalian Gene Regulation at Isoform-level		93.879	7R01LM011297-02	325,283	
MEETING CLINICIANS' INFORMATION NEEDS WITH HIGHLY TAILORED KNOWLEDGE SUMMARIES	272	93.879	10028048-02//R01LM011416 AMEND 3	28,460	
Multidimensional Computer Adaptive Testing for Patient Reported Outcomes		93.879	5R01LM011962-02	305,841	62,724
Predocutorial Training Program in Biomedical Data Driven Discovery (BD3)		93.879	5T32LM012203-02	1,217	
				<b>1,082,422</b>	<b>62,724</b>
Diabetic Retinopathy Clinical Research Network	119	93.988	Agmt 12/13/12 // U10 EY14231	<b>7,062</b>	
Building Research And Innovation in Nigeria's Science - (BRAINS)	248	93.989	SP0031902-60041063//1D43TW010134-01	64,775	
Developing Innovative Interdisciplinary Biomedical Engineering Programs in Africa		93.989	1D43TW009374-03	250,207	120,080
Developing Innovative Interdisciplinary Biomedical Engineering Programs in Africa		93.989	4D43TW009374-04 REVISED	29,608	
HIV and Mycobacterial Disease in Mali		93.989	1D43TW010350-01	94,735	55,049
Medical Education Partnership Initiative	242	93.989	7/225/27/NU // R24TW008878	152,363	
Multidisciplinary NeuroAIDS Research Training to Improve HIV Outcomes in Nigeria		93.989	5D43TW009608-03	295,914	208,529
Multidisciplinary NeuroAIDS Research Training to Improve HIV Outcomes in Nigeria		93.989	4D43TW009608-04	245,885	40,332
Northwestern and Jos University Research Training Program in HIV and Malignancies		93.989	3D43TW009575-03S1 REVISED	383,256	74,719
Support of Training and Mentoring in Nigeria for Academics (STAMINA)	246	93.989	IJNWU-STAMINA-Y1//DW43TW010130	95,867	
University of Ibadan MEPI Junior Faculty Research Training Program (UI-MEPI-J)	242	93.989	7/225/29/NU-01//D43TW010140-01	69,794	
				<b>1,682,404</b>	<b>498,709</b>
Ad5.hAC6 Gene Transfer for CHF	278	93.RD	08082-NU SUB//CRB-HLB1-S-10-00076	<b>5,286</b>	
Folic Acid and Zinc Supplementation Trial (FAZST)	272	93.RD	10026957-03//HHSN27520100007C	<b>46,897</b>	
Evaluation of Clinical Samples from DENVax Clinical Trial	18	93.RD	465426/HHSN272201200003I	<b>160,253</b>	
Early Therapeutics Development With Phase II Emphasis	234	93.RD	5-27050 / HHSN261201100071C	<b>8,346</b>	
Jackson Heart Study Field Center NHLBI-HV-13-10	257	93.RD	66102690414-04NWU/HHSN268201300047C	<b>35,517</b>	
COMPASS: Capturing and Analyzing Sensor and Self-Report Data for Clinicians and Researchers	71	93.RD	Agmt 1/9/14//HHSN261201300055C	<b>77,061</b>	

**Northwestern University**

Schedule of Expenditures of Federal Awards  
For the Year Ended August 31, 2016

Research Type/Federal Grantor/Subagency/Project Title	Pass-through ID	CFDA	Sponsor Award Number	FY16 Expense	Passed to Subrecipients
Atopic Dermatitis Research Network (ADRN)	155	93.RD	Agmt 9/5/12//HHSN272201000020C	(453)	
Development of a Patient-Reported Outcomes Instrument to Measure Clinical Effectiveness of Drug Use Reduction Efforts	66	93.RD	Agmt 8/15/16 // HHSN271201500065C	86,196	
Combined Top Down and Bottom Up Proteomics of CompRef Cancer Samples	129	93.RD	13XS108 Mod 06//HHSN261200800001E	60,240	
Development of a Patient-Reported Outcomes Instrument to Measure Clinical Effectiveness of Drug Use Reduction Efforts	66	93.RD	Agmt. 4/2/13//HHSN271201000024C	15,225	
EMR Dataset (Eskenazi Health EMR Dataset)	106	93.RD	Agr. 4/19/2016 //HHSN27601500744P	6,271	
Multi-Site Study of the Efficacy of Speech Perception Training for Hearing-Aid Users	46	93.RD	CDT-2013-6//R33DC011174-02	71,329	
CR6261CR8020FLZ2001: Multicenter, randomized, double-blind, placebo-controlled study to evaluate the effect of CR8020 and CR6261 in hospitalized patients with influenza A infection	53	93.RD	CR6261CR8020FLZ2001	5,000	
Protocol Number: IRC-005 A Randomized Double-Blind, Phase 3 Study Comparing the Efficacy and Safety of High-Titer versus Low-Titer Anti-Influenza Immune Plasma for the Treatment of Severe Influenza A	198	93.RD	CRB-SSS-S-15-004659//HHSN2612008000	9,904	
Cancer Prevention Agent Development Program: Early Phase Clinical Research		93.RD	HHSN26120120035I / Task Order 008	753,746	33,200
SurvivorConcierge: Extending Cancer Survivorship Care Beyond the Clinic Using a Smartphone-enabled Monitoring, Navigation and Tailored Intervention Program	280	93.RD	HHSN261201500013C	114,961	
Coronary Artery Risk Development in Young Adults (CARDIA) Study-Chicago Field Ctr		93.RD	HHSN268201300027C	1,397,086	7,719
Center for Structural Genomics of Infectious Diseases		93.RD	HHSN272201200026C	5,560,250	3,958,853
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	2,219	
National Children's Study: Vanguard Study (South ROC)		93.RD	HHSN275201200007I	1,545,010	367,092
Asthma Cohort Support Contract		93.RD	HHSN275201300013C	868,656	8,259
Phase I and II Clinical Trials of Cancer Chemopreventive Agents		93.RD	N01-CN-35157	(170,135)	
Multi-Ethnic Study of Atherosclerosis (MESA) - Field Center		93.RD	N01-HC-95164 / Mod 35	17,886	11,652
Urinary Knowledge Study (U-KNOW)	133	93.847	206423//1R01DK104842-01A1	817	
Impact of Aggressive Empiric Antibiotic Therapy and Duration of Therapy on the Emergence of Antimicrobial Resistance During the Treatment of Ventilator-Associated Pneumonia	240	93.RD	00111894/UFDSP00010035//HHSN272201000043C	(57,482)	
Multi-Ethnic Study of Atherosclerosis (MESA) Chicago Field Center Subcontract	274	93.RD	UWSC8539//HHSN268201500003I	599,734	

**Northwestern University**

Schedule of Expenditures of Federal Awards  
For the Year Ended August 31, 2016

Research Type/Federal Grantor/Subagency/Project Title	Pass-through ID	CFDA	Sponsor Award Number	FY16 Expense	Passed to Subrecipients
Office of Minority Health Addressing Lupus Health Disparities Adapting Culturally-Competent Community-Based Education Models Through Local and National Collaborative Partnerships		93.137	1 CPIMP151087-01-00	<b>356,021</b>	<b>145,024</b>
Office of the Assistant Secretary for Health Re-Entry Community Linkages (RE-LINK)		93.137	1CPIMP161134-01-00	<b>321</b>	
Office of the Director, National Institutes of Health Illinois Precision Medicine Consortium (IPMC)		93.310	1UG30D023189-01 REVISED	23,033	
Self-Organization of the Human Genome		93.310	1DP20D008717-01	412,355	
Self-Organization of the Human Genome		93.310	4DP20D008717-02	81,929	
An IC-ICP-MS for advanced speciation and metalomics analysis		93.351	1S100D020118-01	262,131	
Liquid handling system for Northwestern High Throughput Analysis Laboratory		93.351	1S100D020116-01	347,429	
Science Club Summer Camp: Training Teachers and Youth in Authentic STEM Practice		93.351	5R250D020222-02	<u>153,590</u>	
				<b>1,280,467</b>	
Office of the National Coordinator for Health Information Technology ARRA-The Chicago HIT Regional Extension Center		93.718	90RC0020	<b>317,976</b>	<b>294,314</b>
Substance Abuse and Mental Health Services Lake County BHTCC	51	93.243	LC# 15058//H79SM061684	54,310	
National Child Traumatic Stress Initiative (NCTSI) Category III, Community Treatment and Services (CTS)	169	93.243	Agreement Date: 1/28/14	64,318	
National Child Traumatic Stress Initiative Treatment and Service Adaptation Centers (TSA) Category II		93.243	5U79SM061254-03 REVISED	(39,610)	
Trauma Informed Youth Services Initiative	290	93.243	Agrmnt 012610	<u>228</u>	
				<b>79,246</b>	
National Child Traumatic Stress Initiative (NCTSI) – Category III, Community Treatment and Services (CTS)	290	93.RD	Agreement Date: 2/27/2014	<b>33,175</b>	
<b>Department of Health and Human Services Total</b>				<b>305,384,674</b>	<b>50,031,129</b>

**Northwestern University**

Schedule of Expenditures of Federal Awards  
For the Year Ended August 31, 2016

Research Type/Federal Grantor/Subagency/Project Title	Pass-through ID	CFDA	Sponsor Award Number	FY16 Expense	Passed to Subrecipients
Department of Homeland Security					
Chalcogenide semiconductors for g-ray detection from earth abundant elements		97.077	2014-DN-077-ARI086-01	<b>359,155</b>	
Next Generation Semiconductor Detectors for Identification of Special Nuclear Materials	179	97.RD	C14-09//Agmt 2-25-14//HSHQDC-13-C-B0039	<b>343,076</b>	
Monolithic, Widely Tunable, Quantum Cascade Laser Source		97.RD	HSHQDC-13-C-00034/P00003	<b>820,660</b>	
Novel Compound Semiconductor Radiation Detectors	160	97.RD	SUB-01//HSHQDC-14-R-B0009	<b>128,882</b>	
Federal Emergency Management Agency					
FEMA Vehicle Crash Study: Firefighter Injury Reduction through Sustainable Risk Management	223	97.044	229812//EMW-2013-FP-00351	<b>23,385</b>	
<b>Department of Homeland Security Total</b>				<b>1,675,158</b>	
Department of Justice					
Bureau of Justice Assistance					
Sheriff Women's Justice Program	100	16.738	412229	30,881	
Sheriff Women's Justice Program	100	16.738	412329//2012-DJ-BX-0203	175,431	
				<b>206,312</b>	
Federal Bureau of Investigation					
Array x Array: Screening and Ultrasensitive Detection of Epi-Proteomic Modifications Due to Chemical and Biological Weapons Exposure	215	16.RD	MFD625//DJF-15-1200-K-0001726	<b>425,595</b>	
Biodiagnostic Approaches to Human Profiling Through Nanomaterial Indicators		16.RD	DJF-15-1200-K-0001730	<b>728,888</b>	
Office of Justice Programs					
Northwestern Juvenile Project: Archiving Data, Part I		16.540	2012-JR-FX-0005	<b>161,222</b>	
Trajectories of Delinquency and the Juvenile Justice Systems Response		16.541	2013-JF-FX-0057	<b>466,362</b>	
<b>Department of Justice Total</b>				<b>1,988,379</b>	
Department of Labor					
Building "LINCS" for Supply Chain Management (Leveraging, Integrating, Networking, Coordinating Supplies		17.282	TC-25004-13-60-A-17	<b>128,314</b>	
<b>Department of Labor Total</b>				<b>128,314</b>	

**Northwestern University**

Schedule of Expenditures of Federal Awards  
For the Year Ended August 31, 2016

Research Type/Federal Grantor/Subagency/Project Title	Pass-through ID	CFDA	Sponsor Award Number	FY16 Expense	Passed to Subrecipients
Department of Transportation					
Enabling On-line Logistics Services Auction Platform (OLSAP): Optimal Eco-Routing Strategies	243	20.701	557K314//298K012	<b>13,836</b>	
Enhancing Sleep Efficiency on Towboats in the U.S. Inland Waterway Industry	150	20.RD	NCFRP-45//DTOS59-06-G-00039	<b>2,779</b>	
Federal Highway Administration					
2015 Dwight David Eisenhower Graduate Fellowship		20.215	DTFH6415G00060	<b>4,862</b>	
Analysis, Modeling, and Simulation (AMS) Testbed Development and Evaluation to Support Dynamic Mobility Applications (DMA) and Active Transportation and Demand Management (ATDM) Programs	23	20.RD	105952SB1M	<b>78,612</b>	
Integrated Modeling for Road Condition Prediction	130	20.RD	OA-F-204-13-19/P010166759 Mod 2/DTFH61-12-D-00050	<b>22,442</b>	
Active Transportation and Demand Management (ATDM) Analytical Methods for Urban Streets	130	20.RD	P010177604/DTFH61-12-D-00050	<b>51,106</b>	
Task Integrated Modeling for Road Condition Prediction - Phase 2	130	20.RD	P010178562 //DTFH61-12-D-00045	<b>15,165</b>	
<b>Department of Transportation Total</b>				<b>188,802</b>	
Department of Veterans Affairs					
Veterans Engineering Resource Center (VERC)		64.RD	VA240C-14-D-0006	<b>3,000</b>	
Edward Hines, Jr. VA Hospital					
Intergovernmental Personnel Act (IPA) agreement for Mengnan Wu		64.018	IPA Agmt. signed 12/22/2014 (578/151)	12,891	
Intergovernmental Personnel Act (IPA) Assignment Agreement for Elisa J. Gordon		64.018	578/151	22,594	
Intergovernmental Personnel Act (IPA) for Geoffrey Brown		64.018	IPA Agmt - 578/151	38,265	
Intergovernmental Personnel Act (IPA) for Jennifer Kahn		64.018	578/151	1,270	
Intergovernmental Personnel Act (IPA) for Julian Acasio		64.018	IPA Agmt signed 06/03/2016	1,280	
Intergovernmental Personnel Act Agreement for Elisa Gordon		64.018	578/151	(4,879)	
Intergovernmental Personnel Act Agreement for Kenzie Cameron		64.018	IPA Agmt. signed 09/04/2015	5,925	
IPA Agreement for Kwang-Youn A. Kim: Maneuverability Enhancement Following Spinal Cord Injury		64.018	IPA AGMT. dated 07/18/2016	<u>576</u>	
				<b>77,922</b>	
Contracted Services under Order No. VA69D-15-P-3249 (Hines VA Contract for Elisa Gordon)					
		64.RD	VA69D-15-P-3249	<b>8,463</b>	

**Northwestern University**

Schedule of Expenditures of Federal Awards  
For the Year Ended August 31, 2016

Research Type/Federal Grantor/Subagency/Project Title	Pass-through ID	CFDA	Sponsor Award Number	FY16 Expense	Passed to Subrecipients
James A. Haley Veterans' Hospital					
IPA Agreement for Sally Jensen: Measuring Quality of Life in Veterans with Deployment-Related PTSD		64.018	673-D57052 (Year 03 PO Number)	(38)	
IPA for Michael Kallen: Measuring Quality of Life in Veterans with Deployment-Related PTSD		64.018	IPA Agmt signed 12/23/2014	<u>1,241</u>	
				<b>1,203</b>	
James J. Peters VA Medical Center					
Development of Blood Pressure Symptom subdomain for the Spinal Cord Injury Quality of Life (Off-site Research for Dr. Jill Wecht)		16.RD	VA243-15-C-0182	<b>18,653</b>	
Extending Veteran Participation in the Validation of the SCI-QOL/CAT		16.RD	VA243-15-C-0191	<b>37,919</b>	
VA Merit Grant for Jill Wecht: Development of the Blood Pressure Symptom Subdomain for the SCI-QOL		64.RD	VA243-12-C-0234	<b>(17,674)</b>	
Extending Veteran Participation in the Validation of the SCI-QOL/CAT (Ann Spungen's Merit Grant #B7566-R)		64.RD	VA243-13-C-0050	<b>(6,655)</b>	
Jesse Brown VA Medical Center					
2014 Intergovernmental Personnel Act (IPA) Agreement for Michael Dixon		64.018	Agmt Signed 10/06/2015	53,552	
Intergovernmental Personnel Act (IPA) Agreement for Ewa Kosciuczuk		64.018	Agmt. signed 09/22/2015 (537/151)	53,945	
Intergovernmental Personnel Act (IPA) Assignment Agreement for Janet Martinez		64.018	IPA Agmt. Signed 07/06/2016	27,524	
Intergovernmental Personnel Act (IPA) Assignment Agreement for John T. Brinkmann		64.018	IPA Agmt Signed 12/11/15 (IPA0028657)	11,381	
Intergovernmental Personnel Act (IPA) Assignment Agreement for Linda India		64.018	IPA Agmt. Signed 12/4/15	4,705	
Intergovernmental Personnel Act (IPA) Assignment Agreement for Ling Bei		64.018	IPA Agmt signed 08/07/15	33,143	
Intergovernmental Personnel Act (IPA) Assignment Agreement for Luisa Isabel Morales Nebreda		64.018	IPA Agmt. Signed 08/28/2014	(957)	
Intergovernmental Personnel Act (IPA) Assignment Agreement for Qun Jiang		64.018	IPA Agmt. Signed 07/06/2016	18,526	
Intergovernmental Personnel Act (IPA) Assignment Agreement for Saul Soberanes		64.018	IPA Agmt. Signed 10/06/2015	59,798	
Intergovernmental Personnel Act (IPA) Assignment Agreement for Vera Shively		64.018	IPA Agmt. Signed 07/06/2016	47,953	
Intergovernmental Personnel Act (IPA) Assignment Agreement for Wang Hao		64.018	IPA Agmt signed 03/17/16 (537/151)	21,766	
Intergovernmental Personnel Agreement for Krishan Kumar		64.018	IPA Agmt. Signed 09/22/2015	47,800	
IPA for Monica Chi		64.018	Agmt Signed 02/19/2016	31,040	
IPA for Paul Cheresh		64.018	Agmt Signed 03/17/16	66,845	
VA IPA for Elspeth Beauchamp		64.018	Agreement Signed 09/15/2015	64,813	
VA IPA for Weiqi Huang		64.018	IPA Agmt. signed 12/5/14 (537/151)	<u>34,198</u>	
				<b>576,032</b>	

