



NORTHWESTERN UNIVERSITY

Single Audit Report

Year ended August 31, 2018

(With Independent Auditors Report Thereon)

NORTHWESTERN UNIVERSITY
Single Audit Report
Year ended August 31, 2018

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Independent Auditors' Report

The Board of Trustees

Accounts receivable	273,954	263,424
Contributions receivable,	311,458	318,780
Notes receivable,	151,666	151,679
Investments	11,287,087	10,717,787
Land, buildings, and equipment,		

Consolidated Statements of Cash Flows

For the fiscal years ended August 31, 2018 and 2017

(in thousands of dollars)	2018	2017
Cash flows from operating activities		
Change in net assets	\$560,50	\$668,974

Consolidated Statements of Cash Flows (continued)

For the fiscal years ended August 31, 2018 and 2017

Notes to the Consolidated Financial Statements

For the fiscal years ended August 31, 2018 and 2017

Cash and Cash Equivalents

Cash reflects currency and deposits or other accounts with financial institutions that may be deposited or withdrawn without notice or penalty.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; original maturities of the investments are three months or less.

Contributions

Contributions received, including unconditional promises to give (pledges), are recognized by the University as revenues at their fair values at the date of gift. Private gifts, including unconditional promises to give, are recognized as revenues in the period received. Conditional promises to give are not 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-

Derivative Financial Instruments

The University uses various financial instruments to manage 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 consistent. If and when models are used, the value of the interest rate swap depends on the contractual terms of and specific risks inherent in the instrument, as well as the availability and reliability of observable inputs. Such inputs include market prices for reference securities, yield curves, credit curves, measures of volatility, and prepayment rates as well as correlations of such inputs. Due to significant other observable inputs, interest rate swaps are classified as Level 2. For further discussion, see notes 4 and 7.

Accounts and Notes Receivable

Accounts receivable are recorded at net realizable value. Those generally expected to be collected within one year are provided an allowance. Accounts receivable deemed to be uncollectible are written off at that time.

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

Contributions Receivable

Contributions receivable that represent unconditional promises to give are recognized at fair value as contributions, either temporarily restricted or permanently restricted, in the period such promises are made by donors. Contributions are discounted at a just rate commensurate with the risk. (st)-a

Revenue Recognition

Revenues from tuition and fees are reported in the fiscal year in which they are earned, including adjustments for educational programs crossing over fiscal years. Fiscal year 2018 includes tuition and fees, billed but not earned in fiscal year 2018, reported as deferred revenue in fiscal year 2018. Similarly, fiscal year 2017 includes tuition and fees, billed but not earned in fiscal year 2017, are reported as deferred revenue in fiscal year 2017.

Revenues from auxiliary services, such as residential 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 activities. It also includes revenues from the provision of physical plant services and goods to external institutions contiguous to the University campuses; trademark and royalty revenues arising from licensing of innovative technologies, copyrights, and other intellectual property (these revenues are recognized in the fiscal year in which they are earned); and other income including revenues not otherwise categorized as grants and contracts 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 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 2015 through 2018.

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.

3. Contributions Receivable

Contributions receivable as of August 31 consisted of the following:

(in thousands of dollars)	2018	2017
Unconditional promises expected to be collected		
Less than one year	\$53,615	\$57,821
One to five years	185,228	181,136
More than five years	114,410	114,410

(in thousands of dollars)					2018
	Quoted prices in active markets (Level 1)	Significant other observable inputs (Level 2)	Significant unobservable inputs (Level 3)	NAV as Practical Expedient (NAV)	Total fair value
Other investments	—	30,879	25,799	—	56,678
Interest-rate derivatives	2,500	(1,742)	—	—	758
Subtotal investment assets at fair value	1,234,055	710,553	134,550	9,193,020	11,272,178

Interest-rate swaps

—

There were no significant transfers or reclassifications between Levels 1 and 2 during fiscal years 2018 and 2017. In fiscal year 2018, there wa

The highyield credit portfolio includes investments in distressed debt and other credit instruments with fixed income characteristics but more

Derivative Financial Instruments

The University has entered into hedging transactions via various interest rate swaps and swaptions and has maintained those positions since fiscal year 2010. These instruments are 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 reporting date. The University manages its exposure to credit risk by using highly rated counterparties, establishing credit limits, and obtaining collateral where appropriate. As a result, the University has limited credit risk. The University has entered into master agreements with major investment banks that impose a \$1 million threshold on both parties. As of August 31, 2018 and 2017, the University has collateral of \$2.5 million and \$4 million, respectively, 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 7.

The following tables summarize the derivative financial instruments held by the University as of August 31, 2018 and 2017:

(in thousands of dollars)				2018
	Notional amount	Assets	Liabilities	Fiscal year net gain (loss)
Investment-related derivatives				
Interest-rate swaptions	\$200,000	\$2,500	(\$1,742)	—
Total investment-related	200,000	2,500	(1,742)	—
Credit-related derivatives				
Interest-rate swaps	125,002	—	(13,410)	\$7,419
Total credit-related	125,002	—	(13,410)	7,419
Total derivative financial instruments	\$325,002	\$2,500	(\$15,152)	\$7,419

(in thousands of dollars)				2017
	Notional amount	Assets	Liabilities	Fiscal year net gain (loss)
Investment-related derivatives				
Interest-rate swaptions	\$200,000	\$4,000	(\$3,058)	(\$145)
Equity futures	60,252	4,443	—	8,179
Total investment-related	260,252	8,443	(3,058)	8,034

(in thousands of dollars)				2017
Credit-related derivatives				
Interestrates swaps	125,000	—	(20,830)	7,732
Total creditrelated	125,000	—	(20,830)	7,732
Total derivative financial instruments	\$385,252	\$8,443	(\$23,888)	\$15,766

5. Land, Buildings, and Equipment

Land, buildings, and equipment for the fiscal years ended August 31 consisted of the following:

Rentals under Leases

-Series 201

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 2041. The future minimum rentals under noncancelable operating leases through August 31 of each period are shown below

(in thousands of dollars)	
2019	\$1,210
2020	491
2021	472
2022	443
2023	460
2024 and thereafter	4,786
Total	\$7,862

6. Deposits Payable and Actuarial Liability of Annuities Payable

Deposits payable and actuarial liability of annuities payable for the fiscal years ended August 31 are summarized on the statements of financial position as follows:

(in thousands of dollars)	2018	2017
Agency deposits payable	\$123,468	\$119,777
Actuarial liability of annuities payable	19,935	20,236
Student loan deposits payable	5,537	7,981
Other deposits payable	5,793	8,182
Total deposits payable and actuarial liability of annuities payable	\$154,743	\$156,179

7. Bonds, Notes, and Other Debt Payable

Bonds, notes, and other debt payable for the fiscal years ended August 31 are as follows:

(in thousands of dollars)	Interest-rate mode	Fiscal year maturity	Interest rate	2018	2017
Illinois Finance Authority (IFA) Series 2004	Variable	2034	1.52% ^(a)	\$135,800	\$135,800
IFA-Series 2008	Variable	2046	1.49% ^(a)	125,000	125,000

Taxable-Series 20120.796 scn 234.36 227.28 62.28 4.0

(in thousands of dollars)

Interest-rate
mode

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 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 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

Changes in Endowment Net Assets

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

(in thousands of dollars)				2018
	Unrestricted	Temporarily restricted	Permanently restricted	Total
Endowment net assets, beginning of year	\$4,041,74	\$2,422,04	\$1,483,79	\$7,947,57
Net investment loss	(3,143)	(3,119)		

(in thousands of dollars)				2017
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	Temporarily	
		Permanently
Unrestricted	restricted	restricted

and while management believes that the reserves are adequate, the ultimate liabilities may be more or less than ~~the provided~~. These reserves are included in accounts payable and accrued liabilities on the consolidated statements of financial position.

Under an agreement in effect through fiscal year 2013 between the University and NMG, a proportionate share of ~~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 ~~relate~~ 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~~ 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~~ secured notes, which were purchased by a funding trust that procures financing to support the lending program. The programs are managed to break even and genera

(in thousands of dollars)					2018
Student services	25,153	18,907	8,611	198,438	251,109
Institutional support	13,217	9,934	4,524	336,091	363,766
Auxiliary services	41,117	30,906	14,076	64,890	150,989
Total	\$200,533	\$150,732	\$68,648	\$2,039,270	\$2,459,183

(in thousands of dollars)					2017
	Maintenance of facilities	Depreciation and accretion	Interest on indebtedness	All other operating expenses	Total
Instruction	326,488	\$20,705	\$6,404	383,301	885,898
Research	47,272	36,952	11,430	398,801	494,455
Academic support	36,419	28,469	3,806	205,578	279,272
Student services	23,262	18,184	5,625	181,574	228,645
Institutional support	10,804	8,445	2,812	276,348	298,209
Auxiliary services	39,295	30,716	9,501	31,305	110,817

NORTHWESTERN UNIVERSITY
 Supplementary Schedule of Expenditures of Federal Awards
 Year ended August 31, 2018

Cluster title/Federal grantor	Subagency	Project title	Pass- through ID number	CFDA	Sponsor award number	Federal expenditures	Passed-through to subrecipients
Research and Development Cluster: Department of Agriculture		Molecular characterization of interferon-resistant HIV-1 using novel imaging techniques	208	10.001	DAA2-17-62986-1/59-0210-2-160	\$ 15,899	—
		Research Strategy to understand the impacts and impact pathways of food, agricultural and nutrition policies in Feed the Future (FF) countries	179	10.960	PO#639288/6156/TA-CA-15-008-06	171,059	—

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 Supplementary Schedule of Expenditures of Federal Awards
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Cluster title/Federal grantor	Subagency	Project title	Pass- through ID number	CFDA	Sponsor award number	Federal expenditures	Passed-through to subrecipients
Department of Defense (continued)		SERS Nanosensors for in vivo Glucose Sensing		12.420	W81XWH-16-1-0375	\$ 174,516	—
		SERS Nanosensors for in vivo Glucose Sensing		12.420	W81XWH-16-1-0376	660,499	—
		Sleep homeostasis and synaptic plasticity		12.420	W81XWH-16-1-0169	162,177	—
		T Cell Receptor Repertoire Analysis as a Biomarker for Predicting Graft Rejection in Transplant Recipients		12.420	W81XWH-17-1-0679	128,723	—
		Targeted reinnervation as a means to treat neuromas associated with major limb amputation		12.420	W81XWH-13-2-0100	262,555	45,480
		Targeting Balance Confidence as a Strategy to Increase Integration and Improve Outcomes in Users of Lower-limb Prostheses	177	12.420	322801NWU/W81XWH-17-1-0697	42,330	—
		Targeting EZH2 in castration-resistant prostate cancer		12.420	W81XWH-17-1-0405	445,514	—
		Targeting EZH2 in castration-resistant prostate cancer		12.420	W81XWH-17-1-0406	285,930	—
		The Impact of a Gene Expression Profile on Treatment Choice and Outcome Among Minority Men Newly Diagnosed with Prostate Cancer: A Randomized Trial					

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 Supplementary Schedule of Expenditures of Federal Awards
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Cluster title/Federal grantor	Subagency	Project title	Pass-through ID number	CFDA	Sponsor award number	Federal expenditures	Passed-through to subrecipients
Department of Defense (continued)		Selective Laser Melting of Ni-based superalloys with combined precipitation- and oxide- dispersion-strengthening	12.431		W911NF-18-1-0129	\$ 9,073	—

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 Supplementary Schedule of Expenditures of Federal Awards
 Year ended August 31, 2018

Cluster title/Federal grantor	Subagency	Project title	Pass- through ID number	CFDA	Sponsor award number	Federal expenditures	Passed-through to subrecipients
Department of Defense (continued)		Air photoelectron spectroscopy of 2D perovskites for rational design of stable solar cells with >15% efficiency		12.300	N00014-18-1-2102	\$ 221,563	—
		An Advanced Atom-Probe Tomograph for Three-Dimensional Studies of Structural Materials with Sub-Nanoscale Spatial Resolution and High Mass Resolving-Power		12.300	N00014-17-1-2870	900,000	—
		An Analogical Approach to Autonomy and Social Inference in a Cognitive Architecture		12.300	N00014-16-1-2613-P00002/N00014-13-1-0470	566,463	—
		Automated Alignment Engine for Photonics Integration		12.300	N00014-19-1-2089-P00001	152,078	—
		Blackbody Thermometry with Quantum-State-Prepared Molecular Ions		12.300	N00014-17-1-2258 P00003	253,511	—
		Bulk Nanostructured Materials with Two-Dimensional Building Blocks		12.300	N00014-16-1-2838 P00002	260,634	—
		Cognitive Expertise by Repetition Enhanced Simulation-based (CERES) Training		12.300	N00014-18-1-2316 P00001	89,889	—
		Consensus-Based Distributed Information Fusion		12.300	N00014-16-1-2106-P00001	93,390	—
		Cutset Sampling Topologies for Intelligence, Surveillance, and Reconnaissance		12.300	N00014-17-1-2707 P00002	152,717	58,875
		Cyberalloys 2020: Naval Materials by Design		12.300	N00014-16-1-2400 P00001	253,422	—
		Data Farming from Simulations for Instantaneous Trade-off Analysis using AdapTJ v					

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Cluster title/Federal grantor	Subagency	Project title	Pass-through ID number	CFDA	Sponsor award number	Federal expenditures	Passed-through to subrecipients
Department of Defense (continued)		Data-driven Discovery of Novel Thermoelectric Materials	167	12.RD	1267//N66001-15-C-4036	\$ (140)	—
		Improved Infrared Imaging with Variable Resolution Achieved via Post-Processing	156	12.RD	Agmt 10/18/2017 // N00253-17-C-0024	49,930	—