**Northwestern University**

Schedule of Expenditures of Federal Awards  
For the Year Ended August 31, 2016

Research Type/Federal Grantor/Subagency/Project Title	Pass-through ID	CFDA	Sponsor Award Number	FY16 Expense	Passed to Subrecipients
Tuscaloosa VA Medical Center Intergovernmental Personnel Agreement: Development of a Multidimensional Pain Measure for Persons with Dementia (PIM-D)		64.018	679-D55001 (Year 04)	<b>2,461</b>	
VA Salt Lake City Health Care System Quality Enhancement Research Initiative (VA SLC Health Care System IPA Agreement for William Thompson)		64.018	IPA Agmt signed 02/01/2016	<b>40,735</b>	
VHA Office of Informatics and Analytics Intergovernmental Personnel Agreement (IPA) Assignment Agreement for Madhusudhana C. Reddy		64.018	IPA Agmt signed 05/13/2016	<b>9,353</b>	
<b>Department of Veterans Affairs Total</b>				<b>751,412</b>	
National Aeronautics and Space Administration A Novel Approach to the Common Envelope Evolution	197	43.001	TM6-17005X//NAS8-03060	20,251	
An X-Ray View of Hypervelocity Star HVS5	197	43.001	G04-15137X//NAS8-03060	43,306	
Joint Chandra/XMM/EVLA Monitoring of the Gas Cloud G2 as it Encounters Sgr A*	197	43.001	G03-14121X Amd 2//NAS8-03060	13,702	
Life Underground	266	43.001	65904754 Amd 2//NNA13AA92A	68,839	
Modeling Black Hole X-Ray Binaries in Globular Clusters	197	43.001	TM5-16004X//NAS8-03060	<u>57,920</u>	
				<b>204,018</b>	
Multiple Undergraduate Research Projects	244	43.008	2015-05200-09(15789)-AB425//NNX154A	<b>75,198</b>	
Preparation and Characterization of Sn- and Sb-based Zintl Phases as Promising Thermoelectric Materials	30	43.RD	1536068//NNN12AA01C	<b>215,153</b>	
Fast Light Enhanced Active Gyroscopes, Accelerometers and Fiber-Optic Sensors	60	43.RD	Agmt 5/30/16 // NNX16CM03C	<b>49,460</b>	
Fast Light Enhanced Active and Passive Gyroscopes, Accelerometers and Fiber-Optic Sensors	60	43.RD	Agreement 8/26/15; NNX15CM35P-4200550857	<b>35,000</b>	
Modeling the Origins of Sub-subgiant Stars	200	43.RD	HST-AR-13910.001-A//NAS5-26555	<b>7,477</b>	
Investigating the Gas within the Planck Galactic Cold Clumps	200	43.RD	HST-AR-14292.001-A	<b>13,952</b>	
Metallicity and Azimuthal Angle Diagnostics of Inflows and Outflows: Interpreting HST Measurements of Circum-Galactic Gas Flows	200	43.RD	HST-AR-14293.001-A//NAS5-26555	<b>32,998</b>	
The Awakening of the Super-Massive Black Hole at the Center of Our Galaxy	200	43.RD	HST-GO-13316.002-A//NAS5-26555	<b>13,367</b>	
Monitoring the Awakening for the Dormant SMBH at the Center of Our Galaxy	200	43.RD	HST-GO-13403.006-A	<b>12,844</b>	
Sofia Wide-Field Far-IR Polarimetry and Fine-Structure-Line Imaging with the HAWC+ Upgrade	30	43.RD	Subk No. 1478794 Mod 10//NNN12AA01C	<b>194,233</b>	

**Northwestern University**

Schedule of Expenditures of Federal Awards  
For the Year Ended August 31, 2016

Research Type/Federal Grantor/Subagency/Project Title	Pass-through ID	CFDA	Sponsor Award Number	FY16 Expense	Passed to Subrecipients
Modeling the Blue Stragglers in Globular Clusters	200	43.RD	HST-AR-12829.004-A//NAS5-26555	<b>4,080</b>	
NASA Ames Research Center					
Effects of Spaceflight on Gastrointestinal Microbiota in Mice: Mechanisms and Impact on Multi-System Physiology		43.007	NNX15AL05G 000001	<b>232,288</b>	
FORCAST Observations of Sgr C at the Galactic Center	220	43.012	SOF0099//NAS2-97001	<b>10,798</b>	
Design and fabrication of strain-balanced nBn dual-band LWIR/LWIR focal plane arrays based on InAsSb/InAsType-II superlattices	163	43.RD	Agmt 12/16/15//NNX15CG49P//T8.01-9967	<b>16,866</b>	
Tunable THz Source for Environmental Monitoring of Planetary Bodies	163	43.RD	Agmt 12/16/15//NNX15CS51P	<b>16,866</b>	
NASA George C. Marshall Space Flight Center					
Coarsening of Dendritic Solid-Liquid Mixtures: The Low Volume Fraction Limit		43.001	NNX14AB73G 000004	<b>115,900</b>	
Fast Light Optical Gyroscopes for Precision Inertial Navigation		43.009	NNM13AA60C	<b>(20)</b>	
NASA Goddard Space Flight Center					
Accurate TTV characterization of Kepler planetary systems, and the implications for their dynamics and formation		43.001	NNX15AT51H 000001	30,000	
Deciphering Kepler's Planetary Systems		43.001	NNX14AD21G-000003	86,630	
Dynamical Modeling of Dense Star Clusters with a Parallel Monte Carlo Code		43.001	NNX14AP92G/000003	129,424	
Dynamics of Extrasolar Planetary Systems		43.001	NNX12AI86G 000003	31,133	
Improving the Performance of X-Ray Optics with Magnetostrictive Films		43.001	NNX11AG05G-000007	(5,911)	
Lipid Biomarkers of the Deep Subsurface Biosphere		43.001	NNX15AM08G 000001	45,146	
Low Frequency Gravitational Wave Astrophysics		43.001	NNX13AM10G/000003	59,868	
Supernova Remnant Observations with Micro-X		43.001	NNX16AL94G	265,244	
The Architectures of Near-resonant Kepler Planets		43.001	NNX14AG98G-000001	23,203	15,018
The Balloon-borne Large Aperture Submillimeter Telescope - BLAST	262	43.001	560958//NNX13AE50G//Amd 4	207,125	
The Physical Nature of Circum-Galactic Gas		43.001	NNX15AB22G	115,005	
Titan's Impact Craters and Associated Fluvial Features: Evidence for a Subsurface Ocean		43.001	NNX13A002H 000001	29,269	
Understanding Gamma-Ray Emission from the Galactic Center: Constraining the Millisecond Pulsar Population		43.001	NNX15AU69G	44,643	
				<b>1,060,779</b>	<b>15,018</b>

**Northwestern University**

Schedule of Expenditures of Federal Awards  
For the Year Ended August 31, 2016

Research Type/Federal Grantor/Subagency/Project Title	Pass-through ID	CFDA	Sponsor Award Number	FY16 Expense	Passed to Subrecipients
Implementing a Near-Optimal Optical Receiver for Inter-Planetary Communication		43.008	NNX12AN27H/000004	<b>43,405</b>	
Broadband Electrically Tunable Monolithic Mid-Infrared Laser		43.009	NNX13AT10G/000001	146,677	
Excitronics Based on Carbon Nanomaterials: A Pathway Toward Low-Power, High-Speed, and Radiation-Hard Computation		43.009	NNX11AM87H-000004	787	
Further Development of Aperture: A Precise Extremely large Reflective Telescope Using Re-configurable Elements		43.009	NNX16AL31G-000001	10,163	
Integrating Two-Dimensional Nanomaterials and Molecular Dielectrics for Radiation-Hard Non-Volatile Memory		43.009	NNX12AM44H/ 000003	87,328	
Tailorable Porous Ceramics via Freeze Casting		43.009	NNX11AM91H	<u>1,097</u>	
				<b>246,052</b>	
Aperture: A Precise Extremely large Reflective Telescope Using Re-configurable Elements		43.012	NNX15AL89G	70,046	41,263
Compact Robust Integrated PPM Laser Transceiver Chip Set with High Sensitivity, Efficiency, and Re-Configurability		43.012	NNX16AE02G 000002	<u>3,556</u>	
				<b>73,602</b>	<b>41,263</b>
NASA Lyndon B. Johnson Space Center					
CREWS: Crew Recommender for Effective Work in Space		43.003	NNX15AM32G 000002	244,071	52,590
HERO Twin Astronaut Study Consortium (TASC) Project: Metagenomic Sequencing of the Bacteriome in GI Tract of Twin Astronauts		43.003	NNX14AH26G	50,359	
SCALE: Shared Cognitive Architectures for Long-term Exploration	82	43.003	RG026-G1 // NNX15AM26G	173,004	
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	82	43.003	RF890-G1 // NNX15AK73G	<u>152,444</u>	
				<b>619,878</b>	<b>52,590</b>
NRI: Collaborative Research: Integrating Physics Models and Control Methodologies for Enhanced Legged Locomotion on Yielding Terrain		43.007	NNX15AR24G-000003	<b>93,979</b>	
NASA Neil A. Armstrong Flight Research Center					
Microgravity fabrication of freeze-cast titanium foams		43.007	NNX15AJ84G 000001	<b>50,235</b>	
<b>National Aeronautics and Space Administration Total</b>				<b>3,438,408</b>	<b>108,871</b>

**Northwestern University**

Schedule of Expenditures of Federal Awards  
For the Year Ended August 31, 2016

Research Type/Federal Grantor/Subagency/Project Title	Pass-through ID	CFDA	Sponsor Award Number	FY16 Expense	Passed to Subrecipients
National Endowment for the Humanities					
Stranger in the Shogun's City: A Japanese Woman and Her Worlds, 1821-1862		45.160	FA-58189-15	<u>50,400</u>	
<b>National Endowment for the Humanities Total</b>				<b>50,400</b>	
National Science Foundation					
3D Braided Composite Structures - Experimental Characterization and Modeling of Fracturing Behavior		47.041	CMMI-1435950	78,234	
3D Near Field e-Writing with Submicron Resolution		47.041	CMMI-1404489	105,244	
3D Tissue Inks: Multifunctional 3D Printing Materials Platform for Bone Graft Substitutes		47.041	IIP-1508285	17,008	
A Novel Non-Contact Technique for Dynamic Loading of Thin Film Materials Using Finite Amplitude Mechanical Stress Waves		47.041	CMMI-1130924	190	
A Quantum-Eraser Approach to Heralding High-Quality Single Photons		47.041	ECCS-1232022/003	72,597	
Addressing Geographical Disparities in Transplant Organ Accessibility Across United States		47.041	CMMI-1131568	60,745	
Advancing Dynamic Relief Response: Integration of New Data Streams and Routing Models		47.041	CMMI-1265786	75,217	
An Interatomic Potential for Li <sub>x</sub> Si Alloys and Its Applications to Lithiation Induced Deformation and Failure in Silicon		47.041	CMMI-1200075	7,305	
An Optimal Design of Experiments Approach for Reliable Risk Assessment with Error-prone Electronic Medical Records		47.041	CMMI-1436574	102,072	
Assessing Supply Chain Technology Variability and Environmental Improvement Opportunities: A Hybrid Input-Output, Techno-Economic Life Cycle Modeling Approach		47.041	CBET-1236837	53,166	
BIOMOLECULAR CELL INJECTION WITH NANOFOUNTAIN PROBE SYSTEMS	108	47.041	IIP-1330151	3,526	
Biophotonic Detection of Field Carcinogenesis of Pancreatic Cancer		47.041	CBET-1340617	88,925	1,774
CAREER: Engineering Non-Growth Metabolism for High-Yield Biochemical Production		47.041	CBET-1452549-001	40,536	
CAREER: Functional Imaging to Prevent Blindness		47.041	CBET-1055379	127,506	
CAREER: Mechanics of Geomaterials Exposed to Multi-Physical Perturbations: Innovating Science, Training and Education through Fundamental Principles		47.041	CMMI-1351534	87,788	
CAREER: Rational design of a biomimetic nanomaterial library to probe mechanisms behind virus-induced immunopathology		47.041	CBET-1453576	116,822	
CDI-Type II: Cyber-Enabled Discovery in Neuromechanical Systems		47.041	CMMI-0941674	(9)	
Collaborative Research in Biophotonics: Towards High-Resolution, Label-Free Molecular Imaging in Deep Tissue Via Stimulated Raman Excitation and Ultrasound Detection		47.041	CBET-1066776/001	(459)	

**Northwestern University**

Schedule of Expenditures of Federal Awards  
For the Year Ended August 31, 2016

Research Type/Federal Grantor/Subagency/Project Title	Pass-through ID	CFDA	Sponsor Award Number	FY16 Expense	Passed to Subrecipients
Collaborative Research: Analysis and Solution Methods for Function Robust Optimization Models		47.041	CMMI-1361942	28,254	
Collaborative Research: Binary Constrained Convex Quadratic Programs with Complementarity Constraints and Extensions		47.041	CMMI-1334639	75,960	
Collaborative Research: CybeR-Enabled Demand-Interactive Transit for the Next-Generation Transportation Systems		47.041	CMMI-1402911	55,191	
Collaborative Research: Elucidation and Evaluation of Strategies to Mitigate Secondary Reactions in Cellulose Pyrolysis for Enhanced Production of Hydrolysable Anhydrosugars		47.041	CBET-1435228	31,652	
Collaborative Research: Engineering Polymer Nanodielectric Systems using a Descriptor-based Design Methodology		47.041	CMMI-1334929	58,009	
Collaborative Research: Ergodic Trajectories in Discrete Mechanics		47.041	CMMI-1334609	59,301	
Collaborative Research: Fundamentals of Material Behavior and Structure in Making Laminated Metal Composites with Assistance of Electrical Current in Bonding Operation		47.041	CMMI-1463459	18,454	
Collaborative Research: Integrated Measurement and Predictive Modeling of Adsorbate Coverage and Compositional Effects on Catalytic Activity		47.041	CBET-1264963	62,457	
Collaborative Research: Laser-driver Micro-Transfer Printing		47.041	CMMI-1300846-03	48,793	
Collaborative Research: Leveraging Noncontact Dimensional Metrology to Understand Complex Part-to-Part Variation		47.041	CMMI-1265709	37,327	
Collaborative Research: Manipulation Thz Wave Using Three-Dimensional Metamaterials		47.041	ECCS-1232134	(53)	
Collaborative Research: Model-Based Multidisciplinary Dynamic Decisions in Design		47.041	CMMI-1537641	46,408	
Collaborative Research: Nonlinear Ultrasonic Wave Mixing Techniques for Detecting Localized Fatigue Damage in Metallic Materials		47.041	CMMI-1363221	7,305	
COLLABORATIVE RESEARCH: Optimizing Direct-Marketing Strategies in Non-Profit Fundraising: An Integrated Framework for Segmentation, Estimation and Control		47.041	CMMI-1335104-02	45,496	
Collaborative Research: The Positive Role of Queues on Consumer Value Perception and Firm Profits: Mathematical Models and Laboratory Experiments		47.041	CMMI-1301090	68,917	
Collaborative Research: The Unintended Ecological Consequences of Nanomaterials: Effects of Nanotitania in Benthic Systems		47.041	CBET-1067751	9,966	
Collaborative Research: Tribochemically Induced Gelation and Film Formation at Metal Interfaces		47.041	CMMI-1200529	10,521	
Collaborative Research: Virtual Full-Duplex Wireless Networking		47.041	ECCS-1231828/002	1,765	
Computational Discovery and Analysis of Catalytic Routes to Bio-based Renewable Chemicals	117	47.041	400-72-04-33-15F1//EEC-0813570	42,564	