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Cluster title/Federal grantor	Subagency	Project title	Pass-through ID number	CFDA	Sponsor award number	Federal expenditures	Passed-through to subrecipients
Department of Energy (continued)		Granular Constraints and Size Effects in Polycrystalline Shape Memory Alloys		81.049	DE-SC0010594 0003	\$ 146,962	70,495
		High Pressure Synthesis of New Magnets, Featuring Diamagnetic Sources of Anisotropy		81.049	DE-SC0018092	113,163	—
		Hybrid Halide Perovskites: Advancing Optoelectronic Materials	226	81.049	KK1508/DE-SC0012541	(47,666)	—
		Hybrid Metal Halides: Advancing Optoelectronic Materials	226	81.049	KK1804 // DE-SC0012541	72,732	—
		Institute for Environmental Catalysis		81.049	DE-FG02-03ER15457 0015	1,520,353	—
		Kinetics and Thermodynamics of Metal and Complex Hydride Nanoparticles		81.049	DE-FG02-07ER46433 Mod. 0009	(6,150)	—
		Light-Driven Charge Transfer in Face-to-Face Donor-Spacer-Acceptor Supramolecular Systems		81.049	DE-FG02-96ER14684-0020	42,995	—
		Missing links in biological methane and ammonia oxidation		81.049	DE-SC0016284-0002	228,427	—
		Nanoengineering of Complex Materials		81.049	DE-FG02-00ER45810/0020	360,366	—
		Nanoporous Materials Genome: Methods and Software to Optimize Gas Storage, Separations, and Catalysis	251	81.049	A003127002 Amd 6 // DE-SC0008688	200,032	—
		New Methods for Atomic Structure Determination of Nanoscale Materials		81.049	DE-FG02-01ER45945 0018	95,949	—
		Nonlinear Optimization and Applications		81.049	DE-FG02-87ER25047/0030	117,745	—
		PGM-free Engineered Framework Nano-Structure Catalysts	91	81.049	DE-E0008077	283,684	—
		Probing Coherent States of Light and Matter in Two-Dimensional Semiconductors		81.049	DE-SC0012130-0004	146,489	—
		Properties, Electrochemical Activity, and Stability of Solid Oxide Cell Materials Under Extreme Conditions		81.049	DE-SC0016965	91,323	—
		Research in the Energy, Cosmic and Intensity Frontiers and Theoretical Physics at		81.049	DE-SC0015910 0002	803,458	—

81.049 DE-SC00122702

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Pass-

Passed-through

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Cluster title/Federal grantor	Subagency	Project title	Pass-through ID number	CFDA	Sponsor award number	Federal expenditures	Passed-through to subrecipients
Department of Health and Human Services	Administration for Children and Families	The Northwestern University Two-Generation Child and Family Outcomes Study of CAP Tulsa's CareerAdvance® Program	52	93.093	Agmt 10/31/2017	\$ 174,439	—
		The Northwestern University Two-Generation Study (NU2Gen) of Parent and Child Human Capital Advancement		93.093	90HG1002-01-01	61,355	33,611
		The Northwestern University Two-Generation Study (NU2Gen) of Parent and Child Human Capital Advancement		93.093	90HG1002-02-00	247,686	61,035
						483,480	94,646
		Expanding the Cycle of Opportunity: Simultaneously Educating Parents and Children in Head Start		93.600	90YR0073-04-00	(46,550)	—
		Expanding the Cycle of Opportunity: Simultaneously Educating Parents and Children in Head Start		93.600	90YR0073-04-00	66,853	48,631
		Expanding the Cycle of Opportunity: Simultaneously Educating Parents and Children in Head Start		93.600	90YR0073-05-01 Amd 1	257,849	133,117
						278,152	181,748
		Illinois DCFS Implementation of Trauma Affect Regulation: Guide for Education and Therapy (TARGET) for Post Adoption and Guardianship Families	191	93.652	Agmt Signed 10/12/16 // 90CO1122-04	18,624	—
		Evidence-informed Practices in Early Childhood Home Visiting: Prevention, Identification and Treatment of Substance Abuse in Families					

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Cluster title/Federal grantor	Subagency	Project title	Pass-through ID number	CFDA	Sponsor award number	Federal expenditures	Passed-through to subrecipients
Department of Health and Human Services (continued)		Parent Training in Pediatric Primary Care: A Self Directed Tablet Based Approach	237	93.226	Agt4/21/17/15012705sub1/R01HS024273	\$ 9,369	—
		Physical Therapy Delivery Models for Long-Term Parkinsons Disease Management		93.226	5F32HS025077-02	67,457	—
		Preventing Wrong-Drug and Wrong-Patient Errors with Indication Alerts in CPOE Systems		93.226	5R01HS024945-02	235,713	174,669
		Promoting safe care transitions: Simulation-based mastery learning to improve communication in times of diagnostic uncertainty	204	93.226	080-31050-S27501/R18HS025651	134,305	—
		Redesigning Systems to Improve Quality for Hospitalized Patients		93.226	1R18HS025649-02	200,674	31,190
		Reducing the risk of preventable postpartum lower extremity nerve injuries		93.226	5R03HS025267-02	47,514	3,534
		The Impact of Behavioral Health Treatment among Adolescent Offenders	108	93.226	5R01HS024296-02	12,262	—
		Tools for Optimizing Medication Safety (TOP-MEDS)		93.226	4U19HS021093-05	99,850	93,213
		Using Location-Based Smartphone Alerts within a System of Care Coordination		93.226	1R21HS025000-02	137,030	20,171
							6,152,814
Centers for Disease Control and Prevention		Measures to National Quality Forum – 2	137	93.RD	Agmt 04/30/17/HHSP233201600230A	33,057	—
		The Comprehensive Unit-based Safety Program (CUSP) for Antibiotic Stewardship	122	93.RD	2003757786/HHSP233201500020I	117,855	—
		Developing and Disseminating Programs to Build Sustainable Lupus Awareness, Knowledge, Skills, and Partnerships	8	93.068	6NU58DP006138-02-02	18,148	—
		Community Counts: Public Health Surveillance for Bleeding Disorders (Region #V-West, HTC #553)	90	93.080	ATHN2015-VW-1-553/ 1 NU27DD001155-03-00	17,515	—
		Rural Cancer Prevention Center 2014-2019	241	93.135	3210000758-18-175/5U48DP005014-04	91,590	—
		Chicago Center for Youth Violence Prevention	228	93.136	FP061138//U01CE002712-01	234,657	—
		Development and Evaluation of Sports Concussion Prevention Strategies	185	93.136	11679SUB//U01CE002880-01	15,347	—
						250,204	—
		The roles of TIRs and HSPA5 uptake		93.262	5R01OH010469-04	374,332	153,794
		Prioritizing public health efforts to improve the care and quality of life for people with lupus	142	93.424	1782018/5NU38OT000225-05	13,437	—
		An Individually Tailored, Family-Centered Intervention for Childhood Obesity: Connecting Services in Pediatric Primary Healthcare, the Home, and the Community	17	93.535	18-277//U18P006255	274,013	—
		An Individually Tailored, Family-Centered Intervention for Childhood Obesity: Connecting Services in Pediatric Primary Healthcare, the Home, and the Community.	17	93.535	16-995//U18DP006255-01	(53,639)	—
						220,374	—
		Rural Cancer Prevention Center 2014-2019 (SIP-15-007)	241	93.542	3210000447-17-156/3U48DP005014-03S6	1,571	—
		Evaluation Center Extension to Evaluate PrEP Implementation and Data to Care Services	41	93.940	CONTRACT PO #42045/236320/50105365//U62PS005021	37,159	—
		Effect of ACA Medicaid Expansion on Diabetes: Diagnosis, Treatment, Patient Compliance, and Health Outcomes		93.945	5U18DP006120-04	416,320	87,412
		Illinois Perinatal Quality Collaborative (ILPQC)		93.946	76380016E//5NU38DP005367-03-00	181,939	144,062
		Intergovernmental Personnel Act Agreement for Theresa Rowe		93.RD			

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Department of Health and Human Services (continued)		Affordable Care Act Teaching Health Center (THC) Graduate Medical Education (GME) Payment Program		93.530	6 T91HP215420603	\$ 2,735,022	1,254,995
						2,994,679	1,253,257

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Cluster title/Federal grantor	Subagency	Project title	Pass-through ID number	CFDA	Sponsor award number	Federal expenditures	Passed-through to subrecipients
Department of Health and Human Services (continued)		CRCNS US-French Research Proposal Plastic Neural Circuits in Olfactory Learning	93.173	5R01DC015137-03		\$ 52,728	—
		Defining molecular mechanisms in the SLC26 family of proteins	93.173	5R03DC014553-03 REVISED		90,490	—
		Dynamic interaction among proteins in hair cells	93.173	2R56DC011813-06		326,217	—
		Effects of hearing experience on audiovisual speech perception in children	93.173	1R56DC015492-01A1		186,659	55,343
		Elucidating Mechanisms Underlying Odor-Mediated Memory Consolidation During Sleep and Wakefulness	93.173	5F31DC015374-03		41,139	—
		fMRI Correlates of Speech and Voice Impairment in Parkinson's Disease	93.173	5F31DC0151717-02		38,128	—
		Genetic Determinants of Taste Preferences and Risk of Metabolic Disease	93.173	7R03DC013373-03		53,000	—
		Glomerular domains and olfactory circuitry	93.173	5R03DC014565-03		118,959	—
Hearing in nr95 -7uYear93.45 0 T1gD 0 Tw2(subrg nitsopR2 Tw2(huREVISED)TJ 751.28e/Federal cognitive, 0 TdITw2uLeaproteins)T.483 -9 Td [(93.173)-2555.7(7R03DC017.5501 Tw 45.8TJ 7.5507 Tw 52.046 0 Td 6205128)T] 0 4.2 -4.2 0 16.9596 7236,742 Tm (—)TJ 0 Tw 05 -7uVe.2 0 180.3595 209.1595 Tm							

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Department of Health and							

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Department of Health and Human Services (continued)		African American Cardiovascular pharmacogenetic CONsorTium (ACCOuNT): discovery and translation Effectiveness and Implementation of a Mindfulness Intervention for Depressive Symptoms	93.307		5U54MD010723-03 REVISED	\$ 1,281,788	609,428

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Department of Health and Human Services (continued)		ECOG-ACRIN NCORP Research Base: Cancer Care Delivery Research (CCDR)	69	93.395	1UG1CA189828-01-NWU2/UG1CA189828-04	\$ 32,051	—
		ECOG-ACRIN Nursing Committee	69	93.395	U10CA180820-01-NWU3	4,545	3,607
		ECOG-ACRIN Operations Center (PI Committee)	69	93.395	U10CA180820-01-NWU2	14,387	—
		EMR Adverse Drug Event Detection for Pharmacovigilance	247	93.395	WA00356827/RFA2015095	30,353	—
		Exploiting synthetic-lethal interactions to target triple-negative breast cancer		93.395	5R00CA175700-05	110,738	—
		Exploring the Potential of Dual Kinase JAK 1/2 Inhibitor Ruxolitinib (INC424) with Reduced Intensity Allogeneic Hematopoietic Cell Transplantation in Patients with Myelofibrosis	100	93.395	AGMT-4/9/15//5P01CA108671-08	12,763	—
		High Density Lipoprotein Nanoparticles for siRNA Delivery		93.395	4R01CA167041-05	9,325	5,448
		Institutional Membership-Alliance for Clinical Trials in Oncology	4	93.395	Fully-executed 11/13/13	29,053	—
		Loss of Mitochondrial Sirt3, Decreased MnsOD Activity, and IR Induced Genomic Instability		93.395	5R01CA152601-09 REVISED	344,977	—
		MPD Research Consortium	100	93.395	0254-4051-4609/2P01CA108671-10A1	74,001	—
		NKG2D superagonist co-stimulation to enhance adaptive immunotherapy of cancer		93.395	7R01CA208246-02	256,472	—
		NRG Oncology Foundation, Inc. Member Institution Purchased Service Agreement (PSA)	151	93.395	Agmt Signed 9/5/14	26,776	—
		Phase II trial of mTORC1/mTORC2 inhibitor AZD2014 for sporadic meningioma	131	93.395	229149 AZD2014/1R01CA201130-01A1 REVISED	7,167	—

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Department of Health and		4D Flow MRI-based assessment of atrial fibrillation		93.837	5F30HL137279-02	\$ 46,815	—