**Northwestern University**

Schedule of Expenditures of Federal Awards  
For the Year Ended August 31, 2016

Research Type/Federal Grantor/Subagency/Project Title	Pass-through ID	CFDA	Sponsor Award Number	FY16 Expense	Passed to Subrecipients
Control of Hybrid Locomotion with Impacts		47.041	CMMI-1436297	79,617	
Curved Waterjet-Guided Laser Micro-Manufacturing		47.041	CMMI-1234491	118,333	
Cutting and Shuffling: A New Dynamical Systems Paradigm for Mixing		47.041	CMMI-1435065	160,830	
Design and Control Principles for Mobile Health Care Operations Management-- The Case of Asthma Control		47.041	CMMI-1131298	(651)	
Design and Development of Fire-Resistant Ferritic Steels for Structural Applications		47.041	CMMI-1130000	(1)	
Design and exploration of high-temperature steels for electric power generation applications		47.041	CMMI-1462850	62,495	
Digital Loft: A Learning Platform for Instructors and Trainers		47.041	IIP-1550565	46,922	
Direct Measurement of the Role of Confinement and Chemistry on Local Physical and Mechanical Properties of Polymers		47.041	CMMI-1235355/001	6,834	
Distribution and Moment-Robust Optimization Models and Algorithms		47.041	CMMI-1100868	94,363	
DMREF: A Fundamental Approach to Study the Effect of Structural and Chemical Composition in Functionalized Graphene Materials		47.041	CMMI-1235480	311,304	
DMREF: Collaborative Research: Simulation-Based Design of Supramolecular Nanotubes With Tunable Interiors Toward Functional Porous Membranes		47.041	CBET-1234305	47,884	
EAGER: New Biophotonics and Computational Molecular Dynamics for Understanding Epigenetic Regulation of gene Transcription		47.041	CBET-1249311	(6,514)	
EAGER: Spatial and Spectral Beam Control of Angled-Cavity Distributed- Feedback Quantum Cascade Lasers		47.041	ECSS-1359779	1,283	
EFRI 2-DARE: Scalable Growth and Fabrication of Anti-Ambipolar Heterojunction Devices		47.041	EFRI-1433510	549,836	97,058
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	543,245	133,101
EFRI-BioSA: Bio-Inspired Arrays of Haircell Sensors for Artificial Glabrous and Hairy Skin		47.041	EFRI-0938007	20,282	20,282
EFRI-BSBA: Nanoactuation and Sensing of Neural Function for Engineering Future Biomimetic Retinal Implants and Therapies	243	47.041	2009-06949-01-05//EFMA-0938072	13,375	
Electric Field Guided Micro Additive Manufacturing Process		47.041	CMMI-1463411	64,513	
Engineering a recombinant methane monooxygenase to convert methane to methanol for the production of fuels and chemicals	175	47.041	PNU-001//1534743	71,991	
Enhancing Identifiability of Computer Simulation Models via Design for Calibration		47.041	CMMI-1233403	25,565	
Excessive Bridge Deflections: Inverse Analysis to Identify Multi-Decade Creep Properties of Concrete		47.041	CMMI-1129449	(14,769)	
Feedback-based radiofrequency ablation system for user-defined three-dimensional ablation geometries	109	47.041	Agmt 8/9/2016//IIP-1622842	26,309	

**Northwestern University**

Schedule of Expenditures of Federal Awards

For the Year Ended August 31, 2016

Research Type/Federal Grantor/Subagency/Project Title	Pass-through ID	CFDA	Sponsor Award Number	FY16 Expense	Passed to Subrecipients
Fractal Mechanics of Stretchable Piezoelectrics for Mechanical Energy Harvesting		47.041	CMMI-1400169	117,259	
Friction in Full View		47.041	CMMI-1400618	168,341	
Functionalities Emerging in Adaptive Brain Networks through Selective Synchronization of Neurons by Targeted Feedback		47.041	CMMI-1435358	70,591	
GOALI - Collaborative Research: Fundamental Study and Pragmatic Enhancement of Rock Cutting/Drilling for Oil Exploration through Embedded Thin Film Sensor Arrays in Polycrystalline Diamond (PCD) Inserts		47.041	CMMI-1301127	921	
GOALI Portfolio of Renewable Energy Generation		47.041	CMMI-1201151	7,273	
GOALI/Collaborative Research: Electrically-Enhanced Precision MicroRolling		47.041	CMMI-1100787	117,267	
GOALI/Collaborative Research: Reliable Prediction of Endurance Life of Ultra-High-Strength Aerospace Rolling-Element Bearings		47.041	CMMI-1434834	55,186	
GOALI: Computer Simulation Analytics		47.041	CMMI-1537060	90,803	
GOALI: Models and Methods for Marathon Course Design using Multi-Objective Approaches		47.041	CMMI-1405231	106,456	
GOALI: Strength Loss in Clays During Earthquake and Other Cyclic Loading		47.041	CMMI-1434876	174,918	
Green Solution-Processing of All-Carbon and Carbon-Rich Composites for Energy Conversion and Storage		47.041	CMMI-1130407	3,230	
I-Corps: AdsProphet: Full-screen Delay-aware Mobile Ads Display		47.041	IIP-1558209	49,551	
I-Corps: Three-Dimensional Printing of a Customizable Accommodating Intraocular Lens		47.041	IIP-1519687	28,901	
I-Corps: Motion contrast 3D scanning technology		47.041	IIP-1600311	8,101	
IDR: Engineering Electroactive-Polymer-Based Phononic Crystals as a Sustainable Energy Source		47.041	CMMI-1130948	(85)	
International Workshop on Soil Environment Interactions Across Scales: Key Challenges for Future Geo-Engineers.	82	47.041	RE714-G1//CMMI-1443990	1,747	
Magnetically Controlled- Laser Induced Plasma Micro-Machining (MC-LIPMM)		47.041	CMMI-1563244	3,246	
Managing Downstream Patient Flow Processes Using Improved Coordination and Staffing		47.041	CMMI-1335585	70,563	
Market Expectations, Long Term Risk, and Stochastic Spectral Theory		47.041	CMMI-1536503	92,198	
Molecular Organization and Transport in Synthetic and Biological Nanopores		47.041	CBET-1403058	100,549	
Monolithic Nanofabrication: A Bottom-up Approach for Manufacturing Nanotextured Surfaces		47.041	CMMI-1462633	78,865	
MRI: Instrument Development: Additive Rapid Prototyping Instrument (ARPI)		47.041	CMMI-1429658	100,889	
Multidimensional Network Analysis for Analyzing and Predicting Complex Customer-Product Relations in Engineering Design		47.041	CMMI-1436658	176,771	
Multiscale and Multiphysics Simulation of Reinforced Concrete Structures		47.041	CMMI-1435923	69,042	

**Northwestern University**

Schedule of Expenditures of Federal Awards  
For the Year Ended August 31, 2016

Research Type/Federal Grantor/Subagency/Project Title	Pass-through ID	CFDA	Sponsor Award Number	FY16 Expense	Passed to Subrecipients
Neuroprotective Engineering Based on Innate Responses to Stroke		47.041	CBET-1403036	106,922	
NNCI: Soft and Hybrid Nanotechnology Experimental (SHyNE) Resource		47.041	ECCS-1542205	709,608	107,665
OPTICENT HEALTH-FUNCTIONAL IMAGING FOR EARLY DISEASE DETECTION		47.041	IIP-1507501	38,716	
PFI: AIR-TT: Hybrid Tri-pyramid Robot: A Novel Type of Double-Sided Incremental Forming Machine		47.041	IIP-1414394-003	114,424	
PFI:AIR - TT: BaTiO3 Photonic Crystal Electro-optic Devices for 50 GHz Applications		47.041	IIP-1500222	115,524	
PFI:BIC - Smart CROwdsourced Urban Delivery (CROUD) System		47.041	IIP-1534138	131,277	42,611
PFI:BIC: A Smart, "Always-on" Health Monitoring System		47.041	IIP-1534120	279,267	155,254
PFI-AIR: Technology Translation - Highly Sensitive Eye-safe Flash LiDARs based on Nano-injection Detectors		47.041	IIP-1500314 001	99,759	17,881
Photonic-jet Coupled Optical Antenna for Near Room Temperature Infrared Detectors and Imagers		47.041	ECCS-1310620	82,785	
Physical Design and Feedback Control of Hybrid Mechanical Systems		47.041	CMMI-1200321	111,491	
Process Modeling and Enhancements of Laser-Induced Plasma Micro-Machining (LIP-MM)		47.041	CMMI-1335014	96,442	
RAPID: Adaptive management of geotechnical construction in urban areas		47.041	CMMI-1603060	47,683	
RAPID: Confirmation of Structural Dynamics Concepts for Urban Structures Subjected to Adjacent Construction Blasting		47.041	CMMI-1445381	8,618	
REU Site: Research Experience for Undergraduates in Nanoscale Science and Engineering		47.041	EEC-1359004	106,924	
Robust Design to Account for Geometric Imperfections in Small-Scale Structures		47.041	CMMI-1130640	(590)	
Robust Multi-Criteria Optimization With Application to Radiation Therapy		47.041	CMMI-1463489	84,024	
Room Temperature, High Power, Monolithic Optical THz Source Based on Photonic Crystal Distributed Feedback Quantum Cascade Lasers		47.041	ECCS-1231289/002	8,051	
SBIR Phase I: A Large-Area, High-Throughput Desktop Nanoprinter	211	47.041	Agmt 8/31/16 // IIP-1621773	1,177	
Service Systems with Outbound Work and Blending		47.041	CMMI-1436518	93,988	
Shrinkable and Stretchable NanoManufacturing		47.041	CMMI-1069180	1,497	
SNM: Robust Scalable Nanomanufacturing of Photonic Structures		47.041	EEC-1530734	209,222	
Soil Slip Versus Flow Failure in Rain-infiltrated Slopes: Using Principles of Geomechanical Stability to Enhance Spatially Distributed Models for Shallow Landslides		47.041	CMMI-1324834	86,670	
Stretchable Optoelectronics and Applications in Hemispherical Electronic Eye Imagers		47.041	ECCS-0824129	(14,008)	
Structural Dynamics of Polymer and Surfactant Solutions in Planar Extensional Flow Using In Situ X-ray Scattering		47.041	CBET-1336269	36,823	
SusChEM: Using theory-driven design to tailor novel nanocomposite oxides for solar fuel production		47.041	CBET-1438721	140,934	

**Northwestern University**

Schedule of Expenditures of Federal Awards  
For the Year Ended August 31, 2016

Research Type/Federal Grantor/Subagency/Project Title	Pass-through ID	CFDA	Sponsor Award Number	FY16 Expense	Passed to Subrecipients
Synchrotron Studies and Computational Modeling of Flow-Induced Polymer Crystallization in Shear and Extensional Flow		47.041	CMMI-1334719	37,876	
Terahertz source frequency comb based on difference frequency generation from a mid-IR quantum cascade laser		47.041	ECCS-1505409	98,017	
Tunable Continuous Wave THz Source Based on a Room Temperature Quantum Cascade Laser		47.041	ECCS-1306397	231,555	
Two-compartment microfluidic bioreactor with functionalized PEG hydrogels to promote platelet production in culture		47.041	CBET-1265029	76,146	
UNS: Controlling mixing and segregation of granular media using unsteady flows		47.041	CBET-1511450	131,196	
Using Biofluidynamics to Interrogate the Spinal Circuitry Controlling Movements		47.041	CBET-1066575	50,008	
US-Japan Materials Genome (MG) Workshop		47.041	CMMI-1541818	<u>3,203</u>	
				<b>8,985,558</b>	<b>575,626</b>
Accretion and Star Formation Induced by the Galactic Center Supermassive Black Hole Sgr A*		47.049	AST-1517246	84,685	
Algorithms for Nonlinear Nonconvex Optimization under Uncertainty		47.049	DMS-1522747	15,210	
Amenable and recurrent actions of finitely generated groups		47.049	DMS-1352173	83,109	
An Atom-Probe Tomography and Lattice Kinetic Monte Carlo Study of Phase Separation in Ni-Al-Based Alloys from the Atomic Scale Up to Link with Continuum Theories		47.049	DMR-1207539/ Amd 003	148,331	
Analysis on Manifolds		47.049	DMS-1502632-001	128,585	
Architecture of Planetary Systems: Solar and Extrasolar		47.049	AST-1109776	(21)	
Bioengineering Single Crystal Growth		47.049	DMR-1106208/004	(1)	
Bioengineering Single Crystal Growth		47.049	DMR-1508399-002	181,862	
Bio-Resorbable and Eco-Resorbable Electronics Materials, Modeling and Manufacturing	215	47.049	Agmt 01/14/2013//DMR-1242240	82,879	
Biouptake of Mercury: Speciation and Processes at the Cell Surface		47.049	CHE-1308504	98,049	
CAREER: Interfacial Assembly of Soft Layered Materials		47.049	DMR-0955612/001	62,752	
CAREER: Ligand Engineering of Structure and Electronic Function in Complex Metal Oxyfluorides		47.049	DMR-1454688 Amd 002	97,070	74,476
CAREER: Planet Formations in the Age of Kepler		47.049	AST-1352369	31,454	
CAREER: Quantum Phases and Non-Equilibrium Dynamics of Strongly Correlated Photons		47.049	PHY-1055993	73,236	
CAREER: Rescue and Control of Complex Networks of Dynamical Systems: Nonlinear Dynamics Approaches and Applications to Biological and Physical Networks		47.049	DMS-1057128	44,189	

**Northwestern University**

Schedule of Expenditures of Federal Awards

For the Year Ended August 31, 2016

Research Type/Federal Grantor/Subagency/Project Title	Pass-through ID	CFDA	Sponsor Award Number	FY16 Expense	Passed to Subrecipients
CAREER: Synthesis and Studies of One-Dimensional Magnets Supported by Bulky, Redox-Active Benzoquinonoid Bridging Ligands		47.049	DMR-1351959-002	89,640	
CAREER: Synthesis of molecular electronic-spin based qubits enabled by new empirically derived design principles		47.049	CHE-1455017	150,457	
CAREER: Theories for Magnetic Properties of Lanthanide and Actinide Complexes		47.049	CHE-1351598	100,726	
CCI Phase II: Center for Sustainable Nanotechnology	275	47.049	630K475 Amd 1//CHE-1503408	430,336	
CDS&E: Black Holes in Dense Star Clusters		47.049	AST-1312945	87,427	
CEMRI: Multifunctional Nanoscale Material Structures		47.049	DMR-1121262 Amd 009	2,642,212	37,491
"Charge Transfer as a Probe of the Permeability of Organic Adlayers on Colloidal Semiconductor Quantum Dots"		47.049	CHE-1400596	152,335	
Chirality in Aerosol Chemistry		47.049	CHE-1111418/02	59,645	20,344
Coherent and Incoherent Control in Material Systems		47.049	CHE-1465201	155,974	
Cohomological and singularity invariants via Hodge modules and derived equivalences		47.049	DMS-1405516-002	62,613	
Collaborative Research: Modern Oil-based Paints: A Mechanistic Approach to Assessing and Modeling their Curing, Aging and Cleaning		47.049	DMR-1241667	985	
Collaborative Research: CDS&E: FIRE: Physically-Predictive Cosmological Simulations of Galaxy Formation with Resolved Feedback		47.049	AST-1412836	90,906	
Collaborative Research: Computational Thermochemistry of Compounds		47.049	DMR-1309957 Amd 001	60,661	
Collaborative Research: Controlled Disorder and Topological Defects in Magnetically Frustrated Thin Film Metamaterials		47.049	DMR-1507058	21,942	
Collaborative Research: Enhancing Access to Radio Spectrum for Real-time Monitoring and Control		47.049	AST-1547328	60,050	
Collaborative Research: Factorization Homology and the Cobordism Hypothesis		47.049	DMS-1508040-001	90,537	
Collaborative Research: Fluctuating Hydrodynamics of Suspensions of Rigid Bodies		47.049	DMS-1418672	62,621	
Collaborative Research: High-Throughput Quantification of Solid State Electrochemistry for Next Generation Energy Technologies		47.049	DMR-1505103	60,912	
Collaborative Research: Integrated Computational and Experimental Studies of Solid Oxide Fuel Cell Electrode Structural Evolution and Electrochemical Characteristics		47.049	DMR-1506925	150,582	
Collaborative Research: Investigating Structural Dynamic Coherences of Transition Metal Complexes in Photochemical Processes		47.049	CHE-1363007	95,466	
Collaborative Research: Mathematics and Climate Change Research Network		47.049	DMS-0940262/001	61,022	
Collaborative Research: Methods for Stochastic and Nonlinear Optimization		47.049	DMS-1216567	132,011	
Collaborative Research: NanoMine: Data Driven Discovery for Nanocomposites		47.049	DMR-1310292	63,546	
Collaborative Research: Size Effects on Magneto-Mechanics of Ni-Mn-Ga Fibers		47.049	DMR-1207282	87,578	
Collaborative Research: Size-Effect Driven Nanoparticle Ferromagnetism		47.049	DMR-1508323	17,513	

**Northwestern University**

Schedule of Expenditures of Federal Awards  
For the Year Ended August 31, 2016

Research Type/Federal Grantor/Subagency/Project Title	Pass-through ID	CFDA	Sponsor Award Number	FY16 Expense	Passed to Subrecipients
Collaborative Research: Sustainable Energy Pathway: Development of Economically Viable, Highly Efficient Organic Photovoltaic Solar Cells		47.049	CHE-1230217	86,309	
Complexity of Disordered Systems		47.049	DMS-1517864	51,849	
Computational Study of Water/Vapor, Ice/Vapor and Ice/Water Interfaces and their Interaction with Ions and Trace Atmospheric Gases		47.049	CHE-0957653/002	(3,340)	
Conference: Evolution Equations on Singular Spaces		47.049	DMS-1600014	10,500	
"Conference: Manifolds and Groups: Towers of Covers; September 7th - September 12th, 2015, Ventotene, Italy"		47.049	DMS-1522981	26,592	
Construction of the COUPP-500kg Bubble Chamber for Dark Matter Detection	234	47.049	FP052629-C//PHY-1242637	40	
Dark Matter and Neutrino Physics with Cryogenic Detectors		47.049	PHY-1550658-002	131,794	
Design and Synthesis of Non-equilibrium Systems		47.049	CHE-1308107	147,501	
Designing Multi-scale Nanomaterials with Structural Control over Three Orders of Magnitude		47.049	CHE-1058501/002	(5,214)	
Dielectric Effects in Dynamical Self-Assembly of Anisotropic Colloids		47.049	DMR-1310211-001	149,443	
Disorder Effect on Magnetism in Dilute Magnetic Semiconductors		47.049	DMR-1305666	411	
Distribution of Word Maps in Groups		47.049	DMS-1303205	46,473	
DMREF/Collaborative Research: Computationally Driven Targeting of Advanced Thermoelectric Materials		47.049	DMR-1333335	65,203	
DMREF: Simulation-Driven Design of Highly Efficient MOF/Nanoparticle Hybrid Catalyst Materials		47.049	DMR-1334928	355,274	81,052
Doping in Non-Planar Heterostructures		47.049	DMR-1308654 Amd 002	113,637	
Dynamics with a combinatorial flavor		47.049	DMS-1500670	55,473	
EAGER: Towards Atomic-Scale Imaging of Hybrid Nanomaterials.		47.049	DMR-1341391	86,875	
Emphasis Year in Geometric Analysis at Northwestern University		47.049	DMS-1454077	615	
EMPHASIS YEAR IN PROBABILITY THEORY		47.049	DMS-1542289	39,500	
Excitations, Topological Defects and Quantum Transport in Confined Geometries		47.049	DMR-1106315	(9,264)	
Fellows On the Frontier 2015; September - 4, 2015; Evanston, IL		47.049	AST-1518974	1,076	
Geometry and Analysis on Calabi-Yau and Hermitian Manifolds		47.049	DMS-1308988	56,004	
Geometry, Representation theory, and Langlands duality.		47.049	DMS-1402928-002	105,765	
Global Harmonic Analysis		47.049	DMS-1506591-001	87,272	
Global Harmonic Analysis and Quantum Dynamics		47.049	DMS-1206527-001	170	
Gravitational-Wave Astrophysics: Getting Ready for the Advanced LIGO Era		47.049	PHY-1307020/002	157,275	
Hardness and Elasticity of Superhard and Ultrahard Materials		47.049	DMR-1508577	160,598	
High-precision QCD Meets High-performance Computing		47.049	PHY-1520916-001	46,614	
High-throughput Computational Discovery of New Nanoporous Materials for Energy Storage		47.049	DMR-1308799	64,035	
Interest Rate Modeling at the Zero Lower Bound: Applications of Diffusions with Sticky Boundaries		47.049	DMS-1514698	77,097	

**Northwestern University**

Schedule of Expenditures of Federal Awards

For the Year Ended August 31, 2016

Research Type/Federal Grantor/Subagency/Project Title	Pass-through ID	CFDA	Sponsor Award Number	FY16 Expense	Passed to Subrecipients
Intrinsically Acentric High-Response Electro-Optic Multilayers. Materials for High-Speed Optical Switching	33	47.049	RES504561/A1/Mod. 6//DMR-0423914	53,568	
Investigation of High Strain-Rate Deformation and Failure of FCC and BCC Nanostructures		47.049	DMR-1408901/ Amd. 001	106,571	
IRES: Nanomaterials undergraduate Research in Germany (NanoRING)		47.049	IIA-1460031	69,866	
Joint US-Africa Materials Advanced Studies Institute		47.049	DMR-1539724	256,520	36,831
Knots, Sheaves, and Mirrors		47.049	DMS-1406024	55,166	
Linear Partial Differential Equations on Singular Spaces		47.049	DMS-1265568	14,492	
Linear Partial Differential Equations on Singular Spaces		47.049	DMS-1600023	37,704	
Local and Global Chromatic Stable Homotopy Theory		47.049	DMS-1308916	3,515	
Manipulating Multi-Spin Dynamics in Systems Targeting Organic Spintronics		47.049	CHE-1266201	130,530	
Materials World Network: Chemical and Biological Approaches to Sequence Controlled Polymers		47.049	DMR-1108350	35,662	
Mathematical Modeling of Biomembranes		47.049	DMS-1312935	112,800	
Midwest Topology Seminar		47.049	DMS-1413786	6,776	
Moduli Spaces of complex dynamical systems		47.049	DMS-1517080	111,953	
Molecular Ion Entanglement Detection by Single-Molecule Fluorescence		47.049	PHY-1404455-002	132,416	
Molecular Plasmonics: Single Molecule and Ultrafast Surface-Enhanced Raman Spectroscopy		47.049	CHE-1506683	175,274	
Molecular Plasmonics: Single Nanoparticle Assemblies, Single Molecules, and Ultrafast Stimulated Raman		47.049	CHE-1152547/001	(155)	
MRI: Development of a Cryogenic Sample Preparation Instrument (NU CRYOCLUSTER)		47.049	DMR-1229693	51,134	
MRSEC: Center for Nanoscale Science	173	47.049	5204-NU-NSF-0620// DMR-1420620	67,823	
MRSEC: Multifunctional Nanoscale Material Structures		47.049	DMR-0520513	(32,479)	
Multiple-Scale Mathematical Models of Ultra-Short-Pulse Modelocked Lasers		47.049	DMS-1211912	74,616	
Multi-scale Analysis of Lignin for Drop-in Biofuels: From life-cycle assessment of feed-stocks to quantum chemical analysis of pretreatment methods		47.049	CHE-1314063	130,199	
Nanoscale Curvature Effects on the Properties of Anisotropic Nanomaterials		47.049	CHE-1507790	129,624	
NEB: Scalable Sensing, Storage and Computation with a Rewritable Oxide Nanoelectronics Platform	263	47.049	0024232 (011288-1)	(1,137)	
New Directions in Modularity		47.049	DMS-1404620	2,195	
New Lewis Bases for Chemical Catalysis		47.049	CHE-1152010	31,323	
New Stereoselective Fragment Coupling Reactions for Organic Synthesis		47.049	CHE-1361173	96,774	
Nonequilibrium States of Topological Quantum Fluids and Unconventional Superconductors		47.049	DMR-1508730	140,205	
Nonlinear Optical Surface Studies of Iron and its Oxides		47.049	CHE-1464916-001	250,368	
Nonlinear PDEs and complex geometry		47.049	DMS-1406164	59,734	

**Northwestern University**

Schedule of Expenditures of Federal Awards

For the Year Ended August 31, 2016

Research Type/Federal Grantor/Subagency/Project Title	Pass-through ID	CFDA	Sponsor Award Number	FY16 Expense	Passed to Subrecipients
Organization of Charged Molecules in Heterogeneous Media		47.049	DMR-1309027	190,425	
Organo-f-Element Chemistry: Integrated Synthetic, Mechanistic, and Catalytic and Thermochemical Studies		47.049	CHE-1213235	(17,823)	
Organo-f-Element Chemistry: Integrated Synthetic, Mechanistic, and Catalytic and Thermochemical Studies		47.049	CHE-1464488	153,772	
Oxide Surfaces, From Bulk to Nanoparticles		47.049	DMR-1507101	132,038	
Periods and special values of L-functions for unitary groups		47.049	DMS-1602149	15,235	
Plasmon-Exciton Energy Transfer in Metal Nanocavities		47.049	DMR-1306514	184,030	
Predictive Computational Modeling of Two-Dimensional Materials: Defects and Morphologies	255	47.049	3003700315//1507033	61,033	
Preparation, Characterization, and Application of Monodisperse Carbon-Based Nanomaterials		47.049	DMR-1006391-04	(414)	
Program on Large N limit problems in Kahler Geometry		47.049	DMS-1541126	10,000	
QuBBD: Collaborative Research: Advancing mHealth using Big Data Analytics: Statistical and Dynamical Systems Modeling of Real-Time Adaptive m-Intervention for Pain		47.049	DMS-1557722	35,433	
Representation Theory, Integrable Systems, and Quantum Fields: Emphasis Year at Northwestern University 2013-14		47.049	DMS-1342112	7,710	
REU Site: Preparing a Diverse Workforce through Interdisciplinary Astrophysics Research		47.049	AST-1359462-003	83,699	
Ricci Curvature and Geometric Analysis		47.049	DMS-1406259	55,635	
Shape and Dimensional Precision in Polymeric Nanostructures		47.049	DMR-1508731	120,143	
Solid-State Oxides and Oxide-Flourides		47.049	DMR-1307698	157,119	
Solution-Processed Monodisperse Nanoelectronic Heterostructures		47.049	DMR-1505849	160,562	
Spectrum Sharing in the Shadow of Uncertainty: Risk, Incentives and Investment		47.049	AST-1343381	211,156	5,342
Spin Dynamics of Photogenerated Multi-Spin Systems		47.049	CHE-1565925	48,774	
Statics and Dynamics of Spatially and Dimensionally Constrained Oxides		47.049	DMR-1507810	120,894	
Statistical Inference Based on an Integrated Likelihood Function		47.049	DMS-1308009	2,731	
Statistical Mechanics of DNA-Protein Interactions and Chromosome Organization		47.049	DMR-1206868	17,336	
Statistical Methods for Functional Metagenomics Analysis Using Next Generation Sequencing	223	47.049	69026//DMS-1222592	24,263	
Stimuli-Responsive Supramolecular Assemblies		47.049	CHE-1149314 Amd. 002	89,283	
Structures and excited state dynamics of self-assembled photonic structures.		47.049	CHE-1465045	71,241	
Supernova Progenitors, Stellar Remnants, and their Binary Companions		47.049	AST-1517753	10,351	
Surface Structure of Oxides		47.049	DMR-1206320	4,330	
Surface/interface order in liquids with electrostatic correlations: X-ray scattering studies		47.049	DMR-1309589/ Amd 002	142,077	

**Northwestern University**

Schedule of Expenditures of Federal Awards  
For the Year Ended August 31, 2016

Research Type/Federal Grantor/Subagency/Project Title	Pass-through ID	CFDA	Sponsor Award Number	FY16 Expense	Passed to Subrecipients
Surfaces of Secondary Organic Aerosol Particles		47.049	CHE-1607640	41,269	
Synthesis and Coherent Vibrational Laser Spectroscopy of Putative Molecular Constituents in Secondary Organic Aerosol Particles		47.049	CHE-1212692	69,822	
Synthesis and Properties of Complex Crystalline and Glassy Metal Chalcogenides		47.049	DMR-1410169	177,809	
The Center for Chemistry at the Space-Time Limit (CaSTL)	226	47.049	2014-3122//CHE-1414466	396,039	
The Interplay of Ergodic Theory, Additive Combinatorics, and Harmonic Analysis		47.049	DMS-1200971	3,604	
The Massive Black Hole at the Center of the Galaxy and Its Immediate Environment		47.049	AST-1109753/002	25,112	
The Midwest Probability Colloquium		47.049	DMS-1449300	22,707	
Theoretical Design of Multifunctional Interfacial Materials	275	47.049	627K244//DMR-1234096	120,000	
Theory and Computation for Self-Assembly in Soft Matter		47.049	CHE-1147335	33,034	
Topological Surface States and New Phases in Superfluid 3He		47.049	DMR-1103625/004	90,285	
Total Tomography of III-V Non-Planar Heterostructures		47.049	DMR-1611341	5,766	
Toughness and Friction of Model Polyelectrolyte Gels		47.049	DMR-1410968	141,772	
Toward physically-predictive modeling of massive black hole growth and feedback in galaxy formation		47.049	AST-1517491-001	95,284	
UTSA-NU Partnership for Research and Education in Materials Science	269	47.049	H1001-04 NWU - Amd 5//DWR-0934218	(6,317)	
				<b>13,834,919</b>	<b>255,536</b>
CAREER: South Greenland's Holocene Climate History Reconstructed Using Three Paleolimnological Approaches		47.050	PLR-1454734	74,336	
CAREER: The Role of Sulfur in Regulating the Marine Carbon Cycle: Implications for Understanding Oceanic Anoxic Events		47.050	EAR-0955969	39,317	
CMG Workshop on the Formulation of a Multi-Institutional Semi-Virtual Math-Geo Institute in Chicago		47.050	EAR-1025539	377	
CO2 evasion from the Greenland ice sheet		47.050	PLR-1304686/002	89,408	
Collaborative Research: Assessing the Impact of Small, Canadian Arctic River Flows (SCARFs) to the Freshwater Budget of the Canadian Archipelago		47.050	PLR-1304675	136,596	
Collaborative Research: High-resolution Cretaceous terrestrial climate records of temperature, weathering and hydrologic response to hyperthermals in Songliao Basin, China		47.050	EAR-142447	34,606	
Collaborative Research: A Multi-Proxy Approach to Early Miocene Community, Landscape, and Climate Reconstruction, Ethiopian Plateau		47.050	EAR-1053351	30,172	
Collaborative Research: Geophysical Investigation of the Mid-Continent Rift System		47.050	EAR-1148088	9,439	
Collaborative Research: Role of Interfacial Turbulence in Hyporheic Exchange and Fine Particle Dynamics		47.050	EAR-1215898	20,593	

**Northwestern University**

Schedule of Expenditures of Federal Awards  
For the Year Ended August 31, 2016

Research Type/Federal Grantor/Subagency/Project Title	Pass-through ID	CFDA	Sponsor Award Number	FY16 Expense	Passed to Subrecipients
Collaborative Research: Superior Province Rifting Earthscope Experiment (SPREE)		47.050	EAR-0952345	14,417	
Critical Zone Observatory Network for Intensively Managed Landscapes	244	47.050	2013-04254-03 Amd 2//EAR-1331906	77,713	
Doctoral Dissertation Research: Political Ecology of Erosion and Farmstead Abandonment on Hegranses, North Iceland		47.050	PLR-1523025	28,273	
EAGER: FEW: Life cycle comparison of water, energy, nutrient, and carbon requirements of urban and conventional food production strategies		47.050	EAR-1541891	88,513	
EarthCube IA: Collaborative Proposal: Advancing biogeoscience community standards and cyberinfrastructure via Critical Zone domain engagement in synthesis science		47.050	ICER-1540938	82,906	
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	12,760	
Hazards SEES Type 2: From Sensors to Tweeters: A Sustainable Sociotechnical Approach for Detecting, Mitigating, and Building Resilience to Hazards	263	47.050	0036115 (011529-3) // OCE-1331463	119,951	
Hydration State of the Transition Zone and Lowermost Mantle		47.050	EAR-1452344-001	58,374	
INSPIRE Track 1: Earthcasting fluvial systems: Physical, ecological, and biogeochemical dynamics		47.050	EAR-1344280	418,729	319,058
Postdoctoral Research Fellowship for David Vinson: Host Institutional Allowance Request		47.050	EAR-1249916	3,663	
Collaborative Research: Bighorn Basin Coring Project (BBCP) - Targeted Continental Drilling of Paleogene Hyperthermals		47.050	EAR-0958717	15,311	13,950
The Subduction Margin Carbon Cycle: A Preliminary Assessment of the Distribution Patterns of Multicycle Carbon		47.050	OCE-1144483	43,521	
				<b>1,398,975</b>	<b>333,008</b>
A Low-Cost Integrated Agent-based Modeling and Physical Computing Platform		47.070	IIS-1438813	43,333	
AF: Small: Combinatorial Algorithms and Computational Complexity for DNA Self-Assembly		47.070	CCF-1217770	30,176	
BPEC: Computational Thinking in STEM: A Whole-School Model for Broadening Participation and Education in Computing		47.070	CNS-1441041	236,389	
CAP: Collaborative Research: Building a Network to Advance Collaborative Research on Young Children's Learning through Public Media Assets		47.070	IIS-1239599	13,631	
CAREER: Advancing Online Social Support for Older Adults with Disabilities		47.070	IIS-1551574	52,754	
CAREER: Coherent Computational Imaging: Micro Measurements in a Macro World		47.070	IIS-1453192	176,501	