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Department of Health and Human Services (continued)		INVESTED - : Influenza Vaccine to Effectively Stop Cardio Thoracic Events and Decompensated heart failure (INVESTED)	31	93.837	SUB 5.22.17/5U01HL130163-02	\$ 35,672	—
		Joint Effect of Malpractice Risk and Financial Incentives on Cardiac Testing	84	93.837	14-M49-Mod#4/5R01HL113550-05	188,643	—
		Low Intensity Exercise intervention for peripheral artery disease: The LITE Trial		93.837	5R01HL122846-04 REVISED	715,616	110,545
		Lymphatic Conference		93.837	1R13HL136113-01	19,741	—
		Mapping electrogram morphology recurrence for atrial fibrillation ablation	88	93.837	1R41HL127907-01A1 NU//1R41HL127907	12,362	—
		Maternal-Offspring Metabolics: Family Intervention Trial (MOMFIT)		93.837	3U01HL114344-05S1	274,148	21,405
		Mechanical circulatory support: Measures of adjustment and quality of life		93.837	5R01HL130502-03 REVISED	611,708	205,143
		Mechanisms of sulfonylurea receptor mediated cardiomyopathy		93.837	5R01HL122109-04 REVISED	385,957	192,819
		Mechanistic insights into HIV-mediated heart failure with preserved ejection fraction		93.837	1R01HL140973-01	182,787	—
		Mechanistic insights into the deleterious effects of SIRT2 in the heart under stress conditions		93.837	1R01HL138982-01A1	183,533	—
		Mediators of Atherosclerosis in South Asians in America	225	93.837	8696sc/R01HL093009	206,364	—
		Metabolic Pathways Underlying the Contrasting Sodium-BP and DASH/OmniHeart-BP Relationships		93.837	5R01HL135486-02 REVISED	433,288	176,995
		Metabolomics-Measured Urinary Metabolites/Diet & BP, 17 Random Samples		93.837	5R01HL084228-08	(28)	(28)
		Methods to Improve Personalized Cardiovascular Disease Prevention Across the Life Course		93.837	5R01HL136942-02 REVISED	187,378	—
		MMP Responsive Nanoparticles for Treating Acute Myocardial Infarction	224	93.837	97966869 // 1R01HL139001-01	109,934	—
		Modeling the role of the genome in chemotherapy induced cardiotoxicity using iPSC		93.837	5R00HL121177-04	110,578	—
		Modulating senescence in induced pluripotent stem cell-derived endothelial cells for vascular disease modeling and therapy		93.837	5F32HL137292-02	62,542	—
		Modulation of Macrophage Function through Alternative Splicing in Cardiometabolic Diseases		93.837	7K08HL135348-02	11,685	—
		Molecular mechanisms of Foxc-mediated angiogenesis		93.837	1R01HL144129-01	36,791	—
		MRI of Diffuse Left Ventricular Fibrosis in A (M e876lternative Splicing in Cardio431 2n-124555.y507 Tw 46.429 0 Td (62.542)T) 0 455.7195-051HL135486-0244129-01)T) 4.9364 Tw 4547.07 0 Td (62.542)T) 0 4.2 -4.22 0 2284587 729.4173 Tm (—)JT) 0 Tw 0 612 -462 0 255.9587 2iDNAal broed Td ifie Tm (Mapy inp					

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Department of Health and Human Services (continued)		Wnt-beta-catenin cross interactions in alveolar macrophages and epithelial cells in persistence of SSC-ILD		93.838	1R01HL134800-01A1	\$ 494,291	—	
		1/2 CATHETER-DIRECTED THERAPY FOR CHRONIC DVT(C-TRACT TRIAL)	285	93.839	WU-18-261/UG3HL138325	9,096,448	673,292	
		Aberrant megakaryopoiesis in the myeloproliferative neoplasms.		93.839	5R01HL112792-06	2,170	—	
		Defining the Role of IQGAP1 in Leukocyte Transmigration in vitro and in vivo		93.839	5F30HL134202-03	624,665	47,883	
		EHR Anticoagulants Pharmacovigilance	247	93.839	WA00406335-RF52015140/5R01HL125089-02	49,645	—	
		Generating Human Cord-Blood-Derived Functional Megakaryocytes and Platelets	237	93.839	7800 Amd 2 // R01HL130760-03 / R01HL130760	67,571	—	
		Membrane-Cytoskeletal Remodeling in Platelet Biogenesis		93.839	5K08HL114871-03	110,988	—	
		Multiscale Modeling of Myelodysplastic Syndromes	282	93.839	FP00000825_SAO03/7R01HL128173-02	105,236	—	
		Vascular-Targeting Genomic and Genetic Strategies for Acute Chest Syndrome	107	93.839	IN4687826NW/2R01HL11656-06	208,973	—	
						4,297	—	
						1,173,545	47,883	
			"RISK" The nervous joint: New concepts in the development of osteoarthritis.	178	93.846	16100402-Sub01/1R61AR073576-01	45,181	—
			3-D printed hyperelastic bone composites for bone regeneration and spine fusion		93.846	1R01AR069580-03	355,991	32,376
			A Multi-Center Prospective Study of Quality of Life in Adult Scoliosis	285	93.846	WU-10-154 Amendment 04 //1R01AR055176-02	3,120	—
			A Regulatory Checkpoint in the Pathogenesis of Inflammatory Arthritis		93.846	5R01AR064349-05 REVISED	251,360	—
			AAD-PEPR: Asthma and Atopic Dermatitis Validation of PROMIS Pediatric Instruments		93.846	1U19AR069526-01 REVISED	668,205	236,383
			Adipokine Modulation of Fibrosis: Novel Scleroderma Pathway		93.846	5R03AR066343-03 REVISED	47,521	—
			Algorithms to Identify Systemic Lupus from Electronic Health Record Data		93.846	1R21AR072263-02	174,094	—
			Association of genetic and autoantibody signatures with SLE clinical course	214	93.846	000504653-SC002//5R01AR064820-03	58,189	—
			Biomarkers and Pathogenesis of Systemic Sclerosis (NIAMS: CORT)	30	93.846	4500001925/5P50AR060780-05	(17,793)	—
			Breaking down barriers: defining the role of EphA2 in building epidermal tight junctions in atopic dermatitis		93.846	1K01AR072773-01A1	5,566	—
			Cadherin clusters and actin filaments		93.846	5R01AR070166-02	357,128	—
			Caspase 8: A Novel Suppressor of Dendritic Cell-Mediated Autoimmunity		93.846	5K01AR064313-05	54,681	—
			Causes and Roles of Hypercellularity in Preclinical Rheumatoid Arthritis		93.846	117944//5R01AR070171-02	3,267	—
			Central Pain Mechanisms, Pain Intensity and Drug Response in Rheumatoid Arthritis	31	93.846	7R01AR064850-06	275,688	86,102
			Contribution of Adipocytes and Adipose Secreted Factors to Fibrosis in Systemic Sclerosis		93.846	1K08AR070285-02	40,910	—
			Core Center for Clinical Research at Northwestern University		93.846	Require5P30AR072579-02	644,566	—
			Desmoplakin Assembly and Function in Epidermis (R37 MERIT Extension Application R37AR043380)		93.846	5R37AR043380-23	509,267	—
			Development of a Novel RA/Atherosclerosis Mouse Model		93.846	5R01AR064546-05	285,344	—
			EphA/Ephrin – A Signaling in Epidermal Differentiation and Disease		93.846	4R01AR062110-05	236,781	—
			EphA/Ephrin-A Signaling in Epidermal Differentiation and Disease		93.846	5R01AR062110-04	(5)	—
			Evolving Adaptive and Effector Mechanisms from Pre-RA Through Established Disease	232	93.846	FY17.090.001/5UH2AR067681-03	427,904	95,104
			Failed Regeneration in the Muscular Dystrophies: Inflammation, Fibrosis and Fat – Admin Core	233	93.846	UPDSP0011905//U54AR052646	6,653	—
			Function of Desmoglein 1/Pemphigus Foliaceus Antigen		93.846	4R01AR041836-24	1,302	—
			Function of Desmoglein 1/Pemphigus Foliaceus Antigen		93.846	5R01AR041836-26	505,845	—
			Gene expression signatures for treatment response in systemic sclerosis	38	93.846	Agr. 10/06/2015//5R44AR061920-03	12,213	—
			Glycosphingolipids Mediate Diabetic Wound Healing Impairment		93.846	5R01AR068375-03	439,367	—

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Department of Health and Human Services (continued)		Synthetic Oleananes: Innovative Treatment of Fibrosis		93.846	5R03AR065800-03	\$ (12,055)	—
		The pathogenic mechanism of anti-phosphatidylethanolamine antibodies		93.846	1R21AR071705-01A1	13,348	—
		The Vasculitis of Kawasaki Disease		93.846	5R21AR068041-02	(381)	—
		The Vasculitis of Kawasaki Disease		93.846	5R21AR068041-02	26,239	26,096
		Topical Delivery of siRNA Nanoconjugates: Suppressing Epidermal Hyperplasia		93.846	5R01AR060810-04	20	—
		Translation of novel and repurposed drugs to address the acute and late effects of mustard exposure	36	93.846	RES512302//1U01AR071168-01A1 REVISE	13,755	—
		Validation of PROMIS Measures in Children with Brain Tumors		93.846	5R01CA174452-04 REVISED	43,475	1,400
		Vasculitis Clinical Research Consortium (VCRC)	259	93.846	572644//5U54AR057319-15	2,369	—
						13,142,855	1,473,987
		10/22 Diabetes Prevention Program Outcomes Study (DPPOS) Phase 3- Research Project		93.847	5U01DK048380-25 REVISED	360,780	—

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Department of Health and							

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D00045241(93853)-265.7 Human Services (continued)	010085-110021//1U01NS092076-01A1	Vitamin D and Type 2 Diabetes (D2d study) 1,513 Td (2,7)TJ 7.5507 Tw	1.398206	93.847	5008752-SERV//01DK098245-04 4.2 -4.2 0	\$ 358,577	729,418
			205	93.847	5015643-SERV//2U01DK098245-06	26,130	13,786
		(CREST-2) Trial: Carotid Revascularization and Medical Management for Asymptomatic Carotid Stenosis Trial	136	93.853	NWU-187276-02//5U01NS080168-03	14,118	—
		A Novel Pharmacological Treatment for Neuropathic Pain	16	93.853	Agmt 3/3/17//1R44NS100173-01 REVISED	31,467	—
		A Primate Model of an Intra-Cortically Controlled FES Prosthesis for Grasp		93.853	5R01NS053603-10	(242)	—
		A primate model of an intra-cortically controlled FES prosthesis for grasp		93.853	5R01NS053603-12 REVISED	490,674	—
			131	93.853	Agmt 4/24/17//5U01NS090259-03	75,628	P-123.864
					5R01NS099210-03	294,201	—
					5R01NS096746-04 REVISED	265,065	through
			166	93.853	5R00NS089858-05	305,454	—
				93.853	41880-A Amd 1//1R21NS083578-01A1	(87)	P-123.864
				93.853	5R01NS095634-04	439,360	—
				93.853	5R00NS078055-05	—	—
				93.853	5R01NS095251-03	903,680	—
				93.853	5R01NS080619-05	205,029	—
				93.853	5R01NS064135-09 REVISED	386,832	—
				93.853	1R01NS104295-01	298,939	—
			176	93.853	5R01NS072381-09	187,692	—
					5R01NS096376-02	418,643	—
					5R01NS085002-05	590,190	—
					5R01NS079482-05	109,415	—
				93.853	5K23NS092975-04	179,364	—
					5U01NS080818-04	1,203,779	—
					5U10NS077271-07	231,654	—
				93.853	1U24NS107213-01	12,380	—
					AGMT00000 775//1U01N104326-01	2,765	—
					5R01NS053792-16	387,365	Passed-through
				93.853	5R01NS085770-05	330,858	—
					7R21NS093439-03	83,244	—
				93.853	1R01NS105502-01A1	30,390	—
				93.853	4R01NS075075-05 0 Td (Passed-through)Tj -385.91727	—	Pcie586 93.853
					C 9orif72-Related ALS And FTD	—	—
					1R01NS104219-01A1 REVISED	—	—
					5R21NS096572-02 REVISED	138,072	—
					228d-4574.4(93.853)-2555.7(FP063797-1//R01NS093908)]TJ 7.5507	108,122	58.288 0