**Northwestern University**

Schedule of Expenditures of Federal Awards  
For the Year Ended August 31, 2016

Research Type/Federal Grantor/Subagency/Project Title	Pass-through ID	CFDA	Sponsor Award Number	FY16 Expense	Passed to Subrecipients
CAREER: Energy-Efficient and Energy-Proportional Silicon-Photonic Manycore Architectures		47.070	CCF-1453853 001	80,686	
CAREER: Robot Learning from Motor-Impaired Instructors and Task Partners	180	47.070	81454 Letter 7/12/16 //IIS-1552706	19,039	
CAREER: Web Information Extraction: Scaling and Integration		47.070	IIS-1351029 003	153,506	
CC-NIE Networking Infrastructure: High Performance Science Network (HPSNet) at Northwestern University		47.070	ACI-1341013	117,092	
CGV: Medium: Collaborative Research: Visualizing Comparisons		47.070	IIS-1162067 Amd 3	24,402	
CHS: Large: Collaborative Research: TextureShop: Tools for the Composition and Display of Virtual Texture		47.070	IIS-1518602	227,023	
CHS: Medium: Collaborative Research: Understanding online creative collaboration over multidimensional networks		47.070	IIS-1514427	60,258	
CHS: Small: Coordination of Opportunistic Actions to Produce Globally Effective Behaviors for Physical Crowdsourcing		47.070	IIS-1618096	57,393	
CHS:Small: Robust Interactive Audio Source Separation		47.070	IIS-1420971	180,444	
CI-EN: Collaborative: Run Your Research with Redex		47.070	CNS-1405756	251,619	
CI:Small: Many-user Information Theory: A New Paradigm		47.070	CCF-1423040	138,539	
CINET	282	47.070	478455-19980//ACI-1032677/005	7,176	
Collaborative Research: Chameleon: A Large-Scale, Reconfigurable Experimental Environment for Cloud Research		47.070	CNS-1419138 (Inc.1550342)	118,909	
Collaborative Research: Designing Digital Rails to Foster Scientific Curiosity around Museum Collections		47.070	IIS-1550051	161,663	
Collaborative Research: PERSONALIZED BENCHMARKS FOR HPC APPLICATIONS		47.070	ACI-1535112	81,112	
Collaborative Research: Responses of the Rodent Vibrissal-Trigeminal System to Air Currents		47.070	IIS-1208118	96,870	
Collaborative Research: SI2-SSI: Scalable Infrastructure for Enabling Multiscale and Multiphysics Applications in Fluid Dynamics, Solid Mechanics, and Fluid-Structure Interaction		47.070	ACI-1450374	36,330	
Collaborative Research: Understanding Climate Change: A Data Driven Approach		47.070	CCF-1029166/003	161,260	
CPS: Large: Cybernetic Interfaces for the Restoration of Human Movement Through Functional Electrical Stimulation	181	47.070	81838-Amd 8 // CNS-0932263	12,626	
CPS: Synergy: Collaborative Research: Learning Control Sharing Strategies for Assistive Cyber-Physical Systems	180	47.070	CC# 81394 CL 4811 // 1544741	32,599	
CPS: Synergy: Collaborative Research: Mutually Stabilized Correction in Physical Demonstration		47.070	CNS-1329891	101,722	
CRII: CHS: Remote Paper Prototype Testing for Mobile Applications		47.070	IIS-1464315	11,401	

**Northwestern University**

Schedule of Expenditures of Federal Awards  
For the Year Ended August 31, 2016

Research Type/Federal Grantor/Subagency/Project Title	Pass-through ID	CFDA	Sponsor Award Number	FY16 Expense	Passed to Subrecipients
DIP: Collaborative Research: CRAFT: An Online Learning Platform for Scaffolding the Crowd Feedback Loop for Design Innovation Education		47.070	IIS-1530837	2,284	
DIP: Digital Studios for Social Innovation Networks		47.070	IIS-1530833	257,420	
DIP: Modeling in Levels		47.070	IIS-1441552	442,597	
EAGER: Scalable Big Data Analytics		47.070	IIS-1343639	119,352	
EAGER: Understanding Online Communication for Older Adults with Late-Life Vision Loss		47.070	IIS-1533340	76,246	
EAGER: Collaborative Research: Model based Autonomic Cloud Computing Software Technology		47.070	CNS-1265347	17,967	
EXP: Advancing Early STEM Learning through Haptic Feedback Displays		47.070	IIS-1522921	134,992	
EXP: Augmenting Household Technologies for Learning and Whole Family Participation: Heating and Cooling Control as an Exploratory Case		47.070	IIS-1123574	50,161	
EXP: Collaborative Research: Engaging Interdisciplinary Students in Innovation Education Through Crowd-Based Technology		47.070	IIS-1217225	50,057	
EXP: Digital Lofts: Online Learning Environments for Real-World Innovation		47.070	IIS-1320693 002	17,856	5,000
EXP: Transforming High School Science via Remote Online Labs		47.070	IIS-1216389	33,416	5,350
Future Technology to Preserve College Student Health and Foster Wellbeing (StudentHealth)		47.070	IIS-1545751	4,981	
GENI Spiral 4: Prototype GENI Multi-Services Network Exchange (GMNE)	20	47.070	BBN Ref ID 14303 PO #9500012297//CNS-1346688	10,710	
HCC: Medium: Collaborative Research: Force Feedback for Fingertips		47.070	IIS-1302422	171,822	
HCC: Medium: Collaborative Research: Surface Haptics via Tractive Forces		47.070	IS-0964075-005	(22)	
HCC: Small: Building Audio Interfaces with Crowdsourced Concept Maps and Active Transfer Learning		47.070	IIS-1116384	3,095	
HCC-SMALL: A Joint Action Approach to Understanding and Supporting Interpersonal Attention In Virtual Organizations		47.070	IIS-1217143/005	133,001	
ICES: Large: Collaborative Research: Towards Realistic Mechanisms: Statistics, Inference, and Approximation in Simple Bayes-Nash Implementation		47.070	CCF-1101717	79,446	
ICES: Small: Collaborative Research: Understanding the Roles of Intermediaries in Matching Markets		47.070	CCF-1216095	7,912	
ICES: SMALL: Mechanism Design With Information-Sensitive Agents		47.070	CCF-1216006	74,793	
III: Large: Collaborative Research: Moving Objects Databases for Exploration of Virtual and Real Environments		47.070	IIS-1213038	49,725	
III: Small: Inferring First Movers in Large-Scale Network Games	255	47.070	3003577874//IIS-1538827	83,291	
InquirySpace: Technologies in Support of Student Experimentation	48	47.070	243-02.01//IIS-1147621	3,057	
INSPIRE: Glitch Zoo: Teaming Citizen Science with Machine Learning to Deepen LIGO's View of the Cosmos		47.070	IIS-1547880-002	197,336	105,701
InstaGENI: A Meso-Scale National Distributed Facility With International Extensions for the Global Environment for Network Innovation	95	47.070	IIL-RG-03/ Mod. 2	21,776	

**Northwestern University**

Schedule of Expenditures of Federal Awards  
For the Year Ended August 31, 2016

Research Type/Federal Grantor/Subagency/Project Title	Pass-through ID	CFDA	Sponsor Award Number	FY16 Expense	Passed to Subrecipients
IRNC: RXP: StarLight SDX - A Software Defined Networking Exchange for Global Science Research and Education		47.070	ACI-1450871	472,241	144,512
MRI: Equipment Development: Bimanual Robotic Manipulation and Sensory Workspace		47.070	CNS-1229566	71,975	
NeTS: Small: A Dual-Objective Platform for Internet Experimentation		47.070	CNS-1218287	15,520	
NeTS: Small: Endpoint User Profile Control		47.070	CNS-1319086	128,985	
NeTS: Small: Mashup Content Harvesting for an Open Internet		47.070	CNS-1526052	56,525	
NeTS:Large: Collaborative Research: Context-Driven Management of Heterogeneous Sensor Networks		47.070	CNS-0910952/005	8,533	
NetSE: Large: Collaborative Research: Contagion in Large Socio-Communication Networks		47.070	CNS-1010904	8,995	
NetSE: Medium: Collaborative Research: Auditing Internet Content for Credibility, Fairness, and Privacy		47.070	CNS-1064595	84,916	
NRI: Autonomous Synthesis of Haptic Languages		47.070	IIS-1426961	95,988	
NRI: Electrosense imaging for underwater telepresence and manipulation		47.070	IIS-1427419-005	799,890	420,057
NRI: Small: Modeling, Quantification, and Optimization of Prosthesis-User Interface	180	47.070	CC: 80793 2953//IIS-1317379	88,256	
RI: Doctoral Student Workshop at the Fourth Annual Conference on Advances in Cognitive Systems		47.070	IIS-1637643	8,552	
RI: Medium: Collaborative Research: Learning Representations of Language for Domain Adaptation		47.070	IIS-1065270	8,886	
RI: Medium: Planning and Control for Dynamic Robotic Manipulation		47.070	IIS-0964665	31,226	
RI: Small: Contextual Mining and Learning for Video Scene Understanding		47.070	IIS-1217302/001	105,095	
RI:Small:Dynamic In-Hand Robotic Manipulation		47.070	IIS-1527921	77,120	
SaTC: STARSS: ICM: Invariant Carrying Machine for Hardware Assurance		47.070	CNS-1441695	35,012	
SHF: Medium: Collaborative Research: Semantics Engineering for Scripting Languages		47.070	CCF-1064474	(180)	
SHF: Small: Collaborative Research: Designing a Patient-Oriented Prescription Language: An Executable Specification for a Medical Algorithm for Gestational Diabetes Mellitus		47.070	CCF-1219070/001	39,170	
SHF: Small: Collaborative Research: Designing a Programming Language for Patient-Oriented Prescriptions		47.070	CCF-1526109	95,511	
SHF: Small: Integrating Compiler and Architecture Design to Boost Timing Speculation		47.070	CCF-1116610	90,075	
SHF: Small:Thermal Monitoring in 3D Integrated Circuits with Bimetallic Thin Film Thermocouples		47.070	CCF-1422489/001	118,030	
SHF:Medium:Collaborative Research: Compute on Data Path:Combating Data Movement in High Performance Computing	213	47.070	21P352-02//CCF-1409946	122,114	68,743

**Northwestern University**

Schedule of Expenditures of Federal Awards  
For the Year Ended August 31, 2016

Research Type/Federal Grantor/Subagency/Project Title	Pass-through ID	CFDA	Sponsor Award Number	FY16 Expense	Passed to Subrecipients
SHF:Medium:Collaborative Research: Scalable Algorithms for Spatio-temporal Data Analysis		47.070	CCF-1409601	43,499	
SoCS: Leveraging Shared Social Interest in a Content Centric Internet		47.070	CNS-1211375	2,352	
TWC SBE: Medium: Collaborative: Incentive Compatible Wireless Security		47.070	CNS-1314620	106,562	
TWC: Medium: Collaborative: Neuroscience Meets Computer Security: Designing Systems Secure Against Coercion Attacks		47.070	CNS-1228357	78,565	
TWC: TTP Option: Medium: Collaborative: Identifying and mitigating trust violations in the smartphone ecosystem		47.070	CNS-1408790	125,902	
Type 1: Casting a Wide Net: Applied Computational Thinking		47.070	CNS-1138461	29,014	
XPS: EXPL: CCA: Merging Parallel Run-times and Operating Systems		47.070	CCF-1533560	19,924	
XPS: FULL: FP: Design and Synthesis of New Energy-efficient Self-healing Computing Electronics with Real-time Configurability		47.070	CCF-1533656	52,071	
				<b>7,748,048</b>	<b>749,363</b>
Biophysical Studies of Metalloenzymes		47.074	MCB-1118613-003	191,587	
Biophysical Studies of Metalloenzymes		47.074	MCB-1515981	142,077	
CEIN: Predictive Toxicology Assessment and Safe Implementation of Nanotechnology in the Environment	228	47.074	0521 G RA112-005// DBI-126	66,993	
Collaborative Research: A New Twist on Muscle Contraction		47.074	IOS-1456623	95,807	
Collaborative Research: Bilateral BBSRC-NSF/BIO: Synthetic Biology for Lignin Utilization		47.074	MCB-1614953	1,069	
Collaborative Research: Exploiting the syntegron technology platform for assembly and optimisation of complex genetic ensembles		47.074	MCB-1341414	130,477	
Collaborative Research: Glycoengineering Without Borders: Bacterial Cell-Free Glycoprotein Synthesis		47.074	MCB-1413563	12,567	
Collaborative Research: IDBR: Type A: The Nanosizer: A New Tool For the Photochemical Fabrication of Bioactive Nanoarrays		47.074	DBI-1353682	117,623	
CRCNS: Functional imaging and computational models of place field integration in pyramidal cell dendrites		47.074	IOS-1516235	220,020	
Dissecting the anatomy of regulatory divergence		47.074	IOS-1708518	19,472	
IDBR: Development of Higher Eigenmode Ultrasound Bioprobe for Sub-Cellular Biological Imaging		47.074	DBI-1256188	72,914	
IDBR: Type A: Directly Integratable Photoacoustic Microscopy with Established Optical Microscopy for Comprehensive Sub-cellular Biological Imaging		47.074	DBI-1353952/002	145,097	
Investigation of the Yeast Prion [SWI+]		47.074	MCB-1122135	127,152	
Micromechanical Analysis of Chromosome Structure		47.074	MCB-1022117	186,872	
Regulation of Host Colonization Specificity		47.074	IOS-1456963	183,439	

**Northwestern University**

Schedule of Expenditures of Federal Awards  
For the Year Ended August 31, 2016

Research Type/Federal Grantor/Subagency/Project Title	Pass-through ID	CFDA	Sponsor Award Number	FY16 Expense	Passed to Subrecipients
Regulation of Nuclear Receptor Function during Drosophila Development	249	47.074	Z4573001//IOS-1457145	104,029	
Reticulospinal Execution of Innate Decision-Making		47.074	IOS-1456830	185,984	
The Response of Primary Mesenchyme Cells to VEGF		47.074	IOS-1456837	55,639	
The Vibrissotactile Natural Scene		47.074	IOS-1558068	6,926	
Understanding the Mechanism of Import for Bacterial Transporters		47.074	MCB-1121872	114,805	
				<b>2,180,549</b>	
A Cultural and Linguistic Anthropological Analysis of Youth Language Socialization		47.075	BCS-1323769	30,471	
Approximating Large Contests and other Auction-Like Games: a Mechanism Design Approach		47.075	SES-1325968	69,357	
Assessing Evidence-Based Psychotherapy		47.075	SES-1535023	84,752	
Biological links between rhythm and reading		47.075	BCS-1430400	174,072	
CAREER: Comparative Statics and Dynamic Models		47.075	SES-1151410/003	48,165	
CAREER: Health, Environmental Issues, and Price Effects in Developing Countries		47.075	SES-1156941/004	44,297	
CAREER: Individuation in Visual Cognition		47.075	BCS-1056730 006	184,990	
CAREER: Social Networks, Labor Markets and Agricultural Technology Adoption in Developing Countries		47.075	SES-1254380/002	45,953	
Chronological Change In Domestic Economy And Provisioning Strategy		47.075	BCS-1419672	51,905	
Clausal Ellipsis, Its Structure and Online Processing		47.075	BCS-1323245	101,152	
Collaborative Research: An Empirical Study of Broadband Internet Service		47.075	SES-1324851	48,165	
Collaborative Research: An Investigation Into Long Term Human Coastal Adaptation		47.075	BCS-1530345	15,607	
Collaborative Research: Dynamic Mechanisms without Transfers		47.075	SES-1530608	83,309	
Collaborative Research: Econometric Methods for Models with Clustered Data and Covariate-Adaptive Randomization		47.075	SES-1530534	67,722	
Collaborative Research: Equilibria in Health Exchanges: Adverse Selection, Reclassification Risk, and Dynamic Contracting		47.075	SES-1260949	96,806	48,640
Collaborative Research: Family Structure and Inequality in Contemporary America		47.075	SES-1459631	55,087	
Collaborative Research: Media Characters: The Unhidden Persuaders in Food Marketing to Children		47.075	BCS-1251345	41,610	
Collaborative Research: Mind Mapping Consumers and Activists' Response to NGO-Corporate Partnerships		47.075	SES-1359610 001	68,664	7,532
Collaborative Research: NCS-FO: Sleep's role in determining the fate of individual memories		47.075	BCS-1533512	64,650	
Consequences and Context of Stunting in the Bolivian Amazon	241	47.075	RR104-341/S000853//BCS-1519120	4,088	
Constructions of Traditional Medicine during Decolonization and the Global Cold War		47.075	SES-1456984	102,897	

**Northwestern University**

Schedule of Expenditures of Federal Awards  
For the Year Ended August 31, 2016

Research Type/Federal Grantor/Subagency/Project Title	Pass-through ID	CFDA	Sponsor Award Number	FY16 Expense	Passed to Subrecipients
Dissertation Grant: Medical Technologies and Social Identities		47.075	SES-1556591	5,585	
DNA Examiners: Judgment and Influence		47.075	SES-1356899	84,554	
Doctoral Dissertation Improvement Award: The Effect of War On The Transformation of Social Hierarchies		47.075	BCS-1546972	19,530	
Doctoral Dissertation Improvement Award: The Role of Heritage in Community Organization		47.075	BCS-1630141	4,924	
Doctoral Dissertation Improvement Grant: A Diachronic Investigation of Farmstead Labor Relations		47.075	BCS-1355082	3,402	
Doctoral Dissertation Improvement: Conceptualizing the Adaptive Significance of Brown Adipose Tissue in Cold Climates		47.075	BCS-1455804	13,946	
Doctoral Dissertation Research in DRMS: Who's at Stake? Nonhuman Agency Concepts and Cultural Resource Conflict Among Indigenous and Mainstream Actors in Panama		47.075	SES-1427035	4,938	
Doctoral Dissertation Research in Economics: Essays on the Self-Selection and Productivity of Migrants		47.075	SES-1425598	7,199	
Doctoral Dissertation Research on the Role of Domain-General Executive Functions in Language Production: Resolving conflict in lexical selection		47.075	BCS-1420820	3,458	
Doctoral Dissertation Research: Exclusion and the Social Construction of Citizenship		47.075	BCS-1424025	13,230	
Doctoral dissertation research: Morphosyntactic mismatch in gapping		47.075	BCS-1348677	649	
Doctoral Dissertation Research: Population Shifts and Suburban Governance		47.075	BCS-1528569	15,910	
Doctoral Dissertation Research: Socioeconomic Variance in Labor and Family Responses to Globalization		47.075	BCS-1357481	20,348	
Doctoral Dissertation Research: The Intergenerational Consequences of Incarceration		47.075	SES-1628126	3,669	
Doctoral Dissertation Research: The Wealthy and Stratification Ideologies		47.075	SES-1409232	3,949	
Dynamic, Behavioral, and Multi-Agent Persuasion Mechanisms		47.075	SES-1427200	87,410	
Early environments, epigenetics, and inflammation during pregnancy		47.075	BCS-1440564	120,252	75,000
Econometric Tools for Analysis of Derivatives Data		47.075	SES-1530748	93,969	
Engineering Children's Learning		47.075	BCS-1122712	25,195	
INSPIRE: Gradient Symbolic Computation	122	47.075	2001990798 // BCS-1344269	96,622	
Investigating the Origin and Development of Analogical Processing		47.075	BCS-1423917	132,107	
Latino Suburbia: Examining the Politics of Race and the New Immigration		47.075	BCS-1127461	(280)	
Longitudinal Study of Human Male Reproductive Ecology: Biological and Behavioral Responses to Changing Social Roles and Impacts on Offspring and Relationship Quality		47.075	BCS-1317133	66,372	2,164
Manipulating and classifying memory processing during sleep		47.075	BCS-1461088 001	120,809	20,100
Matching Design: Mediated Bundling, Experimentation, and Observational Learning		47.075	SES-1530798	79,786	

**Northwestern University**

Schedule of Expenditures of Federal Awards  
For the Year Ended August 31, 2016

Research Type/Federal Grantor/Subagency/Project Title	Pass-through ID	CFDA	Sponsor Award Number	FY16 Expense	Passed to Subrecipients
Mechanism Design with Costly Verification		47.075	SES-1227434	48,165	
NCRN-SN: Census Bureau Data Programs as Statistical Decision Problems		47.075	SES-1129475	388,680	
NSF Intergovernmental Personnel Act (IPA) Assignment - Fay Lomax Cook		47.075	SBE-1451416-003	291,313	
Partial Identification of State Dependence		47.075	SES-1530538	78,496	
CAREER: The Impact of Interorganizational Network Evolution on Outcomes for Nongovernmental Organizations (NGOs)		47.075	SES-1264417/003	43,871	
Price Discrimination and Competition in Many-to-Many Matching Markets		47.075	SES-1156077	21,879	
Spatial Intelligence Learning Center	210	47.075	330161-18110-7343-Amd 5//SMA-1041707	795,227	
Standard Research Grant: A Comparative Study of ICTs and Literacy Attainment		47.075	SES-1331060 Amd 2	53,518	34,155
The Downside of Social Mobility: Status-Based Identity Uncertainty, Academic Achievement & Psychological Well-Being		47.075	BCS-1531016	78,167	
The Effect of School Finance Reforms on the Distribution of Spending, Academic Achievement and Adult Outcomes		47.075	SES-1324778	28,771	
The evolutionary biology of telomeres in the Philippines	274	47.075	UWSC8477 // BCS-1519110	6,699	
The International Cognitive Ability Resource		47.075	SMA-1419324	81,845	
The LIFE Center: Learning in Informal and Formal Environments	274	47.075	UWSC5427 Amd 7//SMA 0835854-08	95,491	
Time-Sharing Experiments for the Social Sciences (TESS): Proposal for Renewed Support, 2012-2015		47.075	SES-1227179	703,309	406,377
Topics in the Organization of Markets		47.075	SES-1123595	876	
				<b>5,227,559</b>	<b>593,968</b>
CAREER: Blocks, Stickers, and Puzzles: Rethinking Computational Literacy Experiences in Informal Environments		47.076	DRL-1451762 002	93,840	
Collaborative Proposal: Learning Linkages: Integrating Data Streams of Multiple Modalities and Timescales		47.076	DRL-1418020	88,858	
Collaborative Research to Understand the Role of Culture, Identity, Epistemology and Bi-Cultural Efficacy in American Indian Educational and Professional Success in STEM		47.076	DRL-1251516	89,862	
Collaborative Research: Advancing Early STEM Learning Opportunities Through Tinkering and Reflection		47.076	DRL-1515788	62,540	
Collaborative Research: Cognitive and Neural Indicators of School-based Improvements in Spatial Problem Solving.		47.076	DRL-1420599	65,181	
Collaborative Research: Engaging Introductory Astronomy Students in Authentic Research through Citizen Science		47.076	DUE-1525725	97,138	43,339
Collaborative Research: IUUSE: EHR - Enhancing and Expanding Experiential Learning Modules across Disciplines and Institutions		47.076	DUE-1504952	45,390	

**Northwestern University**

Schedule of Expenditures of Federal Awards  
For the Year Ended August 31, 2016

Research Type/Federal Grantor/Subagency/Project Title	Pass-through ID	CFDA	Sponsor Award Number	FY16 Expense	Passed to Subrecipients
Collaborative Research: Leveraging Matched Administrative Datasets to Improve Educational Practice and Long Run Life Outcomes: Toward Building a National Interdisciplinary Network		47.076	DRL-1244752	86,924	
Collaborative Research: Using Educational DVDs to Enhance Young Children's STEM Education		47.076	DRL-1252121	154,185	
Enabling Modeling and Simulation-Based Science in the Classroom: Integrating Agent-Based Models, Real World Sensing and Collaborative Networks		47.076	DRL-1020101/002	22,640	6,784
Findings from Empirical Within Study Comparisons About the Role of Pretests and Proxy Pretests in Adjusting for Selection Bias in STEM Quasi-Experiments		47.076	DRL-1228866	204,883	191,258
FUSE Studios: A New, Interest-Driven Model for Engaging Youth In STEM and Career Development Through Challenges and Partnership with Industry		47.076	DRL-1433724/001	417,663	
FUSE Studios: An Alternative Infrastructure for STEM Learning and Interest Development		47.076	DRL-1348800	446,759	36,309
Graduate Research Fellowships Program (GRFP)		47.076	DGE-1324585-008	5,643,521	
Graduate Research Fellowships Program (GRFP-GROW)		47.076	BAD SETUP DGE-1324585	(22,775)	
I-Corps L: nScope- a Lab for Every Laptop		47.076	DUE-1644555	2,518	
Improving the Generalizability of Findings from Educational Evaluations		47.076	DRL-1118978	66,529	47,774
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	164,085	64,497
Learning Ethnographies of New Engineers: A New Approach to Understanding the Transition from School to Work		47.076	DRL-1252372	583,118	294,902
Learning Evolution through Model-Based Inquiry: Supporting Agent-Based Modeling in STEM Classrooms		47.076	DRL-1109834	194,382	39,286
Learning Labs: Using Videos, Exemplary STEM Instruction and Online Teacher Collaboration to Enhance Elementary Math and Science Practice and Classroom Discourse	208	47.076	2015-02//1417757	97,194	
Methods to Protect Privacy in State Longitudinal Data Systems Research Files	235	47.076	5968-NU//DGE-1437953	74,297	
New GK-12: Reach for the Stars: Computational Models for Teaching and Learning in Physics, Astronomy and Computer Science		47.076	DGE-0948017/006	39,688	13,514
NRT-DESE: Training in Data-Driven Discovery - From the Earth and the Universe to the Successful Careers of the Future		47.076	DGE-1450006-001	253,909	
Supporting Scientific Practices in Elementary and Middle School Classrooms		47.076	DRL-1020316 Amd 005	338,664	245,788
The CIRTL Network: 25 Research Universities Preparing a National Faculty to Advance STEM Undergraduate Learning	275	47.076	490K851 // DUE-1231286 // Amd 2	48,045	
				<b>9,359,038</b>	<b>983,451</b>
Collaborative Research: Response of the Northwestern Greenland Cryosphere to Holocene Climate Change		47.078	ARC-1108306	<b>2,758</b>	

**Northwestern University**

Schedule of Expenditures of Federal Awards  
For the Year Ended August 31, 2016

Research Type/Federal Grantor/Subagency/Project Title	Pass-through ID	CFDA	Sponsor Award Number	FY16 Expense	Passed to Subrecipients
IRES: US-Dutch Research Collaboration in Cultural Heritage Science		47.079	IIA-1460143	<b>52,681</b>	
Collaborative Research: SCC-SBE: Research Coordination Network on Leveraging Computational Social Science for Understanding Virtual Organizations		47.080	OCI-1244747	<b>41,781</b>	
ARRA-ARI: Enhancing Optical Communications Infrastructure for e-Science		47.082	OIA-0963095	(1,000)	
ARRA-CAREER: Infomechanics - The Interdependence of Animal Information Acquisition and Mechanics		47.082	IOS-0846032	(10)	
ARRA-CAREER: Resource Attainment and Social Context in Negotiating Illness Among Marginalized Populations		47.082	SES-0847809	<u>10,837</u> <b>9,827</b>	
PIRE: Integrated Computational Materials Engineering for Active Materials and Interfaces in Chemical Fuel Production	244	47.083	2015-02361-02//1545907	<b>84,863</b>	
<b>National Science Foundation Total</b>				<b>48,926,556</b>	<b>3,490,952</b>
U.S. Environmental Protection Agency					
Development of a Yeast Based Arsenic Biosensor for the Rapid and Reliable Testing of Groundwater		66.514	FP-91761101-0	19,648	
Reducing Human Health Risks from Water-Borne Diseases: A Model Incorporating the Physical, Chemical, and Microbial Processes of Microbial Pathogen Transport in Streams		66.514	FP-91729001-3	(40)	
<b>U.S. Environmental Protection Agency Total</b>				<b>19,608</b>	
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	<u>324,534</u>	<u>95,770</u>
<b>United States Nuclear Regulatory Commission Total</b>				<b>324,534</b>	<b>95,770</b>
Vietnam Education Foundation					
Vietnam Education Foundation Fellowship		85.802	F10024M	1,879	
Vietnam Education Foundation Fellowship		85.802	Agmt 2/19/13	75	
Vietnam Education Foundation Fellowship - Hoang Thai Nguyen		85.802	Letter 10/14/14	<u>25,250</u>	
<b>Vietnam Education Foundation Total</b>				<b>27,204</b>	
<b>TOTAL RESEARCH AND DEVELOPMENT CLUSTER</b>				<b>433,620,043</b>	<b>66,575,546</b>

**Northwestern University**

Schedule of Expenditures of Federal Awards  
For the Year Ended August 31, 2016

Research Type/Federal Grantor/Subagency/Project Title	Pass-through ID	CFDA	Sponsor Award Number	FY16 Expense	Passed to Subrecipients
Student Aid Cluster					
Department of Education					
Federal SEOG 2014-2015		84.007	P007A141246	194,798	
Federal SEOG 2015-2016		84.007	P007A151246	<u>2,186,241</u>	
				<b>2,381,039</b>	
Federal Work-Study 2014-2015		84.033	P033A141246	14,279	
Federal Work-Study 2015-2016		84.033	P033A151246	3,285,295	
Federal Work-Study 2016-2017		84.033	P033A161246	58,773	
Federal Work-Study Administrative Cost Allowance		84.033		<u>2,271</u>	
				<b>3,360,618</b>	
Federal Perkins Loans - Outstanding as of 9/1/15		84.038		40,167,607	
Federal Perkins Loans - New Loans Issued during FY16		84.038		4,788,050	
Federal Perkins Loans Administrative Cost Allowance		84.038		<u>460,000</u>	
				<b>45,415,657</b>	
Federal Pell Grant 2014-2015		84.063	P063P141371/Pell Grant	(407)	
Federal Pell Grant 2015-2016		84.063	P063P151371	<u>5,283,181</u>	
				<b>5,282,774</b>	
Federal Direct Loan Program 2014-2015		84.268	P268K151371	(78,631)	
Federal Direct Loan Program 2015-2016		84.268	P268K161371	131,265,646	
Federal Direct Loan Program 2016-2017		84.268	P268K171371	<u>5,587,485</u>	
				<b>136,774,500</b>	
<b>Department of Education Total</b>				<b><u>193,214,588</u></b>	
Department of Health and Human Services					
Health Professions Student Loans including Primary Care Loans					
Outstanding Loans as of 9/1/15		93.342	P007A141246	224,020	
New Loans Issued during FY16		93.342	P007A151246	8,582	
Administrative Cost Allowance		93.342	P007A151246	<u>0</u>	
<b>Department of Health and Human Services Total</b>				<b><u>232,602</u></b>	
<b>TOTAL STUDENT AID CLUSTER</b>				<b>193,447,190</b>	

**Northwestern University**

Schedule of Expenditures of Federal Awards  
For the Year Ended August 31, 2016

Research Type/Federal Grantor/Subagency/Project Title	Pass-through ID	CFDA	Sponsor Award Number	FY16 Expense	Passed to Subrecipients
<b>Other Programs</b>					
Agency for International Development					
Agency for International Development					
In silico and In vitro evaluation of Long Acting Contraceptive Delivery Systems	62	98.001	APSA-14-011//AID-OAA-A-10-00068	67,816	
Promoting Rule of Law in Georgia	63	98.001	AID-114-A-15-00004	<u>33,904</u>	
				<b>101,720</b>	
Juventud sin Prisión	182	98.U01	01/19/16//AID-523-A-15-00010	<u>35,396</u>	
<b>Agency for International Development Total</b>				<b>137,116</b>	
Department of Commerce					
National Institute of Standards and Technology					
Development of Roadmap and Consortium for Innovation in Sheet Metal Forming		11.609	70NANB14H056	<b>137,127</b>	<b>17,905</b>
Enhancing Teaching of Standards and Standards Development In U.S. Universities	56	11.U02	Subcontract Agmt 1/4/16	<b>14,906</b>	
United States Patent and Trademark Office					
Research Conference on Innovation Economics 2015		11.900	IO 10IAG1500130	<b>6,036</b>	
Research Conference on Innovation Economics 2016		11.U03	USPTO MOA No. 16147009-0000-000	<u>45,465</u>	
<b>Department of Commerce Total</b>				<b>203,534</b>	<b>17,905</b>
Department of Defense					
Army					
Network Frontier Workshop 2015		12.431	W911NF-16-1-0012	<u>22,000</u>	
<b>Department of Defense Total</b>				<b>22,000</b>	
Department of Education					
Jacob K Javits Fellowship Program (Wilhoit)		84.170	P170B100013-14-11	52,239	
Jacob K. Javits Fellowship for Robin Hoecker		84.170	P170B110018 14 & 15	<u>48,568</u>	
				<b>100,807</b>	
The Mothers and Babies Course: A Reality Management Approach	288	84.181	Agr. 03/01/2016 / H181A14018	<b>15,888</b>	
Online Curriculum Consortium for Accelerating Middle School (OCCAMS)	167	84.206	Award 5/27/16 // S206A150004	<b>152,008</b>	