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Department of Psychiatry Human Services (continued)	Network6olin-4.Se.28ty P0r p eral2 0 7 -2.571	Targeted delivery of CNS neurotransmitter substrates for drug delivery	254	93.853	17-022-02 // 1R15NS099981-01A1	\$ 9,190	—
		IDO1 and immunotolerance in glioblastoma.		93.853	5R01NS097851-03	389,345	—
		IL13Ra2 targeted T-cell therapy for glioma		93.853	7R21NS089802-03	(10,104)	—
		IL13Ra2 targeted T-cell therapy for glioma		93.853	7R21NS089802-03	63,825	63,368
		Immune Modifying Microparticles for Acute Treatment of Spinal Cord Injury		93.853	5F30NS093811-03 REVISED	44,382	—
		Impact of direct dopaminergic neuromodulation of the subthalamic nucleus in health and in experimental Parkinson's disease		93.853	4R01NS026543-27	(32,328)	—
		Induced Pluripotent Stem Cell Core for NINDS Investigators		93.853	5F31NS100357-02	38,021	—
		Information Processing in the Thermo-sensory System of Drosophila Melanogaster		93.853	4P30NS081774-05	(940)	—
		Integration of synaptic excitation and inhibition in the deep cerebellar nuclei		93.853	5F31NS093873-03	30,139	—
		Intranasal Stem-Cell Based Therapy of Glioblastoma		93.853	5F31NS092329-03 REVISED	4,678	—
		Intrinsic Plasticity and Information Storage in Cerebellar Purkinje Cells		93.853	5R01NS087990-05 REVISED	463,568	8,392
		Investigating the role of extremely long-lived mitochondrial proteins in mammalian neurons	228	93.853	FP038888//R01NS62771	15,405	—
		Investigation of ALS caused by mutant CHCHD10		93.853	1F32NS106812-01A1	9,877	—
		Investigation of Histone H3 Post-Translational Modifications in Pediatric Brainstem Glioma		93.853	5R01NS099638-03	526,188	71,170
		Ionic currents and spiking in cerebellar nuclear neurons		93.853	5K08NS097624-03	164,416	113,400
		Ionic Currents and Spiking in Cerebellar Nuclear Neurons		93.853	5R37NS039395-17	402,228	—
		Kainate Receptors in Signaling Between Hippocampal Mossy Cells and Granule Cells		93.853	4R37NS039395-18	106,407	—
		LRP4 signaling in neuromuscular junction formation	36	93.853	1R21NS09040-01	(7,955)	—
		LRRK2-mediated molecular and synaptic events in the striatum		93.853	RESS13371//2R01NS082007-07	2,149	—
		L-type channels as pharmacological targets for the treatment and prevention of febrile seizures		93.853	5R01NS097901-03	343,133	—
		Lysosomal Dysfunction due to PGRN Mutations		93.853	5R21NS096424-02 REVISED	114,288	—
		Magnetic-vortex microdisks for glioma therapy		93.853	5F99NS105182-02	30,422	—
		Maternal Outcomes and Neurodevelopmental Effects of Antiepileptic Drugs	72	93.853	7R01NS077388-05	60,715	—
		Mechanical Signals and Trigeminal Ganglion Neuron Responses During Whisking		93.853	T652681//4U01NS038455-15	112,132	—
		Mechanisms of Distorted Inputs in Chronic Spinal Injury		93.853	5F31NS090872-03 REVISED	9,494	—
		Mechanisms of Early Recurrence in Intracranial Atherosclerotic Disease (MyRIAD)	249	93.853	5R01NS089313-05 REVISED	128,057	—
		Mechanisms Underlying Tau45-230-Induced Neuronal Degeneration	249	93.853	SPC-000246//5R01NS084288-05	33,808	—
		Metabolic Control of Immune Suppression in Gliomas		93.853	662706//5R01NS084288-05	15,802	—
		MicroRNAs and Perinatal Hypoxia-Ischemia		93.853	5R01NS090993-04	355,313	—
		Minimally Invasive Surgery plus rt-PA for ICH Evacuation	122	93.853	5R01NS093903-04	578,819	(6,412)
		Molecular basis of Scapulothoracic SMA and Charcot-Marie-Tooth disease type 2C		93.853	5R01NS086945-04	274,902	170,646
		Molecular Mechanisms Integrating Circadian Timing and Photic Signaling		93.853	2001995429//U01NS080824-02	75,551	—
		Molecular Mechanisms of CRAC Channel Gating		93.853	5R01NS078287-04	(330)	—
		Motor Cortical Function During Motor Learning with a Brain-Machine Interface		93.853	1R01NS106955-01A1	67,707	—
		Mouse model studies of TMEM230-linked Parkinson's disease		93.853	5F31NS01830-02 REVISED	43,053	—
		MyCog – Rapid detection of cognitive impairment in everyday clinical settings		93.853	5F31NS092356-03 REVISED	58	—
		Myoelectric Computer Interface to Reduce Muscle Co-Activation after Stroke		93.853	5R01NS099623-03	532,280	61,238
		Myoferlin in muscle membrane fusion and repair		93.853	5UG3NS105562-02	477,567	—
		Myoferlin in muscle membrane fusion and repair		93.853	5R21NS084069-02	(1,530)	—
		Network for Emergency Care Clinical Trials: Strategies to Innovate Emergency Care Clinical Trials Network (SIREN) – Network Clinical Center (Hub) (U24)		93.853	5R01NS047726-12	5,913	—
				93.853	2R01NS047726-13A1	251,396	—

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Department of Health and Human Services (continued)		Pilot Project: Communication Bridge: Web-based speech-language therapy for individuals with dementia	225	93.853	9788so/5U54NS092089-03	\$ 24,537	—
		POINT: Platelet-Oriented Inhibition in New TIA	71	93.853	Agreement signed 11/9/10 // 1U01NS026835-01A1	29,168	—
		Postsynaptic functions of neuronal adhesion molecules: focus on Cntnap2		93.853	5R01NS100785-02	566,683	—
		Probing Somatosensory Representations in the Cuneate Nucleus of Awake Primates	228	93.853	FP060211//R01NS095162	230,903	—
		Radiation + Temozolomide Induced Mutation and Malignant Progression of GBM		93.853	5R01NS095642-03 REVISED	358,528	—
		Radiographic markers of clinical function in Cervical Spondylotic Myelopathy		93.853	5K23NS091430-02 REVISED	179,106	4,297
		Rational derivation of DA neuron subtypes from iPS cells for improved modelling of Parkinson's disease		93.853	5R01NS096240-03 REVISED	650,009	—
		Regulating fibrosis and muscle growth in the muscular dystrophies		93.853	5P01NS072027-06	23,231	—
		Regulation of CD4+ T cell-mediated Demyelination Following Oligo Ablation		93.853	1R01NS099334-02	430,234	108,396
		Regulation of Gliotransmission by Store-Operated Calcium Channels		93.853	5F30NS090817-03 REVISED	38,361	—
		Regulation of neural progenitor cell migration by store-operated CRAC channels		93.853	5R01NS094011-04 REVISED	464,068	—
		Research Education Program for Trainees in Neurology		93.853	5R25NS070695-09	133,661	—
		Reverse Engineering Motor Unit Discharge	273	93.853	UWSC8225*(BPO2840)/5R01NS085331-03	224,015	—
		Rhythmicity and Synchrony in the Basal Ganglia		93.853	3P50NS047085-15S1	1,102,837	40,228
		Role of PCDH12 in neural circuit formation during brain development and disease		93.853	5R00NS099943-04	239,257	—
		ScanImage: Flexible Software for Laser Scanning Microscopy in Neuroscience	280	93.853	R24NS086549-NU Amd 2	33,120	—
		Sensorimotor processing, decision making, and internal states: towards a realistic multiscale circuit model of the larval zebrafish brain	94	93.853	138078-5105175 // 1U19NS10465301 REVISED	38,953	—
		Spatiotemporal Integration of Mechanical Information in the Rat Brainstem		93.853	5F31NS090SED		—

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Department of Health and Human Services (continued)		The Role of MHC class Ib in T cell development and infectious disease		93.855	4R01AI040310-19	\$ 66,551	—	
		The role of non-classical MHC class I molecules in immune responses to Mycobacterium tuberculosis infection		93.855	1R01AI141083-01	116,590	—	
		The roles of Sirt1, a deacetylase, in immune tolerance and autoimmunity		93.855	5R01AI079056-09	183,462	—	
		The roles of Synoviolin in immune tolerance and autoimmunity		93.855	5R01AI108634-04	215,025	—	
		The Structure and Function of the Influenza Virus Genome		93.855	4R01AI020201-33	92,107	—	
		Third Coast Center for AIDS Research		93.855	5P30AI117943-04 REVISED	1,849,999	355,344	
		Tocopherol regulation of the development of responsiveness to allergen early in life		93.855	5R01AI127695-02	488,896	14,137	
		Tolerogenic delivery of donor antigens for cardiac allograft protection	274	93.855	2U01AI102456-06REVISED//773K161	5,724	—	
		Translational Research Training in Infectious Diseases		93.855	4T32AI095207-05 REVISED	(9,569)	—	
		Type II Secretion and Legionella pneumophila Infection		93.855	5R01AI043987-19	235,412	—	
		US Prevalence, Distribution and Determinants of Adult and childhood Food Allergy (UPDATE-FA)	14	93.855	901526-NU//1R21AI135702-01	57,691	—	
		Using siglecs and their ligands to treat allergic diseases SALTAD		93.855	1U19AI136443-01	243,622	65,207	
		UTI Immune Modulation by LPS Structure		93.855	5F31AI106357-05 REVISED	(38)	—	
		Virulence Mechanisms of the Emerging Pathogen Stenotrophomonas maltophilia		93.855	5R21AI117082-02	412	—	
		ZIP Immunology Consensus Substudy	100	93.855	0255-8661-4609//5U19AI118610-03	35,332	—	
			10068R21AI106357-05		REV7-19		37,135,915	4,620,077

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Department of Health and		Medical Scientist Training Program					

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Department of Health and Human Services (continued)		Endometriosis and Retinoids		93.865	5R37HD038691-19	\$ 690,276	—
		Engineering Career Development Center in Movement and Rehabilitation Sciences		93.865	4K12HD073945-05	181,675	179,368
		Genes, Androgens and Intrauterine Environment in PCOS		93.865	3P50HD044405-15S1	340,095	146,796
		High-performance, low-cost, passive prosthetic knees optimized to replicate physiological gait in multiple mobility scenarios	132	93.865	S4526-PO176307//1R03HD092676-01	2,314	—
		Homeostatic to reactive hyaluronan matrices in ovarian reproductive aging		93.865	1R01HD095726-01	110,064	—
		How Housing Vouchers Affect Biology & Health	122	93.865	2003262020 // U01HD075957	83,970	—
		Improve dynamic lateral balance of humans with SCI	169	93.865	CL5253//1R01HD083314	4,743	—
		Infant attention in the context of language		93.865	1F32HD095580-01	4,067	—
		Influence of rapid sensory feedback on motor learning following stroke		93.865	1F32HD094552-01 REVISED	48,092	—
		Integrative Genomics, Epigenomics and Bioinformatics Analyses of Human Uterine Fibroids		93.865	1R01HD089552-03	627,960	99,296
		Intensive Rehabilitation Research Grant Writing Workshops in the United States	138	93.865	MUSC14-024//5T15HD074546-07	10,668	—
		Intensive Rehabilitation Research Grant Writing Workshops in the United States43u110,668 —					

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Department of Health and							

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Department of Health and Human Services (continued)		PAGES (Progressing through the Ages: Global Climate Change, Evolution, and Societal Well-being)	238	93.351	076638-15799 Amd 01 // 1 R25 OD020203	\$ 36,525	—	
		Science Club Summer Camp: Training Teachers and Youth in Authentic STEM Practice		93.351	5R25OD020222-02	(97,885)	—	
		Understanding the mechanism(s) of systemic antibody delivery, distribution, and localization to mucosal sites in the in vivo macaque model		93.351		1K01OD026571-01	3,984	—
	Substance Abuse and Mental Health Services		Science Club Summer Camp: Training Teachers and Youth in Authentic STEM Practice		93.859	8R25GM129223-04	506,268	—
			APA/SAMHSA Fellowship for Lisette Rodriguez-Cabezas in Support of: APA/Substance Abuse and Mental Health Services Award	13	93.243	Award Letter 4/5/16 // 5T06SM060562-06	3,537	—
			Pilot Evaluation of Crisis Support over Messenger (CSOM)	173	93.243	Agmt 2/7/18	45,875	—
							49,412	—
Department of Health and Human Services Total						345,583,946	49,333,373	
Department of Homeland Security		Development of a Real Time Decision Support System for Proactive Response, including Recourse Planning, under Uncertain Active Cascading Emergencies	17	97.061	18-409 // 2017-ST-061-QA001-01	50,086	—	
		Undergraduate Research Assistant for A Real-Time Decision Support System for Proactive Response, including Recourse Planning, under Uncertain Active Cascading Emergencies	17	97.061	ASUB00000017//2017-ST-061-QA001-01	7,900	—	
		Chalcogenide semiconductors for g-ray detection from earth abundant elements			Deapar98 Tm (Department of.2 Td [(9724.5-01)]TJ (428,30227)Tj 0 4.2 -4.2 081Td .84386.0PIE6)erT957 a>1S286 Td7.1(Deue1.690-0c16 Tm (49,333.373)Tj 0 Tw 0 4.us Supp	57,986	—	