**Northwestern University**

Schedule of Expenditures of Federal Awards  
For the Year Ended August 31, 2016

Research Type/Federal Grantor/Subagency/Project Title	Pass-through ID	CFDA	Sponsor Award Number	FY16 Expense	Passed to Subrecipients
Advancing and Scaling Science Education's New Terrain (ASSENT): Developing Systemic Leadership in Connecticut	49	84.366	Agmt 5/2/16// 648-100 12060-21592-2016-84158-17000	<u>19,229</u>	
<b>Department of Education Total</b>				<b>287,932</b>	
Department of Health and Human Services Administration for Children and Families Permanency Innovations Initiative	101	93.U04	0461569096	<b>205,304</b>	
Permanency Innovations Initiative	101	93.648	Contract #0461569094	(10,454)	
Permanency Innovations Initiative	101	93.648	0461569095	<u>3,826</u>	
				<b>(6,628)</b>	
Centers for Disease Control and Prevention Engaging Indigenous Organizations to Sustain and Enhance Comprehensive Clinical Services for the Prevention, Care and Treatment of NIH/AIDS in the Federal Republic of Nigeria	3	93.067	Sub under U2GGH00924-04	<b>110,537</b>	
Evaluating the Chicago Public Schools (CPS) Promoting Adolescent Health Through School-Based HIV/STI Prevention and School-Based Surveillance Initiative	243	93.079	12-0604-PRC	84	
Promoting Adolescent Health Through School-Based HIV-STD Prevention and School-Based Surveillance	40	93.079	15-0303-PRC2//5U87PS004162-03	<u>19,473</u>	
				<b>19,557</b>	
Hepatitis C Community Alliance for Testing and Treatment in Chicago (HepCCATT)	234	93.270	FP058209-B//U51PS004607	<b>147,808</b>	
Evaluation Center Extension to Evaluate PrEP Implementation and Data to Care Services	39	93.940	42045/236320//U62PS005021	<b>4,333</b>	
Describing optimal communication features of collaborative relationships between community pharmacies and HIV primary care providers to obtain maximal impact on individual and community health outcomes	261	93.941	RF0074-2013-001/U65PS004275	<b>9,180</b>	
The HIV Outpatient Study (HOPS) Activity to Abstract Data from Persons Receiving Ambulatory Care for HIV Infection in the United States (the "Prime Agreement")	37	93.U05	Agri. 11/19/2015 // 200-2015-63931	<b>178,803</b>	

**Northwestern University**

Schedule of Expenditures of Federal Awards  
For the Year Ended August 31, 2016

Research Type/Federal Grantor/Subagency/Project Title	Pass-through ID	CFDA	Sponsor Award Number	FY16 Expense	Passed to Subrecipients
Centers for Medicare & Medicaid Services Great Lakes Practice Transformation Network	107	93.638	5345/L1CMS331444-01-00	<b>1,494,856</b>	<b>958,393</b>
FL-IL CHIPRA AHCA Contract No. MED124	90	93.767	agr. 12/01/2013//1Z0C30548-01-00	<b>142,696</b>	<b>39,284</b>
Health Resources and Services Administration ILPQC Implementation of the Alliance for Innovation on Maternal Health (AIM) Maternal Hypertension Bundle	9	93.110	Agr. 06/23/2016//UC4MC28042	<b>17,560</b>	
Mothers and Babies Illinois: Maternal, Infant and Early Childhood home Visiting Program (MIECHVP)	103	93.505	Agr. No. FCSTS03738	<b>(34)</b>	
Substance Abuse and Mental Health Services Center for Child Trauma Assessment and Service Planning		93.243	5U79SM061254-04	<u><b>628,924</b></u>	<u><b>25,539</b></u>
<b>Department of Health and Human Services Total</b>				<b>2,952,896</b>	<b>1,023,216</b>
Department of Justice International School of Police Staff and Command 4	69	16.U06	EGL0004494-1//DJJ11-C-2180	<b>81,221</b>	
Bureau of Justice Assistance Hiring Initiative for the Womens Project: Creating Two New Attorney Positions		16.746	2013-FA-BX-0004	<b>10,449</b>	
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	81,140	
OVW Fiscal Year 2011 Grants to Reduce Sexual Assault, Domestic Violence, Dating Violence, and Stalking on Campus Program		16.525	2011-WA-AX-0005	19,036	
<b>Department of Justice Total</b>				<u><b>100,176</b></u>	<u><b>191,846</b></u>
Department of State Young African Leaders Initiative	116	19.009	FY15-YALI-NWU-02/S-ECAGD-14-CA-1168	41,894	
Young African Leaders Initiative	116	19.009	S-ECAGD-15-CA-1125//FY16-YALI-BE-NW-03	70,550	
				<u><b>112,444</b></u>	
Establishment of a Center of Journalism Excellence	115	19.501	Agmt Signed 5/8/14	<u><b>255,869</b></u>	
<b>Department of State Total</b>				<b>368,313</b>	

**Northwestern University**

Schedule of Expenditures of Federal Awards  
For the Year Ended August 31, 2016

Research Type/Federal Grantor/Subagency/Project Title	Pass-through ID	CFDA	Sponsor Award Number	FY16 Expense	Passed to Subrecipients
National Aeronautics and Space Administration NASA Goddard Space Flight Center Convective Effects on Solid/Liquid Interface Dynamics in the Freeze-Casting Process		43.008	NNX16AI78A	<b>13,478</b>	
National Aeronautics and Space Administration Meteoritic Nanodiamond Analysis by Atom-Probe Tomography	284	43.001	WU-14-06-MOD-2//NNX13AF53G	<b>25,518</b>	
<b>National Aeronautics and Space Administration Total</b>				<b>38,996</b>	
National Endowment for the Arts A Feast of Astonishments: Charlotte Moorman and the Avant-Garde, 1960-1990		45.024	16-4400-7054	16,201	
Collecting Kashmir exhibition and program support		45.024	15-4400-7030	35,000	
<b>National Endowment for the Arts Total</b>				<b>51,201</b>	
The Corporation for National and Community Service Jumpstart Northwestern	126	94.006	JS-SITE #92/ Grant #920200	6	
<b>The Corporation for National and Community Service Total</b>				<b>6</b>	
<b>TOTAL OTHER PROGRAMS</b>				<b>4,253,840</b>	<b>1,041,121</b>
<b>Cluster (CCDF)</b>					
Department of Health and Human Services Administration for Children and Families Improving Caregiver Quality through Observation and Individualized Instructional Feedback		93.575	90YE0159-01-00	<b>27,078</b>	
<b>Department of Health and Human Services Total</b>				<b>27,078</b>	
<b>Cluster (CCDF) Total</b>				<b>27,078</b>	
<b>Cluster (Medicaid)</b>					
Department of Health and Human Services Office of the National Coordinator for Health Information Technology ARRA-Electronic Health Record (EHR) Regional Extension Centers (RECs)	102	93.778	90RC0020 // 2013-38-006 A	<b>5,331</b>	
<b>Department of Health and Human Services Total</b>				<b>5,331</b>	
<b>Cluster (Medicaid) Total</b>				<b>5,331</b>	
<b>TOTAL EXPENDITURES OF FEDERAL AWARDS</b>				<b>\$631,353,482</b>	<b>\$67,616,667</b>

**Northwestern University**

Schedule of Expenditures of Federal Awards  
Legend for Pass-Through Award Prime Recipients  
For the Year Ended August 31, 2016

---

<b>ID</b>	<b>Sponsor Full Name</b>	<b>ID</b>	<b>Sponsor Full Name</b>
1	Advanced BioDevices, LLC	48	Concord Consortium
2	Agile Sciences, Inc.	49	Connecticut Science Center
3	AIDS Prevention Initiative Nigeria, Ltd.	50	CONRAD Program
4	Albert Einstein College of Medicine, Inc.	51	County of Lake
5	Alere Wellbeing, Inc.	52	Covitect Inc.
6	Alliance for Clinical Trials in Oncology	53	Crucell Holland B.V.
7	Alliance for Sustainable Energy, LLC, National Renewable Energy Laboratory	54	Cureveda, LLC
8	Alliance of Chicago Community Health Services	55	D&S Consultants, Inc.
9	American College of Obstetricians and Gynecologists	56	Dakota Consulting, Inc.
10	American College of Rheumatology	57	Dana-Farber Cancer Institute
11	American Heart Association	58	Dartmouth College
12	American Institutes for Research	59	Delaware State University
13	American Lightweight Materials Manufacturing Innovation Institute	60	Digital Optics Technologies, Inc.
14	Ann & Robert H. Lurie Children's Hospital	61	Duke University
15	Arizona State University	62	Eastern Virginia Medical School
16	U.S. Air Force Asian Office of Aerospace Research and Development	63	East-West Management Institute Inc.
17	Battelle Energy Alliance, LLC, Idaho National Laboratory	64	ECOG Research and Education Foundation, Inc.
18	Battelle Memorial Institute	65	ECOG-ACRIN Medical Research Foundation, Inc.
19	Baylor College of Medicine	66	EMMES Corporation
20	BBN Technologies	67	Emory University
21	Benaroya Research Institute at Virginia	68	Endocrine Society
22	Beth Israel Medical Center	69	Engility Corporation
23	Booz, Allen & Hamilton Inc.	70	Engineering and Software System Solutions, Inc.
24	Bose Corporation	71	EveryFit, Inc.
25	Boston Medical Center	72	Fermi Research Alliance, LLC, Fermi National Acceleratory Laboratory
26	Boston University	73	Florida International University
27	Brigham and Women's Hospital	74	Ford Motor Company
28	Brown University	75	Fred Hutchinson Cancer Research Center
29	Bureau, Henry and Stark County Regional Office of Education	76	Frontier Science and Technology Research Foundation
30	California Institute of Technology, Jet Propulsion Laboratory	77	Fundação Faculdade de Medicina
31	Carnegie Institution of Washington	78	General Electric Company
32	Carnegie Mellon University	79	General Motors Corporation
33	Case Western Reserve University	80	George Washington University
34	Caterpillar, Inc.	81	Georgetown University
35	Celdara Medical, LLC	82	Georgia Institute of Technology
36	Cellex Inc.	83	Georgia State University
37	Cerner Corporation	84	Gold T-Tech, Inc.
38	Chicago Association for Research and Education in Science	85	Great Lakes Hemophilia Foundation
39	Chicago Department of Public Health	86	Greenwood Genetic Center
40	Chicago Public Schools	87	Gynecologic Oncology Group
41	Children's Hospital of Philadelphia	88	Harvard Pilgrim Health Care, Inc.
42	Cincinnati Children's Hospital Medical Center	89	Harvard University
43	Citrine Informatics	90	Health Management Associates, Inc.
44	Cold Spring Harbor Laboratory	91	Health Research and Educational Trust
45	Columbia University	92	Hektoen Institute for Medical Research
46	Communication Disorders Technology, Inc.	93	Hemophilia Center of Western Pennsylvania
47	Community Action Project of Tulsa County, Inc.	94	Henry M. Jackson Foundation for the Advancement of Military Medicine
		95	Hewlett-Packard Company

**Northwestern University**

Schedule of Expenditures of Federal Awards  
Legend for Pass-Through Award Prime Recipients  
For the Year Ended August 31, 2016

---

<b>ID</b>	<b>Sponsor Full Name</b>	<b>ID</b>	<b>Sponsor Full Name</b>
96	Howard Brown Health Center	145	MedPro Technologies, LLC
97	HYPRES, Inc.	146	Michigan State University
98	Icahn School of Medicine at Mount Sinai	147	Microbiotix, Inc.
99	ICON Clinical Research, LLC	148	MITRE Corporation
100	Illinois Criminal Justice Information Authority	149	MP Technologies, LLC
101	Illinois Department of Children and Family Services	150	National Academy of Sciences
102	Illinois Department of Healthcare and Family Services	151	National Institute of Arthritis and Musculoskeletal and Skin Diseases
103	Illinois Department of Human Services	152	National Institute of Diabetes, Digestive and Kidney Diseases
104	Illinois Department of Public Health	153	National Institute of Mental Health
105	Illinois Department on Aging	154	National Institute on Deafness and Other Communication Disorders
106	Indiana University	155	National Jewish Medical and Research Center
107	Indiana University Purdue University Indianapolis	156	New England Research Institute, Inc.
108	Infinitesimal, LLC	157	New School
109	Innoblative Designs, Inc.	158	New York University
110	Institute for Cancer Research	159	New York University School of Medicine
111	Institute of International Education, Inc.	160	Nious Technologies Incorporated
112	Intact Genomics, Inc.	161	Northern Illinois University
113	International AIDS Vaccine Initiative	162	NorthShore University HealthSystem Research Institute
114	International Business Machines Corporation	163	Nour, LLC
115	International Center for Journalists	164	NRG Oncology Foundation, Inc.
116	International Research & Exchanges Board	165	NuCrypt LLC
117	Iowa State University	166	NuMat Technologies, Inc.
118	Jackson Laboratory	167	Ohio Department of Education
119	Jaeb Center for Health Research	168	Ohio State University
120	Jefferson Science Associates, LLC, Thomas Jefferson National Accelerator Facility	169	One Hope United
121	Joan and Sanford I. Weill Medical College	170	OptoNet, Inc.
122	Johns Hopkins University	171	Oregon Health & Science University
123	Johns Hopkins University Applied Physics Laboratory	172	Pennington Biomedical Research Center
124	Joint Commission Resources, Inc.	173	Pennsylvania State University
125	Joslin Diabetes Center, Inc.	174	Princeton University
126	Jumpstart for Young Children, Inc.	175	Protabit LLC
127	Kaiser Foundation Research Institute	176	Purdue University
128	Krell Institute	177	Queens College, CUNY
129	Leidos Biomedical Research, Inc.	178	QuesTek Innovations LLC
130	Leidos, Inc.	179	Radiation Monitoring Devices, Inc.
131	Los Alamos National Security, LLC, Los Alamos National Laboratory	180	Rehabilitation Institute of Chicago
132	Louisiana State University Health Sciences Center	181	Rehabilitation Institute Research Corporation
133	Loyola University Chicago	182	Reinserta un Mexicano, A.C.
134	Ludwig Institute for Cancer Research	183	Rensselaer Polytechnic Institute
135	Lynntech, Inc.	184	Research Triangle Institute
136	MANILA Consulting Group, Inc.	185	Rochester Institute of Technology
137	Massachusetts General Hospital	186	Rockefeller University
138	Massachusetts Institute of Technology	187	Rush University Medical Center
139	Materials and Electrochemical Research Corporation	188	Rutgers University, the State University of New Jersey
140	Mayo Clinic	189	Sacred Heart University
141	Mayo Clinic Jacksonville	190	SAFCell, Inc.
142	MC10 Inc.	191	Sandia Corporation, Sandia National Laboratory
143	Medical College of Wisconsin	192	Sanford Burnham Prebys Medical Discovery Institute
144	Medical University of South Carolina	193	Scripps Research Institute

**Northwestern University**

Schedule of Expenditures of Federal Awards  
Legend for Pass-Through Award Prime Recipients  
For the Year Ended August 31, 2016

---

<b>ID</b>	<b>Sponsor Full Name</b>	<b>ID</b>	<b>Sponsor Full Name</b>
194	Seton Hall University	244	University of Illinois at Urbana-Champaign
195	SIMmersion LLC	245	University of Iowa
196	SiNode Systems Inc.	246	University of Jos
197	Smithsonian Astrophysical Observatory	247	University of Kentucky
198	Social & Scientific Systems, Inc.	248	University of Lagos
199	Southern Methodist University	249	University of Maryland, College Park
200	Space Telescope Science Institute	250	University of Massachusetts Boston
201	SRI International	251	University of Massachusetts Medical School
202	Stanford University	252	University of Medicine and Dentistry of New Jersey
203	State University of New York at Buffalo	253	University of Memphis
204	State University of New York at Stony Brook	254	University of Miami
205	State University of New York Health Science Center at Brooklyn	255	University of Michigan
206	Strategic Pharma-Academic Research Consortium	256	University of Minnesota
207	Swedish Medical Center	257	University of Mississippi Medical Center
208	Teaching Channel	258	University of Missouri-Columbia
209	Technion - Israel Institute of Technology	259	University of Nebraska Medical Center
210	Temple University	260	University of North Carolina at Chapel Hill
211	Tera-Print LLC	261	University of North Texas Health Science Center
212	Texas Biomedical Research Institute	262	University of Pennsylvania
213	Texas Tech University	263	University of Pittsburgh
214	Tufts Medical Center, Inc.	264	University of Rochester
215	Tufts University	265	University of South Carolina
216	Tulane University	266	University of Southern California
217	UChicago Argonne, LLC, Argonne National Laboratory	267	University of Tennessee
218	United Technologies Research Center	268	University of Texas at Austin
219	Université de Bamako	269	University of Texas at San Antonio
220	Universities Space Research Association	270	University of Texas Health Science Center
221	University of Alabama at Birmingham	271	University of Texas Southwestern Medical Center at Dallas
222	University of Alberta	272	University of Utah
223	University of Arizona	273	University of Virginia
224	University of Arkansas for Medical Sciences	274	University of Washington
225	University of California, Davis	275	University of Wisconsin-Madison
226	University of California, Irvine	276	UT-Battelle, LLC, Oak Ridge National Laboratory
227	University of California, Lawrence Berkeley National Laboratory	277	Vanderbilt University
228	University of California, Los Angeles	278	Veterans Medical Research Foundation of San Diego
229	University of California, Riverside	279	Vidrio Technologies, LLC
230	University of California, San Diego	280	Vignet Inc.
231	University of California, San Francisco	281	Virginia Commonwealth University
232	University of California, Santa Barbara	282	Virginia Polytechnic Institute and State University
233	University of Central Florida	283	Wake Forest University Health Sciences
234	University of Chicago	284	Washington University in St. Louis
235	University of Chicago, National Opinion Research Center	285	Wayne State University
236	University of Cincinnati	286	West Virginia University
237	University of Colorado	287	Worcester Polytechnic Institute
238	University of Colorado Denver	288	Wyoming Department of Health
239	University of Connecticut Health Center	289	Yale University
240	University of Florida	290	Youth Network Council
241	University of Georgia		
242	University of Ibadan		
243	University of Illinois at Chicago		

(Concluded)

## Northwestern University

Notes to Schedule of Expenditures of Federal Awards  
For the Year Ended August 31, 2016

---

### 1. ORGANIZATION AND SCOPE OF OPERATIONS

Northwestern University (the “University”) is a 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 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, 2016. 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 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.

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

**Expenditure and Revenue Recognition** – The Schedule presents the expenditures of individual programs. All program outlays, including accrued expenditures and capital outlays, are reported as expenditures. Related revenues 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 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.

**Northwestern University**

Schedule of Expenditures of Federal Awards by Federal Agency  
For the Year Ended August 31, 2016

---

**3. SCHEDULE OF EXPENDITURES OF FEDERAL AWARDS BY FEDERAL AGENCY**

<b>Federal Agency</b>	<b>Expenditures</b>
Agency for International Development	\$484,370
U.S. Department of Agriculture	37,180
U.S. Department of Commerce	5,862,077
U.S. Department of Defense	38,836,027
U.S. Department of Education	197,077,196
U.S. Department of Energy	22,284,914
U.S. Department of Health and Human Services	308,602,581
U.S. Department of Homeland Security	1,675,158
U.S. Department of Justice	2,180,225
U.S. Department of Labor	128,314
U.S. Department of State	368,313
U.S. Department of Transportation	188,802
U.S. Department of Veterans Affairs	751,412
National Aeronautics and Space Administration	3,477,404
National Endowment for the Arts	51,201
National Endowment for the Humanities	50,400
National Science Foundation	48,926,556
Nuclear Regulatory Commission	324,534
The Corporation for National and Community Service	6
U.S. Environmental Protection Agency	19,608
Vietnam Education Foundation	27,204
<b>TOTAL</b>	<b><u>\$631,353,482</u></b>

**Northwestern University**

Notes to Schedule of Expenditures of Federal Awards  
For the Year Ended August 31, 2016

---

**4. 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, 2016, are summarized as follows:

Federal Perkins Loan Program (CFDA 84.038)	\$ 4,788,050
Federal Direct Loan Programs (CFDA 84.268)	136,774,500
HPSL—Primary Care Loans (CFDA 93.342)	<u>8,582</u>
Total Federal Student Loan Programs	<u>\$141,571,132</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, HPSL-Medical (CFDA 93.342), and HPSL-Dental (CFDA 93.342) programs were \$37,046,029; \$36,911; and \$152,859, respectively, at August 31, 2016. The University incurred \$460,000 and \$2,271 in administrative expenses under the Perkins and Federal Work Study programs, respectively, for the year ended August 31, 2016.



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

To the Board of Trustees of Northwestern University:

We have audited, in accordance with auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards* issued by the Comptroller General of the United States, the consolidated financial statements of Northwestern University (the "University"), which comprise the consolidated statement of financial position as of August 31, 2016, and the related consolidated statement of activities and of cash flows for the year then ended, and the related notes to the financial statements, and have issued our report thereon dated February 2, 2017.

### **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 a combination of deficiencies, in internal control such that there is a reasonable possibility that a material misstatement of the entity's financial statements will not be prevented, or detected and corrected on a timely basis. A *significant deficiency* is a deficiency, or a combination of deficiencies, in internal control that is less severe than a material weakness, yet important enough to merit attention by those charged with governance.

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

### **Compliance and Other Matters**

As part of obtaining reasonable assurance about whether the University's consolidated financial statements are free from material misstatement, we performed tests of its compliance with certain provisions of laws, regulations, contracts and grant agreements, noncompliance with which could have a direct and material effect on the determination of financial statement amounts. However, providing an opinion on compliance with those provisions was not an objective of our audit, and accordingly, we do not express such an opinion. The results of 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.

*PricewaterhouseCoopers LLP*

Chicago, Illinois  
February 2, 2017



**Report of Independent Auditors on Compliance with Requirements  
That Could Have a Direct and Material Effect on Each Major Program and on Internal  
Control Over Compliance in Accordance with OMB Uniform Guidance**

To the Board of Trustees of Northwestern University:

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

We have audited Northwestern University's (the "University") compliance with the types of compliance requirements described in the *OMB Compliance Supplement* that could have a direct and material effect on each of the University's major federal programs for the year ended August 31, 2016. The University's major federal programs are identified in the summary of auditor's results section of the accompanying schedule of findings and questioned costs.

***Management's Responsibility***

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

***Auditors' Responsibility***

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

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

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

In our opinion, the University complied, in all material respects, with the types of compliance requirements referred to above that could have a direct and material effect on each of its major federal programs for the year ended August 31, 2016.

***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 items 2016-001 and 2016-002. Our opinion on each major federal program is not modified with respect to these matters.

The University's response to the noncompliance findings identified in our audit is described in the accompanying Management's Views and Corrective Action Plan. The University's response was not subjected to the auditing procedures applied in the audit of compliance and, accordingly, we express no opinion on the response.

### **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 Uniform Guidance, but not for the purpose of expressing an opinion on the effectiveness of internal control over compliance. Accordingly, we do not express an opinion on the effectiveness of the University's internal control over compliance.

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

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

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

*PricewaterhouseCoopers LLP*

Chicago, Illinois  
May 31, 2017

**Northwestern University**

Schedule of Findings and Questioned Costs

For the Year Ended August 31, 2016

---

**Financial Statements**

Type of auditor's report issued:

Unmodified

Internal control over financial reporting:

Material weakness(es) identified?

Yes

No

Significant deficiency(ies) identified that are not considered to be material weakness(es)?

Yes

None reported

Noncompliance material to financial statements noted?

Yes

No

**Federal Awards**

Internal control over major programs:

Material weakness(es) identified?

Yes

No

Significant deficiency(ies) identified that are not considered to be material weakness(es)?

Yes

None reported

Type of auditor's report issued on compliance for major programs:

Unmodified

Any audit findings disclosed that are required to be reported in accordance with Section 510(a) of OMB Circular Single Audit Report?

Yes

No

**Identification of Major Programs**

**CFDA Numbers**

Various

Various

93.638

**Name of Federal Program or Cluster**

Student Financial Assistance Cluster

Research and Development Cluster

Great Lakes Practice

Transformation Network

Dollar threshold used to distinguish between Type A and Type B programs:

\$3,000,000

Auditee qualified as low-risk auditee?

Yes

No

**Northwestern University**

Schedule of Findings and Questioned Costs

For the Year Ended August 31, 2016

---

**SECTION II – FINANCIAL STATEMENT FINDINGS**

No findings to be reported.

**SECTION III – FEDERAL AWARD FINDINGS AND QUESTIONED COSTS**

**Finding 2016-001: Remit Enrollment Reporting Corrections in a Timely Manner**

**Award Information**

Cluster: Student Financial Aid Cluster  
Grantor: Department of Education  
Award Year: September 1, 2015–August 31, 2016  
CFDA Number: 84.268  
CFDA Title: Federal Direct Student Loans

**Criteria**

Federal regulations governing Title IV student aid programs require institutions, lenders, and the Direct Loan Servicer to monitor and update the enrollment status of students who receive federal student loans. Completion of Enrollment Reporting satisfies the regulatory requirements for schools. Under the Direct Loan programs, schools must complete and return within 15 days the Enrollment Reporting roster file placed in their Student Aid Internet Gateway (“SAIG”) mailboxes sent by Department of Education via the National Student Loan Data System (“NSLDS”). Once received, the institution must update for changes in student status and submit the changes electronically through the batch method or the NSLDS website. Unless the school expects to complete its next roster within 60 days, the school must notify the lender or the guaranty agency within 15 days if it discovers that a student who received a loan either did not enroll or ceased to be enrolled on at least a half-time basis (Direct Loan, 34 CFR section 685.309).

**Condition**

Through our testing of enrollment reporting, we identified that enrollment reports were not submitted within 60 days of receipt for 5 students from our sample of 25 tested.

**Cause**

The late reporting was caused by a delay in the resolution of errors between Northwestern University and the National Student Clearinghouse. Although the errors were resolved within the 15 day requirement, the communication was not received by the Clearinghouse in time to be included within the batch reports from the National Student Clearinghouse to the NSLDS. The timeframe in which the errors were returned caused student enrollment details to not be captured until the following months’ reporting period.

**Effect**

The effective administration of Title IV loans could be impacted when changes in the students’ status are not reported timely and accurately. The accuracy of enrollment information is important as a student’s enrollment status determines eligibility for in-school status, deferment, grace periods, and repayments as well as the Government’s payment of interest subsidies.

**Northwestern University**

Schedule of Findings and Questioned Costs  
For the Year Ended August 31, 2016

---

**SECTION III – FEDERAL AWARD FINDINGS AND QUESTIONED COSTS (continued)**

**Questioned Costs**

None identified.

**Recommendation**

We recommend the University implement a control to ensure changes in enrollment are appropriately communicated to the Clearinghouse and that all errors are resolved in a timely manner to ensure they are reported to NSLDS timely.

**Management’s Views and Corrective Action Plan**

Management’s views and corrective action plan are included at the end of this report.

**Finding 2016-002: Equipment and Real Property Management**

**Award Information**

Cluster: Research and Development  
Grantor: Department of Health and Human Services  
Award Year: September 1, 2015–August 31, 2016  
CFDA Number: 93.853  
CFDA Title: Extramural Research Programs in the Neuroscience and Neurological Disorders

**Criteria**

OMB Uniform Guidance §200.313 states that equipment acquired with Federal funds and Federally owned equipment shall be maintained accurately and shall include a description of the equipment, manufacturer’s serial number, model number, other identification number, source of the equipment (including the award number), whether title vests in the recipient or the Federal Government, acquisition date and cost, location and condition of the equipment and the date the information was reported and unit acquisition cost. Further, a physical inventory of all Federal equipment shall be taken and the results reconciled with the equipment records at least once every two years. Any differences between quantities determined by the physical inspection and those shown in the accounting records shall be investigated to determine the causes of the differences. The recipient shall, in connection with the inventory, verify the existence, current utilization, and continued need for the equipment.

**Condition**

Through our testing of compliance requirements surrounding safeguarding and maintaining federally funded equipment and real property, we performed a physical inventory observation and selected 25 floor to sheet and 25 sheet to floor inventory items. The engagement team noted 1 asset of the 25 selected in floor to sheet testing that was improperly maintained by the University. The asset had been removed from the fixed asset system but not disposed of by the department. We also noted that the University was not consistently updating University records to reflect the results of annual inventory

**Northwestern University**

Schedule of Findings and Questioned Costs

For the Year Ended August 31, 2016

---

**SECTION III – FEDERAL AWARD FINDINGS AND QUESTIONED COSTS (continued)**

counts. The engagement team performed testing to ensure the differences between the physical inventory and equipment records were resolved. We selected 25 assets for testing and noted 1 instance in which management did not properly update the physical inventory records to reflect the disposal of a piece of equipment.

**Cause**

The University does not perform thorough review procedures to ensure that the real property records reflect the equipment and real property maintained by the University.

**Effect**

Federally funded equipment could be inaccurately accounted for as well as improperly monitored under Uniform Guidance guidelines.

**Questioned Costs**

None identified.

**Recommendation**

The University should implement a thorough review process to ensure the property records appropriately reflect the real property maintained by the University. Management should reiterate to departments the proper procedures related to real property maintenance and disposal.

**Management's Views and Corrective Action Plan**

Management's views and corrective action plan are included at the end of this report.

## **SUMMARY SCHEDULE OF PRIOR AUDIT FINDINGS**

### **Finding 2015-001—Notify Students Receiving FSA Funds Prior to the Disbursement**

#### **Award Information**

Cluster: Student Financial Assistance Cluster  
Grantor: Department of Education  
Award Year: September 1, 2014–August 30, 2015  
CFDA Number: 84.268  
CFDA Title: Federal Direct Student Loans

A general notification must be provided to all students receiving FSA funds notifying the student of the amount of funds the student and his or her parent can expect to receive from each FSA program, including FWS, and how and when those funds will be disbursed. This notification must be sent before the disbursement is made. To test the compliance related to the disbursement of Federal Student Aid (FSA) funds, PwC sampled 60 students and found one student did not receive email notification of their loan disbursement prior to funds being disbursed.

#### **Recommendation**

PwC recommended that the University should implement a manual check that includes all types of loan disbursements that email notifications to students for loan disbursements are made timely.

#### **Current Status**

Northwestern has made the necessary changes to the one-off job run process in relation to the Notice of the Right to Cancel Report. Management ensures a complete population of students is included in one-off job runs to ensure proper notification of all students receiving FSA.

### **Finding 2015: 002—Remit Enrollment Reporting Corrections in a Timely Manner**

#### **Award Information**

Cluster: Student Financial Assistance Cluster  
Grantor: Department of Education  
Award Year: September 1, 2014–August 30, 2015  
CFDA Number: 84.268  
CFDA Title: Federal Direct Student Loans

Through PwC testing of 27 enrollment status changes, PwC noted while all changes were submitted by the University timely to the National Student Clearinghouse (“NSC”)—a third party servicer—

**Northwestern University**

Summary Schedule of Prior Audit Findings

For the Year Ended August 31, 2016

---

**SUMMARY SCHEDULE OF PRIOR AUDIT FINDINGS (continued)**

the enrollment status change was not submitted by NSC to the National Student Loan Data System (NSLDS) within 60 days for 20 students from our sample of 25 students. Enrollment status and effective status change dates were inconsistent between NSLDS and Students' records for 7 and 10 students out of 25 sampled, respectively.

**Recommendation**

PwC recommended that the University institute a control to periodically review enrollment changes and ensure the changes were reported to NSLDS timely.

**Current Status**

The issues in reporting from the National Student Clearinghouse to the NSLDS were resolved in the current year due to the effective updates from the National Student Clearinghouse. Refer to the current year findings for additional details.

# Northwestern University

Management's Views and  
Corrective Action Plan  
Year Ended August 31, 2016

May 31, 2017

**Corrective Action Plan  
Findings: Single Audit Report  
Fiscal Year Ended August 31, 2016**

Listed below is Northwestern University's Corrective Action Plan to resolve audit findings resulting from the FY2016 audit.

**Finding 2016-001: Timely Reporting of Enrollment Corrections**

Management response:

Management notes that there were errors in relation to timely reporting of enrollment in the prior year as well as in the current year. Northwestern University currently reports changes in enrollment to the National Student Clearinghouse on the fifth of every month and corrects any errors within the allotted time, as stated above. The timing of the creation of the error list by the Clearinghouse and the submission of the University response means that the data is not ready to be submitted to NSLDS by the time the roster is due, usually around the fifteenth of the month. In order to provide error-free data to NSLDS via the Clearinghouse in a timelier manner, Northwestern will take the following steps:

*1. Report changes in enrollments on a new schedule.*

Northwestern will submit its data files and have them processed at the end of the current month, rather than in the first week of the next month. We will also report one additional time at the end of the add/drop period for each of our terms. These changes together should allow for earlier reporting and thus adequate time to resolve errors before the batch is due to NSLDS. The addition of the start of term reports will catch any changes that take place in that first week that might have been missed by earlier reporting.

*2. Reduce the number of errors to be corrected after initial submission.*

The process by which enrollment change reports are generated contains known bugs that result in errors. Northwestern staff must correct manually before the data can be submitted to NSLDS. We will work with the vendor and our internal IT department to correct or circumvent those bugs.

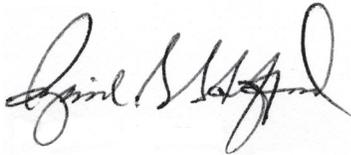
These procedures will be in place before August 31, 2017, and will be implemented by Emily Osborn (Director of Financial Aid) and Jacquelyn Casazza (University Registrar Department Head).

**Finding 2016-002: Disposal of Federally Funded Equipment and Real Property**

Management response:

Management agrees. Accounting Services will verify that disposals are appropriately updated in the financial system through an enhanced quality control review process. We will also reiterate proper procedures to departments regarding the disposition of equipment including, but not limited to, tag removal and removal of or segregation from the area's functioning equipment population. These procedures will be in place before August 31, 2017, and will be implemented by Roberto De Rose (Director of Accounting Service).

Please contact me at [i-stafford@northwestern.edu](mailto:i-stafford@northwestern.edu) or 847-491-7350 if you have any questions on these matters.

A handwritten signature in black ink, appearing to read "Ingrid S. Stafford". The signature is fluid and cursive, with a large initial "I" and "S".

Ingrid S. Stafford  
Vice President for Financial  
Operations and Treasurer