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Department of Transportation (continued)		Development of an Analysis/Modeling/Simulation (AMS) Framework for V2I and CV Environment	127	20.RD	P010198023 R2 // DTFH6116D00030	\$ 107,518	—
		Estimation of Travel Time Distributions Along User-Defined Travel Paths	127	20.RD	P010198023 NO. R4 // DTFH6116D00030	110,258	—
		Fundamentals of Travel Time Reliability Guide	127	20.RD	P010198023 R1 // DTFH6116D00030	21,921	—
		Integrated Modeling for Road Condition Prediction (IMRCP) Phase 3	127	20.RD	TO#2 P0#10203492 /D5FH6116D00053	35,457	—
		Role of Calibration in Quantitative Alternatives Analysis	127	20.RD	P010203492 R1 // DTFH6116D00053	69,269	—
		Task Integrated Modeling for Road Condition Prediction – Phase 2	127	20.RD	P010178562 Mod //DTFH61-12-D-00045	667	—
		Tools for Tactical Decision-Making/Advancing Methods for Predicting Performance	127	20.RD	13-014/P010160797 R1//DTFH61-12-D-00020	1,616	—
		Tools for Tactical Decision-Making/Advancing Methods for Predicting Performance	127	20.RD	P010198023 NO. R3 // DTFH6116D00030	49,990	—
						<u>478,884</u>	<u>—</u>
		Department of Transportation Total				478,884	—
Department of Veterans Affairs	Edward Hines, Jr. VA Hospital	Elisa Gordon VA IPA – Spark Seed Funding	64.018	Agmt 04/25/18		9,980	—
		Intergovernmental Personnel Act (IPA) Assignment Agreement for Elisa J. Gordon	64.018	578/151		13,282	—
		Intergovernmental Personnel Act (IPA) Assignment Agreement for Elisa Jill Gordon: VA Innovators Network Accelerator Program	64.018	IPA Agmt Signed 07/14/17 (578/151)		2,593	—
Department of Veterans Affairs (continued)		Intergovernmental Personnel Act (IPA) Assignment Agreement for Jennifer Kahn	64.018	IPA Agmt Signed 05/31/2017 (578/151)		5,805	—
		Intergovernmental Personnel Act (IPA) for Geoffrey Brown	64.018	IPA Agmt – 578/151		74,814	—
		IPA Agreement for Kwang-Youn A. Kim: Maneuverability Enhancement Following Spinal Cord Injury	64.018	578/151		<u>8,707</u>	<u>—</u>
					<u>115,181</u>	<u>—</u>	
	Jesse Brown VA Medical Center	Intergovernmental Personnel Act (IPA) Assignment Agreement for Damiano Fantini	64.018	IPA Agmt Signed 08/28/2017		33,913	—
		Intergovernmental Personnel Act (IPA) Assignment Agreement for David Z. Ivancic	64.018	IPA Agmt. Signed 11/09/17		69,588	—
		Intergovernmental Personnel Act (IPA) Assignment Agreement for Elena Livia Sima, FY17	64.018	IPA Agmt. Signed 04/12/2017		61,478	—
		Intergovernmental Personnel Act (IPA) Assignment Agreement for Elspeth Beauchamp	64.018	IPA Agmt. Signed 09/27/2016		74,880	—
		Intergovernmental Personnel Act (IPA) Assignment Agreement for Ewa Kosciuczuk	64.018	Agmt. signed 10/13/2017 (537/151)		30,582	—
		Intergovernmental Personnel Act (IPA) Assignment Agreement for Hao Wang	64.018	IPA Agmt Signed 10/06/2016		(22,114)	—
		Intergovernmental Personnel Act (IPA) Assignment Agreement for Hao Wang	64.018	IPA Agmt. Signed 05/09/18 (537/151)		16,465	—
		Intergovernmental Personnel Act (IPA) Assignment Agreement for Iman Sarami	64.018	IPA Agmt Signed 11/09/17		2,194	—
		Intergovernmental Personnel Act (IPA) Assignment Agreement for Linda India	64.018	IPA Agmt. Signed 11/09/17		8,300	—
		Intergovernmental Personnel Act (IPA) Assignment Agreement for Meng Shang	64.018	IPA Agmt Signed 11/09/2017		40,200	—
		Intergovernmental Personnel Act (IPA) Assignment Agreement for Michael Cavanaugh	64.018	IPA Agmt Signed 01/25/18		24,676	—
		Intergovernmental Personnel Act (IPA) Assignment Agreement for Michael Dixon	64.018	Agmt Signed 11/07/2017		56,586	—
		Intergovernmental Personnel Act (IPA) Assignment Agreement for Monica Chi	64.018	IPA Agmt Signed 11/13/2017		35,252	—
		Intergovernmental Personnel Act (IPA) Assignment Agreement for Salvatore Condello (FY17)	64.018	IPA Agmt. Signed 09/19/2017 (YR 02)		87,506	—
		Intergovernmental Personnel Act (IPA) Assignment Agreement for Saul Soberanes	64.018	IPA Agmt. Signed 11/27/2017		54,411	—
		Intergovernmental Personnel Act (IPA) Assignment Agreement for Seek-Jo Kim	64.018	IPA Agmt Signed 04/12/2017		50,320	—
		Intergovernmental Personnel Act (IPA) Assignment Agreement for Shantel Olivares: Molecular Mechanisms of Nonalcoholic Fatty Liver Disease	64.018	IPA Agmt Signed 11/09/2017		51,929	—
		Intergovernmental Personnel Act (IPA) Assignment Agreement for Vera Shively	64.018	IPA Agmt. Signed 07/06/2016		6,031	—
		Intergovernmental Personnel Act (IPA) Assignment Agreement for Weiqi Huang	64.018	IPA Agmt. signed 12/06/17 (537/151)		22,924	—
		Intergovernmental Personnel Act (IPA) Assignment Agreement for Yanni Yu	64.018	Agmt Signed 07/26/18		28,619	—
		IPA for Paul Cheresh	64.018	IPA Agmt Signed 11/13/2017		70,792	—
		VA IPA for Kazumi Ebine	64.018	537/151		<u>69,288</u>	<u>—</u>
						<u>873,820</u>	<u>—</u>
	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 02/10/17		<u>11,682</u>	<u>—</u>
						<u>1,000,683</u>	<u>—</u>
	Department of Veterans Affairs Total					1,000,683	—
Environmental Protection Agency		The Multi-Ethnic Study of Atherosclerosis and Air Pollution (MESA Air): Next Stage	273	66.509	UWSC10113//838300001-0	30,081	—
		Building Energy Efficiency in the U.S. Industrial Sector	101	66.RD	13MGB00001-101//EP-BPA-12-H-0012	43	—
						<u>30,124</u>	<u>—</u>
	Environmental Protection Agency Total				30,124	—	
National Aeronautics and Space Administration		A Novel Approach to the Common Envelope Evolution	187	43.001	TM6-17005X//NAS8-03060	27,034	—
		A simulation pipeline for the study of kilonovae light curves and r-process nucleosynthesis in compact binary mergers	256	43.001	180042//80NSSC18K0565	24,681	—
		Biologic and Resource Analog Investigations in Low Light Environments (BRAILLE)	25	43.001	BMSA-006 // 80NSSC17M0054	21,998	—
		Bringing Gravitational Wave Astronomy to Light: Chandra X-ray Localization of LIGO-Virgo GW Sources	187	43.001	G07-18033X//NAS8-03060	29,020	—
		Continued Chandra Observations of GW170817 (Proposal 19408644-C)	187	43.001	DD8-19101A//NAS8-03060	6,075	—
		Continued X-Ray Monitoring of GW170817 with Chandra	187	43.001	DD7-18096A // NAS8-03060	5,044	—
		Energetics and Environment of Hydrogen-poor Core-Collapse SNe	187	43.001	heG05-16064A//NAS8-03060	(105)	—
	Late-time X-rays to map the Zoo of Engine-driven Stellar Explosions	187	43.001	G07-18057X // NAS8-03060	15,446	—Bringing	

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National Aeronautics and Space		Late-time X-rays to map the Zoo of Engine-driven Stellar Explosions					

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National Aeronautics and Space Administration (continued)		The unprecedented metamorphosis of SN2014C: from a H-stripped explosion to a strongly interacting SN		43.001	NNX17AG80G	\$ 31,063	—	
		Convective Effects on Solid/Liquid Interface Dynamics in the Freeze-Casting Process		43.008	NNX16AI78A	1,612,684	29,085	
		Further Development of Aperture: A Precise Extremely large Reflective Telescope Using Re-configurable Elements		43.009	NNX16AL31G-000001	73,336	45,606	
		Compact Robust Integrated PPM Laser Transceiver Chip Set with High Sensitivity, Efficiency, and Re-Configurability		43.012	NNX16AE02G 000003	242,513	133,458	
		Efficient and Scalable Fabrication of Solid Oxide Fuel Cells via 3D-Printing		43.012	80NSSC17K0192-P00001	240,069	42,968	
						60,002	—	
						300,071	42,968	
	NASA Lyndon B. Johnson Space Center		A US-Russian Collaborative Proposal for Data Collection in HERA: The Relationship between Composition, Interpersonal Relations, and Team Effectiveness in Space Crews	62	43.002	501237SG138 Amd 2 // NNX16AQ48G	76,469	—
			CREWS: Crew Recommender for Effective Work in Space		43.003	NNX15AM32G 000008	307,322	134,997
			HERO Twin Astronaut Study Consortium (TASC) Project: Metagenomic Sequencing of the Bacteriome in GI Tract of Twin Astronauts		43.003	NNX14AH26G-000005	36,498	—
		SCALE: Shared Cognitive Architectures for Long-term Exploration		43.003	80NSSC18K0221	334,232	—	
		Team Task Switching in Astronaut Crews on the International Space Station: Integrating Multiteam Membership, Multiteam Systems, multi-tasking, & Multidimensional Networks to Monitor & Enable Functional Work Shifts in Astronaut Crews		43.003	80NSSC18K0276	320,839	—	
		NRI: Collaborative Research: Integrating Physics Models and Control Methodologies for Enhanced Legged Locomotion on Yielding Terrain		43.007	NNX15AR24G 000007	998,891	134,997	
						144,072	—	
					National Aeronautics and Space Administration Total	5,555,113	529,678	
National Foundation of the Arts and Humanities	Institute of Museum and Library Services	Engaging Engineering Experts: Facilitating Family STEM Learning in Museums and Libraries ThrooTm (134.rD38 Amd 2s17)TJ.2.4387 2s5t1						

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National Science Foundation (continued)		Collaborative Research: Elucidation and Evaluation of Strategies to Mitigate Secondary Reactions in Cellulose Pyrolysis for Enhanced Production of Hydrolysable Anhydrosugars		47.041	CBET-1435228	\$ 27,351	—
		Collaborative Research: Engineering Polymer Nanodielectric Systems using a Descriptor-based Design Methodology		47.041	CMMI-1334929	(1,400)	—
		Collaborative Research: Ergodic Trajectories in Discrete Mechanics		47.041	CMMI-1334609	(201)	—
		Collaborative Research: Formation and Stability of Eutectic Nanostructures in Laser-Irradiated Particle Suspensions		47.041	CMMI-1663196	6,755	—
		Collaborative Research: GOALI: Modeling and optimizing patient-flow dynamics in hospitals and hospital networks		47.041	CMMI-1763100	853	—
		Collaborative Research: Integrated Measurement and Predictive Modeling of Adsorbate Coverage and Compositional Effects on Catalytic Activity		47.041	CBET-1264963	(3)	—
		Collaborative Research: Model-Based Multidisciplinary Dynamic Decisions in Design		47.041	CMMI-1537641	93,412	—
		Collaborative Research: Quantitative Analysis of Liposome Deformation at Nanoscale Using Resistive Pulse Sensing in Solid State Nanopores		47.041	CMMI-1740011	77,923	—
		Collaborative Research: Workshop on Acquiring and Sharing Data within the CMMI Research Community		47.041	CMMI-1654469	10,419	—
		Computational Discovery and Analysis of Catalytic Routes to Bio-based Renewable Chemicals	119	47.041	Agmt 3/10/2017 // 400-72-04-33-15F1 Amd 2	36,057	—
		Control of Hybrid Locomotion with Impacts		47.041	CMMI-1436297	100,403	—
		CPS: Synergy: An Integrated Simulation and Process Control Platform for Distributed Manufacturing Process Chains		47.041	CMMI-1646592-002	57,669	—
		Curved Waterjet-Guided Laser Micro-Manufacturing		47.041	CMMI-1234491	(298)	—
		Cutting and Shuffling: A New Dynamical Systems Paradigm for Mixing		47.041	CMMI-1435065	69,154	—
		Data-driven multiscale damage and failure prediction		47.041	CMMI-1762035	988	—
		Design and exploration of high-temperature steels for electric power generation applications		47.041	CMMI-1462850	76,329	—
		Diffraction-grating coupled surface emitting Terahertz quantum cascade laser source for high power, room temperature continuous wave operation		47.041	ECCS-1607838	117,082	—
		EAGER: MOCVD Growth of beta-(Al,In,Ga)2O3 for Transistor Applications		47.041	ECCS-1748339	90,013	—
		EAGER: Optical Coherence Elastography (OCE): A novel tool for rapid, non-destructive, spatially resolved quantification of mesoscale biofilm mechanical properties		47.041	CBET-1701105	43,765	—
		EFRI 2-DARE: Scalable Growth and Fabrication of Anti-Ambipolar Heterojunction Devices		47.041	EFRI-1433510	393,653	136,700
		EFRI CEE: Macro genomic engineering via modulation of chromatin nanoenvironment		47.041	EFMA-1830961	711	—
		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	265,709	—
		Electric Field Guided Micro Additive Manufacturing Process.16 71.1 Tm 93.482 -27 Td [(47.041)-2555.7(CMMI-1435065)]TJ ofFlexEa4 0 4.2 -4.2 0 309.y0TJ 7.5507 Tw 53.433 0 T8 -36 TS2					

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National Science Foundation (continued)		Charge Transfer as a Probe of the Permeability of Organic Adlayers on Colloidal Semiconductor Quantum Dots	47.049	CHE-1400596		\$ 2,319	—	
		Coherent and Incoherent Control in Material Systems	47.049	CHE-1465201		7,847	—	
		Cohomological and singularity invariants via Hodge modules and derived equivalences	47.049	DMS-1405516-002		11,815	—	
		Collaborative Research: Algorithms for Large-Scale Stochastic and Nonlinear Optimization	47.049	DMS-1620022		119,650	—	
		Collaborative Research: Axion Resonant InterAction DetectioN Experiment (ARIADNE)	47.049	PHY-1626505		6,403	—	
		Collaborative Research: Axion Resonant InterAction DetectioN Experiment (ARIADNE) – a continuation proposal	47.049	PHY-1806671		27,950	—	
		Collaborative Research: CDS&E: FIRE: Physically-Predictive Cosmological Simulations of Galaxy Formation with Resolved Feedback	47.049	AST-1412836		24,463	—	
		Collaborative Research: Controlled Disorder and Topological Defects in Magnetically Frustrated Thin Film Metamaterials	47.049	DMR-1507058		25,200	—	
		Collaborative Research: Designer Glass Ceramics	47.049	DMR-1600837		73,212	—	
		Collaborative Research: Enhancing Access to Radio Spectrum for Real-time Monitoring and Control	47.049	AST-1547328		86,419	—	
		Collaborative Research: Factorization Homology and the Cobordism Hypothesis	47.049	DMS-1509040-002		66,182	—	
		Collaborative Research: Factorization Homology, Deformation Theory, and Duality	47.049	DMS-1812057		51,781	—	
		Collaborative Research: Fluctuating Hydrodynamics of Suspensions of Rigid Bodies	47.049	DMS-1418672		6,104	—	
		Collaborative Research: High-Throughput Quantification of Solid State Electrochemistry for Next Generation Energy Technologies	47.049	DMR-1505103 004		159,929	—	
		Collaborative Research: Integrated Computational and Experimental Studies of Solid Oxide Fuel Cell Electrode Structural Evolution and Electrochemical Characteristtuoxide						

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Cluster title/Federal grantor	Subagency	Project title	Pass-through ID number	CFDA	Sponsor award number	Federal expenditures	Passed-through to subrecipients
National Science Foundation (continued)		Interfacial ordering in aqueous solutions: X-ray scattering studies		47.049	DMR-1612876	\$ 128,129	—
		Investigation of High Strain-Rate Deformation and Failure of FCC and BCC Nanostructures		47.049	DMR-1408901-003	71,775	—
		IRES: Nanomaterials undergraduate Research in Germany (NanoRING)		47.049	IIA-1460031	37,052	—
		Joint US-Africa Materials Advanced Studies Institute		47.049	DMR-1539724	27,769	—
		JUAMI (Joint Undertaking for Africa Materials Institute)		47.049	DMR-1756245	12,520	—
		Kahler manifolds with curvature lower bound		47.049	DMS-1709894	49,122	—
		Knots, Sheaves, and Mirrors		47.049	DMS-1406024	85,791	—
		Linear Partial Differential Equations on Singular Spaces		47.049	DMS-1600023	64,479	—
		Manipulating Multi-Spin Dynamics in Systems Targeting Organic Spintronics		47.049	CHE-1266201	(1,045)	—
		Mathematical Modeling of Biomembranes		47.049	DMS-1312935	654	—
		Measuring gravity at the micron scale with laser-cooled trapped microspheres: a continuation		47.049	PHY-1806686	39,247	—
		Microlocal Sheaves, Symplectic Geometry and Applications in Representation Theory		47.049	DMS-1710481	16,303	—
		Midwest Dynamical Systems Seminar		47.049	DMS-1600654	11,714	—
		Midwest Probability Colloquium 2017-2019		47.049	DMS-1744209-001	16,099	—
		Midwest Topology Seminar		47.049	DMS-1413786	3,917	—
		Midwest Topology Seminar		47.049	DMS-1747457	8,761	—
		Moduli of Galois representations and applications		47.049	DMS-1802037	11,916	—
		Moduli Spaces of complex dynamical systems		47.049	DMS-1517080	209	—
		Molecular Ion Entanglement Detection by Single-Molecule Fluorescence		47.049	PHY-1404455-002	29,048	—
		Molecular Plasmonics: Single Molecule and Ultrafast Surface-Enhanced Raman Spectroscopy		47.049	CHE-1506683	109,502	—
		MRSEC: Center for Multifunctional Materials		47.049	DMR-1720139	993,792	30,140
		MRSEC: Center for Nanoscale Science		162	5204-NU-NSF-0620-1// DMR-1420620	80,103	—
		Nanoscale Curvature Effects on the Properties of Anisotropic Nanomaterials		47.049	CHE-1507790	144,887	—
		New Lewis Bases for Chemical Catalysis		47.049	CHE-1665141	122,985	—
		New Stereoselective Fragment Coupling Reactions for Organic Synthesis		47.049	CHE-1361173	151,848	—
		Nonequilibrium States of Topological Quantum Fluids and Unconventional Superconductors		47.049	DMR-1508730-003	68,677	—
		Nonlinear Optical Surface Studies of Iron and its Oxides		47.049	CHE-1464916	81,514	—
		Nonlinear PDEs and complex geometry		47.049	DMS-1406164	11,404	—
		Northwestern University Quantitative Biology Center (NUQuB)		47.049	DMS-1764421	99,863	—
		Nucleic Acid Nanostructures and their Cellular Transport Mechanisms		47.049	DMR-1822422	82,683	55,139
		OP: Coherence and Energy Transfer Processes in Lattice Plasmon Lasers		47.049	DMR-1608258	150,381	—
		Organo-f-Element Chemistry: Integrated Synthetic, Mechanistic, and Catalytic and Thermochemical Studies		47.049	CHE-1464488	227,000	—
		Oxide Surfaces, From Bulk to Nanoparticles		47.049	DMR-1507101 001	97,852	—
		Predictive Computational Modeling of Two-Dimensional Materials: Defects and Morphologies Properties and Applie227		250	47.049 3003700315 // DMR-1509033 Amd 2	78,559	—

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Cluster title/Federal grantor	Subagency	Project title	Pass-through ID number	CFDA	Sponsor award number	Federal expenditures	Passed-through to subrecipients
National Science Foundation (continued)		Workshop on Multidisciplinary Complex Systems Research		47.049	DMS-1647351	\$ 2,703	—
		Workshops: Homotopy Harnessing Higher Structures		47.049	DMS -1833295	6,619	—
						13,106,665	246,650
		Australia cretaceous climate and tectonics: oceanic anoxic events and cooling within the I. cretaceous greenhouse at SHL	50	47.050	71(GG009393) // OCE-1450528-2	10,789	—
		CAREER: South Greenland's Holocene Climate History Reconstructed Using Three Paleolimnological Approaches		47.050	PLR-1454734	174,085	—
		CO2 evasion from the Greenland ice sheet		47.050	PLR-1304686/002	13,713	—
		Collaborative Research: Assessing the Impact of Small, Canadian Arctic River Flows (SCARFs) to the Freshwater Budget of the Canadian Archipelago		47.050	PLR-1304675	98	—
		Collaborative Research: NSF/EAR-BSF: Coupled Sand and Clay Motion, Bed Morphodynamics, and Porewater Exchange		47.050	EAR-1734300	90,669	—
		Collaborative Research: Evolution of the Midcontinent Rift as a Rift/Lip Hybrid		47.050	EAR-1550108	65,623	—
		Critical Zone Observatory Network for Intensively Managed Landscapes	238	47.050	072212-14695	60,783	—
		EAGER: FEW: Life cycle comparison of water, energy, nutrient, and carbon requirements of urban and conventional food production strategies		47.050	EAR-1541891	27,138	—
		EarthCube IA: Collaborative Proposal: Advancing biogeoscience community standards and cyberinfrastructure via Critical Zone domain engagement in synthesis science		47.050	ICER-1540938	(2,331)	—
		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	48,477	—
		Hazards SEES Type 2: From Sensors to Tweeters: A Sustainable Sociotechnical Approach for Detecting, Mitigating, and Building Resilience to Hazards	260	47.050	0036115 (011529-3) // OCE-1331463	34,922	—
		Hydration State of the Transition Zone and Lowermost Mantle		47.050	EAR-1452344-002	146,075	—
		INSPIRE Track 1: Earthcasting fluvial systems: Physical, ecological, and biogeochemical dynamics		47.050	EAR-1344280	154,823	47,772
		The Ca and Sr (radiogenic and stable) isotope geochemistry of weathering in Iceland		47.050	EAR-1613359	111,083	—
						935,947	47,772
		A Low-Cost Integrated Agent-based Modeling and Physical Computing Platform		47.070	IIS-1438813	3,080	—
		AF: Small: Collaborative Research: Boolean function analysis meets stochastic design		47.070	CCF-1814706	36,515	—
		AF: Small: Non-revelation Mechanism Design		47.070	CCF-1618502	103,415	—
		AtF: Collaborative Research: Algorithms for Probabilistic Inference in the Real World		47.070	CCF-1637585	15,350	—
		AtF: Mechanism Design and Machine Learning for Peer Grading		47.070	CCF-1733860	112,241	—
		BD Spokes: SPOKE: MIDWEST: Collaborative: Advanced Computational Neuroscience Network (ACNN)	107	47.070	BL-4831218-NWUC//IIS-1636893	2,622	—
		BD Spokes: SPOKE: MIDWEST: Collaborative: Integrative Materials Design (IMaD): Leverage, Innovate, & Disseminate		47.070	IIS-1636909	11,403	—
		BIGDATA: EAGER: Catalyzing Research in Multimodal Learning Analytics		47.070	IIS-1832234	134,011	—

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Cluster title/Federal grantor	Subagency	Project title	Pass- through ID number	CFDA	Sponsor award number	Federal expenditures	Passed-through to subrecipients
National Science Foundation (continued)		Collaborative Research: SI2-SSI: Scalable Infrastructure for Enabling Multiscale and Multiphysics Applications in Fluid Dynamics, Solid Mechanics, and Fluid-Structure Interaction Collaborative Research: SI2-SSI: Software Frameworkn		47.070	ACI-1450374	\$ 100,689	—

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Cluster title/Federal grantor	Subagency	Project title	Pass-through ID number	CFDA	Sponsor award number	Federal expenditures	Passed-through to subrecipients	
National Science Foundation (continued)		TWC SBE: Medium: Collaborative: Incentive Compatible Wireless Security		47.070	CNS-1314620	\$ 67,485	—	
		TWC: Medium: Collaborative: Neuroscience Meets Computer Security: Designing Systems Secure Against Coercion Attacks		47.070	CNS-1228357	4,017	—	
		TWC: TTP Option: Medium: Collaborative: Identifying and mitigating trust violations in the smartphone ecosystem		47.070	CNS-1408790	132,404	—	
		WiFiUS: Collaborative Research: Ultra-low latency and High Reliability for Wireless IoT		47.070	CNS-1701921	20,871	—	
		Workshop: Doctoral Consortium for HCAMP 2017		47.070	IIS-1748375	8,234	—	
		XPS: EXPL: CCA: Merging Parallel Run-times and Operating Systems		47.070	CCF-1533560 001	102,906	—	
		XPS: FULL: FP: Design and Synthesis of New Energy-efficient Self-healing Computing Electronics with Real-time Configurability		47.070	CCF-1533656	195,811	—	
						7,079,113	270,804	
			Biophysical Studies of Metalloenzymes		47.074	MCB-1515981 001	334,623	—
			CAREER: Uncovering Quantitative Design Principles of RNA Regulators for Synthetic Biology		47.074	MCB-1650040 002	115,577	82,486
			CEIN: Predictive Toxicology Assessment and Safe Implementation of Nanotechnology in the Environment	222	47.074	0521 G RA112-005 Amd. 4/ DBI-126	87,700	—
			Collaborative Research: EAGER: Customized cell biosensors for interrogating cancer cell physiology		47.074	MCB-1745753	34,330	—
			Collaborative Research: A New Twist on Muscle Contraction		47.074	IOS-1456623	125,323	—
			Collaborative Research: Bilateral BBSRC-NSF/BIO: Synthetic Biology for Lignin Utilization		47.074	MCB-1614953	105,333	—
			Collaborative Research: Glycoengineering Without Borders: Bacterial Cell-Free Glycoprotein Synthesis		47.074	MCB-1413563	113,906	—
			Collaborative Research: IDBR: Type A: The Nanosizer: A New Tool For the Photochemical Fabrication of Bioactive Nanoarrays		47.074	DBI-1353682	(8,900)	—
			Collaborative Research: Repurposing the translation apparatus for mirror image polypeptide synthesis		47.074	MCB-1716766	19,812	—
			Collaborative Research: Uncovering the Role of Sirtuins in Linking Food Availability and Stress Tolerance Through Multi-Scale Signaling Networks in Mussels		47.074	IOS-1557495	32,552	—
			CRCNS: Functional imaging and computational models of place field integration in pyramidal cell dendrites		47.074	IOS-1516235-001	266,741	—
			Dissecting the anatomy of regulatory divergence		47.074	IOS-1708518	106,231	—
			EAGER: Toward engineering a synthetic enhancer in Caenorhabditis elegans		47.074	MCB-1749307	43,113	—
			IDBR: Development of Higher Eigenmode Ultrasound Bioprobe for Sub-Cellular Biological Imaging		47.074	DBI-1256188	52,988	—
			IDBR: Type A: Directly Integratable Photoacoustic Microscopy with Established Optical Microscopy for Comprehensive Sub-cellular Biological Imaging		47.074	DBI-1353952/002	17,164	—
			Regulation of Nuclear Receptor Function during Drosophila Development	52,988	52,988			

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Cluster title/Federal grantor	Subagency	Project title	Pass-through ID number	CFDA	Sponsor award number	Federal expenditures	Passed-through to subrecipients
National Science Foundation		Doctoral Dissertation Research: Cultural and Social Dimensions of Anti-Mullerian Hormone Screening					

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Cluster title/Federal grantor	Subagency	Project title	Pass-through ID number	CFDA	Sponsor award number	Federal expenditures	Passed-through to subrecipients
National Science Foundation (continued)		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	\$ 11,843	6,728
		Learning Ethnographies of New Engineers: A New Approach to Understanding the Transition from School to Work		47.076	DRL-1252372	114,514	51,961
		Learning Labs: Using Videos, Exemplary STEM Instruction and Online Teacher Collaboration to Enhance Elementary Math and Science Practice and Classroom Discourse	198	47.076	2015-02//1417757	65,438	—
		Methods to Protect Privacy in State Longitudinal Data Systems Research Files	229	47.076	5968-NU 02 // DGE-1437953	129,400	—
		MOOC-Supported Learning Communities for Future STEM Faculty: Multiple Paths to Advance Evidence-based Teaching Across the Nation	141	47.076	RC103138NW//DUE-1347605	14,121	—
		NRT-DESE: Training in Data-Driven Discovery – From the Earth and the Universe to the Successful Careers of the Future		47.076	DGE-1450006-003	336,930	—
		Preparing Future Faculty to Improve STEM Education: Broadening the National Impact of the CIRTL Network	274	47.076	795K406//1726625	4,274	—
		SPReAd: Broadening implementation of an innovative STEAM learning environment: Scaling up FUSE Studios through two models of partnership engagement with industry and schools		47.076	DRL-1657438	527,081	36,188
		Supporting Scientific Practices in Elementary and Middle School Classrooms		47.076	DRL-1020316 Amd 005	77,517	68,699
		Using hyperlocal and networked strategies to support computer science education for middle grade students in Chicago		47.076	DRL-1824551	320,066	—
						<u>8,960,841</u>	<u>264,827</u>
		IRES: US-Dutch Research Collaboration in Cultural Heritage Science		47.079	IIA-1460143	99,338	—
		PIRE: Computationally-Based Imaging of Structure in Materials (CuBISM)		47.079	OISE-1743748	429,940	—
						<u>529,278</u>	<u>—</u>
		Collaborative Research: Three-dimensional Microstructural and Chemical Mapping of Solid Oxide Fuel Cell Electrodes: Processing, Structure, Stability, and Electrochemistry		47.082	DMR-0907639	(785)	—
		Rheo-X-Ray Investigation of Structure Development in Polymer Melts Under Uniaxial Extension Flow		47.082	DMR-0907068	(3,610)	—
						<u>(4,395)</u>	<u>—</u>
		PIRE: Integrated Computational Materials Engineering for Active Materials and Interfaces in Chemical Fuel Production	238	47.083	2015-02361-02 // 1545907 01	85,755	—
		GHz Time-of-Flight Depth Sensing for Robotic Bin Picking	194	47.RD	Amtg. 08/31/17//1647888	37,233	—
						<u>43,840,805</u>	<u>2,256,132</u>
Nuclear Regulatory Commission	United States Nuclear Regulatory Commission	Service Lifetime Extension of Nuclear Power Plants: Prediction of Concrete Aging and Deterioration Through Accelerated Tests, Nondestructive Evaluation, and Stochastic Multiscale Computations		77.009	NRC-HQ-60-14-G-0003 M0007	(23,763)	—
		Service Lifetime Extension of Nuclear Power Plants: Prediction of Concrete Aging and Deterioration Through Accelerated Tests, Nondestructive Evaluation, and Stochastic Multiscale Computations		77.009	NRC-HQ-60-14-G-0003 M0007	118,615	95,282
					<u>94,852</u>	<u>95,282</u>	
					<u>94,852</u>	<u>95,282</u>	
					<u>94,852</u>	<u>95,282</u>	
Scholarship Foundations	Vietnam Education Foundation	Vietnam Education Foundation Fellowship	85.802	Agmt 2/19/13	1,317	—	
		Vietnam Education Foundation Fellowship – Hoang Thai Nguyen	85.802	Letter 10/14/14	(8)	—	
					<u>1,309</u>	<u>—</u>	
					<u>1,309</u>	<u>—</u>	
Social Security Administration		Regulating Markets for Retirement Products: Evidence from Chile	28	96.007	5002110-S4 // 5 RRC08098402-08-00	41,113	—
					<u>41,113</u>	<u>—</u>	
					<u>41,113</u>	<u>—</u>	
U.S. Agency for International Development		Comparing HIV Mucosal Targets in US and Kenyan Populations	115	98.001	7503// AID-OAA-A-16-00032	254,854	—
		Next-generation products for prevention of HIV infection in women (Project NIX HIV)	67	98.001	NXS-17-001 // AID-OAA-A-17-00014	371,602	—
		Testing the Effectiveness of Tailored Non-Formal Education Interventions Promoting Critical Thinking and Emotional Literacy in the Middle East	250	98.001	3003719520 // AID-OAA-A-15-00075 02	116,367	—
					<u>742,823</u>	<u>—</u>	
		An osmotic pump vaginal insert for sustained delivery of anti-retrovirals	54	98.RD	MAPS2-15-056//AID-OAA-A-14-00010	(16,976)	—
		An osmotic pump vaginal insert for sustained delivery of anti-retrovirals	54	98.RD	MAPS2-15-056//AID-OAA-A-14-00010	66,973	63,197
		Preclinical Development of Longer Acting Topical Antiretroviral Delivery Systems	54	98.RD	MAPS2-14-029 //AID-OAA-A-14-00010	39,388	—
					<u>832,208</u>	<u>63,197</u>	
					<u>832,208</u>	<u>63,197</u>	
					<u>472,169,587</u>	<u>59,544,217</u>	

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038A1763P397/6-4-27-19-0394270 (6,0625,145,286,807) 4.0-0 (15,833,277,533,157,64,005,-) Tj0T 4.2-0 167.0226,7293,678,500,0F-06485930-422-4326718018226 7292 171 Tm 6--							
Department of Education		Federal SEOG 2017-2018	84.007	P007A171246		\$ 2,186,241	—
		Federal Work-Study 2016-2017	84.033	P033A161246		365,783	—
		Federal Work-Study 2017-2018	84.033	P033A171246		3,062,324	—
		Federal Work-Study 2018-2019	84.033	P033A181246		88,602	—
		Federal Work-Study Administ	959,Q CioT0 sto958UdwClustFY 60,614 0 Td (84.033)Tj 0 4.27 Tw 46.42520 Td (3,06280,000 4.2 -4.2 0 167.0396 209,118 Tm (-)Tj 0 Tw 0 4.2 0 167.0380.7195 676,500(-)3,596,709 Tw 0 4.2 0 167.0380.7195 171 Tm 6--Tj 0 Tw 0 4.2 -4.2 0 172.4388,7595 598 Tj 0Federal Work-				

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Cluster title/Federal grantor	Subagency	Project title	Pass-through ID number	CFDA	Sponsor award number	Federal expenditures	Passed-through to subrecipients
Department of Health and Human Services	Centers for Disease Control and Prevention	Illinois Perinatal Quality Collaborative Partnership (LPQC) – Federal Flow-through	104	93.667	FCSWU04929/G17011LSOSR	\$ 24,270	—
		Promoting Adolescent Health Through School-Based HIV-STD Prevention and School-Based Surveillance	43	93.079	15-0303-PRC2/5U87PS004162-03	23,864	12,318
		Hepatitis C Community Alliance for Testing and Treatment in Chicago (HepCCATT)	228	93.270	FP058209-B/5NU51PS004607	72,354	—
		Meeting the Needs of Early Childhood Systems to Integrate Evidence-Based Parenting Programs	19	93.424	33-18-8812/6NU38OT000140-05-02	43,530	10,512
		Assuring Comprehensive Prevention and Treatment for Families Affected by HIV to Eliminate Perinatal HIV Transmission in the United States	255	93.939	34-5311-3017-001/NU65PS923665	20,895	—
Department of Health and Human Services (continued)	Centers for Medicare & Medicaid Services	Evaluation Center Extension to Evaluate PrEP Implementation and Data to Care Services	41	93.940	CONTRACT PO #42045/236320/50105365/U62PS005021	147,639	5,203
		Strengthening the Infrastructure of the Evaluation Center	41	93.940	CDPH032017/NU62PS003644-05-05	29,492	—
	Centers for Medicare & Medicaid Services	Illinois Perinatal Quality Collaborative Working Together for Healthier Moms and Babies in Illinois		93.946	1NU58DP006360-02-00	177,131	5,203
		The HIV Outpatient Study (HOPS) Activity to Abstract Data from Persons Receiving Ambulatory Care for HIV Infection in the United States (the "Prime Agreement")	39	93.U03	Agr. 11/19/2015 // 200-2015-63931	183,500	63,048
		Great Lakes Practice Transformation Network	108	93.638	5345/L1CMS331444-02-00	4,304,727	3,084,085
	Substance Abuse and Mental Health Services	MACRA-Provider Resource Network (M-PRN)	7	93.U04	SC-17-009/HHSM-500-2017- 00004	367,304	35,584
		Center for Child Trauma Assessment and Service Planning		93.243	5U79SM061254-04	64,652	—
		Center for Child Trauma Assessment, Services and Interventions		93.243	5U79SM080018-03	658,349	78,661
		Lake County BHTCC	57	93.243	LC# 15058/H79SM061684	(1,149)	—
	Department of Health and Human Services Total						6,124,788
Department of Homeland Security		DHS Center of Excellence for Accelerating Operational Efficiency (CAOE) – Preaward Planning Meeting	17	97.077	Agmt 11/2/2017	11,738	—
Department of Homeland Security Total						11,738	—
Department of Justice	Bureau of Justice Assistance	Center on Wrongful Convictions of Youth		16.746	2016-FA-BX-0001	136,761	—
	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	47,922	—
Department of Justice Total						184,683	—
Department of Labor	Occupational Safety and Health Administration	Northwestern university machine hazards and machine guarding training for students and young workers ages 16-24		17.502	SH-31214-17-60-F-17	139,038	—
Department of Labor Total						139,038	—

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 Legend for Pass-Through Award Prime Recipients
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ID	Sponsor full name
43	Chicago Public Schools
44	Children's Hospital Boston
45	Children's Hospital of Philadelphia
46	Cincinnati Children's Hospital Medical Center
47	Citrine Informatics
48	Cleveland Clinic Lerner College of Medicine of Case Western Reserve University
49	Cold Spring Harbor Laboratory
50	Columbia University
51	Communication Disorders Technology, Inc.
52	Community Action Project of Tulsa County, Inc.
53	Connecticut Science Center
54	CONRAD Program
55	COPD Foundation
56	Cornell University
57	County of Lake
58	Covitect Inc.
59	D&S Consultants, Inc.
60	Dakota Consulting, Inc.
61	Dartmouth College
62	DePaul University
63	DermaXon LLC
64	Digital Optics Technologies, Inc.
65	Dow Chemical Company
66	Duke University
67	Eastern Virginia Medical School
68	East-West Management Institute Inc.
69	ECOG-ACRIN Medical Research Foundation, Inc.
70	Elorac, Inc.
71	EMMES Corporation
72	Emory University
73	Engineering and Software System Solutions, Inc.
74	Fermi Research Alliance, LLC, Fermi National Acceleratory Laboratory
75	Florida Association of Healthy Start Coalitions, Inc.
76	Florida State University
77	Ford Motor Company
78	Forsyth Institute
79	Frontier Science and Technology Research Foundation
80	FuelCell Energy, Inc.
81	Fundação Faculdade de Medicina
82	Gallaudet University
83	General Motors Corporation
84	George Washington University

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Legend for Pass-Through Award Prime Recipients
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ID	Sponsor full name
253	University of Missouri-Columbia
254	University of Nebraska at Kearney
255	University of Nebraska Medical Center
256	University of New Hampshire
257	University of North Carolina at Chapel Hill
258	University of Notre Dame
259	University of Pennsylvania
260	University of Pittsburgh
261	University of Rochester
262	University of Southern California
263	University of Tennessee
264	University of Texas at Austin
265	University of Texas at Dallas
266	University of Texas at San Antonio
267	University of Texas Health Science Center
268	University of Texas M. D. Anderson C
269	University of Texas Medical Branch at Galveston
270	University of Texas Southwestern Med
271	University of Utah
272	University of Virginia
273	University of Washington
274	University of Wisconsin-Madison
275	University of Wisconsin-Milwaukee
276	University of Wisconsin-Whitewater
277	UT-Battelle, LLC, Oak Ridge National Laboratory
278	Vanderbilt University
279	Veterans Medical Research Foundation of San Diego
280	Vidrio Technologies, LLC
281	Vignet Inc.
282	Virginia Commonwealth University
283	Virginia Polytechnic Institute and State University
284	Wake Forest University Health Sciences
285	Washington University in St. Louis
286	Wearifi, Inc.
287	West Virginia University
288	WestEd
289	Yale University

NORTHWESTERN UNIVERSITY

Notes to Supplementary Schedule of Expenditures of Federal Awards

Year ended August 31, 2018

(1) Organization and Scope of Operations

(Continued)

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

The Board of Trustees
Northwestern University:

We have audited, in accordance with the auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in Government Auditing Standards, issued by the Comptroller General of the United States, the consolidated financial statements of Northwestern University (the University), which comprise the consolidated statement of financial position as of August 31, 2018, the related consolidated statements of activities and cash flows for the year then ended, and the related notes to the consolidated financial statements, and have issued our report thereon dated December 19, 2018.

Internal Control Over Financial Reporting

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

A deficiency in internal control exists when the design or operation of a control does not allow management or employees, in the normal course of performing their assigned functions, to prevent, or detect and correct, misstatements on a timely basis. A material weakness is a deficiency, or combination of deficiencies, in internal control, such that there is a reasonable possibility that a material misstatement of the entity's consolidated

Purpose of this Report

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

KPMG LLP

Chicago, Illinois
December 19, 2018

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

The Board of Trustees
Northwestern University:

Report on Compliance for Major Federal Program

We have audited Northwestern University's (the University's) compliance with the types of compliance requirements described in the OMB Compliance Supplement that could have a direct and material effect on the University's major federal program for the year ended August 31, 2018. The University's major federal program is identified in the summary of auditors' results Section of the accompanying schedule of findings and questioned costs.

Management ¶ Responsibility

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

Auditors ¶ Responsibility

Our responsibility is to express an opinion on compliance for the University's major federal program based on our audit of the types of compliance requirements referred to above. We conducted our audit of compliance in accordance with auditing standards generally accepted in the United States of America; the standards

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

We have audited the consolidated financial statements of the University as of and for the year ended August 31, 2018, and have issued our report thereon dated December 19, 2018, which contained an unmodified opinion on those financial statements. Our audit was conducted for the purpose of forming an opinion on the consolidated financial statements as a whole. The accompanying supplementary schedule of expenditures of federal awards is presented for purposes of additional analysis as required by the Uniform Guidance.

NORTHWESTERN UNIVERSITY
Schedule of Findings and Questioned Costs
Year ended August 31, 2018

(Continued)

NORTHWESTERN UNIVERSITY
Schedule of Findings and Questioned Costs
Year ended August 31, 2018

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

Finding 2018-001 Inadequate Process for Updating Property Management Records

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

Program Name: Research and Development Cluster

CFDA # and Program Expenditures: Various (\$472,169,587)

Federal Award Numbers: Various See schedule of award numbers

Federal Award Year: Various See schedule of award numbers

Questioned Costs: None

Condition Found

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

NORTHWESTERN UNIVERSITY
Schedule of Findings and Questioned Costs
Year ended August 31, 2018

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

During our physical observation of 40 pieces of equipment purchased with R&D Cluster funds, we noted 6 items included on the R&D Cluster inventory list (with a cost value of \$641,848 and a net book value of \$225,122) that could not be located for observation. It was determined that these items had been disposed of previously; however, the property records had not been updated to reflect the disposals.

While the University has documented policies and procedures which have been communicated and are

(Continued)

NORTHWESTERN UNIVERSITY
Schedule of Findings and Questioned Costs
Year ended August 31, 2018

Statistical Sampling

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

Recommendation

We recommend the University implement procedures to ensure property records are updated in a timely manner to reflect equipment disposals.

Views of University Officials

Management agrees. Exceptions noted during external audit interim fieldwork were corrected for fiscal year end close. Additional efforts to identify and record potential missing disposals for the fiscal year 2018 re-inventory process were also implemented (as described below in steps 1-4).

In fiscal year 2019, Accounting Services shall reiterate proper procedures to department Unit Representatives regarding the disposition of equipment, including timely submission of disposal requests.

In addition, Accounting Services shall continue the following steps introduced in summer 2018 designed to enhance controls around completeness and accuracy of disposals:

1. Department representatives submit individual asset disposal requests through NU Financials.
2. Department representatives submit biennial re-inventory sheets to Accounting Services.
3. Accounting Services compares disposals per the biennial re-inventory sheets to requests per NU Financials for completeness and accuracy.
4. Accounting Services then follows up on discrepancies with department representatives as necessary.

Note: Previously, Accounting Services made the disposal entries based on the biennial re-inventory sheets alone.

Further in fiscal year 2019, Accounting Services shall perform its own audit of the re-inventories prepared by the department Unit Representatives. This entails judgmentally selecting assets from the re-inventory sheets, and verifying the existence of assets and accuracy of the information (e.g., location, custodian, etc.) through observation. Accounting Services will judgmentally gear its sample towards higher risk items, including higher dollar values and older assets. In addition, Accounting Services audit sample size shall increase to address risks highlighted from this control activity observation.

These procedures will be fully in place before August 31, 2019.

(Continued)

NORTHWESTERN UNIVERSITY
Schedule of Findings and Questioned Costs
Year ended August 31, 2018

During our testing of single audit reports for 40 subrecipients (with aggregate expenditures of \$34,503,656), we noted that single audit desk reviews for 10 of those subrecipients (with total expenditures of \$8,346,825) were not performed on a timely basis. Specifically, the single audit report reviews were not

(Continued)

NORTHWESTERN UNIVERSITY
Schedule of Findings and Questioned Costs
Year ended August 31, 2018

Recommendation

We recommend the University review its current procedures to determine the necessary changes needed to ensure single audit reports are reviewed on a timely basis and any management decisions are issued within required timeframes.

Views of University Officials

Management agrees. Although these desk reviews were not completed within the required timeframe, none

NORTHWESTERN UNIVERSITY
 6 F K H G X O H R I) L Q G L Q J V D Q G 4 X H V W L R Q H G & R V W V
 Table of Award Numbers
 Year ended August 31, 2018

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

Award Number			
920200	111672/SUM1AI068636-12	1K01DK114395-01A1	1R21AG049385-02
0000025075//7R01DC014463-02	1120566-75050/SU01EB017695-04	1K01OD026571-01	1R21AG056903-01
00000755//5R01HL115813-04	113896//5R01HL08851-07	1K08AR070285-02	1R21AG060203-01
00004887/HHSN261201200034I	114835//5R01CA203731-03	1K08DA045575-01	1R21AG060267-01
00004892/HHSN261201200034I	1150119-294722-P00007//FA9550-12-1-0458	1K08HL141659-01	1R21AH17238-01
00009607//1330914	115219//5U34AR069187-02	1K22AI118421-02	1R21AH121742-01
000504653-SC002//5R01AR064820-03	1165293//SUM1AI068636-11	1K22AI136691-01	1R21AH125968-01A1
000507860-008//W81XWH-15-1-0705	116706//2R01HL091069-06	1K23HL136891-02	1R21AI131035-01
000514985-001//7R01HL131110-03	11679SUB//1U01CE002880-01	1K25DK113242-01A1	1R21AI131087-01A1
0007A-6 Mod 1 // N00014-14-14-2-0002	117944//5R01AR070171-02	1K99GM123195-01A1	1R21AI131179-01A1
0012774A//5R01MH112768-02 REVISED	12052504-NU//5R01AR064251-05	1OT2OD026557-01 REVISED	1R21AI132848-01A1
001-Amend1//5U01HL128954-03	123775//W81XWH-17-1-0427	1P01DK117824-01	

NORTHWESTERN UNIVERSITY

NORTHWESTERN UNIVERSITY
 6 F K H G X O H R I) L Q G L Q J V D Q G 4 X H V W L R Q H G & R V W V
 Table of Award Numbers
 Year ended August 31, 2018

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

Award Number			
5R03AI126090-02	5R35GM118144-03	693JJ31845043	915377-NU//PTCL102002438850/UM1AI068632
5R03AR061593-03	5R35GM118184-03 REVISED	6NU5BDP006138-02-02	9254sc/5U01A118594-03
5R03AR065800-03	5R37AG008796-27 REVISED	6UH1HP29963-03-01	94701//5-U01CA202177-03
5R03AR066343-03 REVISED	5R37AG026647-13	7 R40MC30751-01-00	94743768//UG3OD023287
5R03CA194643-02 REVISED	5R37AI033483-24	7(GG007619-04)//5R01HL093081-08	9487sc/5R01NR015223-05
5R03DC013841-03	5R37AI094595-07	7(225/29/NU-02//D43TW010140-02	9500012803//Job13765353//W911NF-09-2-0053 Mod. 13
5R03DC014553-03 REVISED	5R37AR043380-23	706K661/5U54GM119023-03	9500080215//U10CA180896
5R03DC014565-03	5R37HD038691-19	70NANB14H012 Amd 6	9500080217-XX//U10CA180886
5R03DK109243-02 REVISED	5R37HL048129-23	70NANB17H088	96347693//1R21AG057395-01
5R03HD082558-02	5R37HL068546-35	70NANB17H283	965-SUB // 3U54HL119810-05S1
5R03HD087111-02	5R37NS039395-17	70NANB18H075-1	9788sc/5U54NS092089-03
5R03HS025267-02	5R37NS041280-20	71(GG009393) // OCE-1450528-2	97966869 // 1R01HL139001-01
5R03MH107834-02	5R37NS096241-03	7201//5R01HD075777-05	989-SUB//5U01HL123009-05
5R13HD063248-07	5R50CA211271-03	7-312-0214047-52577L//1U10HL119991	9920170059//HHSM-500-2013-130141
5R13TR000046-05	5R50CA211428-03	7336107 Mod. 1 // 2P01CA092584-16	9920180010//R21AG057396
5R18DK083941-06	5R50CA211534-03	7503// AID-OAA-A-16-00032	

NORTHWESTERN UNIVERSITY
 6FKHG XOH RI)LQGLQJV DQG 4XHVWLRQHG &RVVV
 Table of Award Numbers
 Year ended August 31, 2018

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

Award Number			
AGMT00000 775/1U01N104326-01	CCF-1453853 002	CNS-1615837	DMR-1610367 002
AGMT-4/9/15//5P01CA108671-08	CCF-1526109	CNS-1619317	DMR-1610796-001
Agr. 10/06/2015//5R44AR061920-03	CCF-1533560 001	CNS-1651695 001	DMR-1611076 No. 001
Agr. 4/19/2016 //HHSN27601500744P	CCF-1533656	CNS-1701921	DMR-1611308
Agr. 8/7/14 // U01HL107407	CCF-1618065-001	CNS-1718670	DMR-1611341
6CR2BEMT06(0)HEEMCH08AD8(RC)QDMR-16227CAgrM277/2603/106 //A165-15-R- 001			

NORTHWESTERN UNIVERSITY
6FKHGXOH RI)LQGLQJV DQG 4XHVWLRQHG &RVVV
Table of Award Numbers
Year ended August 31, 2018

Name of Federal Program or Cluster (CFDA #)

NORTHWESTERN UNIVERSITY
 6 F K H G X O H R I) L Q G L Q J V D Q G 4 X H V W L R Q H G & R V W V
 Table of Award Numbers
 Year ended August 31, 2018

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

Award Number

R305A120531-15-7	Sub No. 4471 CC81932/W81XWH-15-2-0035	W81XWH-17-1-0230
R305A160013 -17	Sub# 12305-52/3P30CA006927-50SB	W81XWH-17-1-0362
R305B100027 - 14	Sub#00003339/HHSN261201200034I	W81XWH-17-1-0405
R305B140029 - 16	Sub#00003350/HHSN261201200034I	W81XWH-17-1-0406
R305B140042 - 17 Mod 4	Sub#2002749092/5U10EY024527-04	W81XWH-17-1-0411
R305B170016	Sub#3003585891/5R01EB013198-09 REVISED	W81XWH-17-1-0578
R305D170041 - 17A	SUB#567266/5UM1HL116886-03 REVISED	W81XWH-17-1-0606
R33CA225323	SUB: 110009/5UM1A068636-12	W81XWH-17-1-0642
R924/5R01 DC009972-09	SUB0000078 Amd. 5 // W911NF1510421	W81XWH-17-1-0679
RC103138NW//DUE-1347605	SUB00000853/BCS-1519120	W81XWH-17-1-8426
RC105782NU//5R01CA193706-03	SUB-01//HSHQDC-14-R-B0009	W81XWH1810053
RC106479NU//1632051	Subk No. 1478794 Mod 14 // NNN12AA01C	W81XWH1810257
RC107136NU//1654929	T539496/R21NR014544	W81XWH1810594
Require5P30AR072579-02	T652681/4U01NS038455-15	W911NF-11-1-0390 P00011
RES126034 Amd 2//R01HL124245	T733841/5R01NS088528-04	W911NF-11-1-0445/P00004
RES509477//DP3DK104438	T745243//R01AG054079-01	W911NF-12-1-0542/P00008
RES511132//4U01DK094157-06S1	T811257//5U01DA036233-05	W911NF-13-1-0229 P00010
RES511975//5R01CA211762-02	T897810//R01AG057714-01 Revised	W911NF-13-1-0412/P00002
RES512231/2U01DK094157-07 REVISED	T91HP215420502	W911NF-14-1-0168/P00008
RES512302//1U01AR071168-01A1 REVISE	TM6-17005X/NAS8-03060	W911NF-14-1-0259-P00004
RES512393//5U01NS090407-04	TM7-18007X/NAS8-03060	W911NF-14-1-0461-P00006
RES512561//2U01DK094157-07 REVISED	TO#2 P0#10203492 //DSFH6116D00053	W911NF-14-1-0686-P00004
RES512878//2U01DK094157-07 REVISED	TUL-HSC-555811-17//18//U01HD052104	W911NF-15-1-0017 P00006
RES51337//2R01NS082007-07	U10CA180820-01-NWU2	W911NF-15-1-0068/P00001
RG884-G2 Amd 1 // R01HL130619	U10CA180820-01-NWU3	W911NF-15-1-0091 P00006
RNG200279-05//R01DK106201	UFDSP00010117//R01HL121023	W911NF-15-1-0151 P00006
RQ15-016R02 Mod 2//DE-EE0006867	UFDSP00010414 // R01GM107227-03	W911NF-15-1-0240 P00004
RR211-536/S001474//R01AI128924-01A1	UFDSP00010684//U01AG022376	W911NF-15-1-0272-P00003
RR376-410/4708620 Amd 3 // 2R01HD03058820A1	UFDSP00011459//R01CA200867(2)	W911NF-15-1-0569 P00001
RR376-428/4945376 Amd 6 // 2P30DA027827-06	UFDSP00011851//U01AG050499	W911NF-16-1-0138 P00003
RSA No. 1594471 // NNN12AA01C	UFDSP00011909//U54AR052646	W911NF-16-1-0169 P00004
S-00014999 // R305A170165	UFDSP00011947//U01NS102038	W911NF-16-1-0372 P00002
S-000700 Amd 6 // USAF FA9550-15-1-0009	UFDSP00012107//R01CA187109/16122063	W911NF-16-1-0384
S002//2R01NS047567-13A1	UFDSP00012338//W912HQ18C0039	W911NF-16-1-0410 P00005
S140181-2 Amd. 3 // 5R01AI112009-04	UFDSP0011905//U54AR052646	W911NF-16-1-0458
S20140000026205// 5R01MD007723-03	UNIV59587//5R01DK050203-20	W911NF-16-1-0464-P00004
S4526-PO176307//1R03HD092676-01	USTTB/NU//R01AI1110386-02-2016	W911NF-16-1-0584 P00001
S51110000040313//7R01HL125089	UTA16-000087 Amd. 1 // 1R01HD083613-01A1	W911NF-17-1-0184
SA17-0018-S001//1616244	UWSC10113//638300001-0	W911NF-17-1-0233 P00001
SC160072//W81XWH-17.6(7)-0.6(A)06.6(87.7(1)-0.6(-)15C10939F5-BDC-9330(RHD.235)	W81XWH-17.6(7)-0.6(A)06.6(87.7(1)-0.6(-)15C10939F5-BDC-9330(RHD.235)	
W911NF-17.6(7)-0.6(A)06.6(87.7(1)-0.6(-)15C10939F5-BDC-9330(RHD.235)		
W911NF-12-1-464-P0000		

6(8)-8(7)18.8(7)-0.6(R)3.3(R)3.3M)60.6(1)-0.122W9(1)-0.6(-)19.7300
 6(8)-8(2)-0.6(U7)-0.6(R)3.3(0)-0.6(1)-0.GD70-1-0

6(8)-8(5)-0.6(U7)-0.2-R-01-0

Federal Award Findings and Questions Costs
Corrective Action Plan
Year Ended August 31, 2018

Finding No2018-001: *Inadequate Process for Updating Property*