

**Clemson University
Clemson, South Carolina**

OMB Circular A-133 Reports

For the year ended June 30, 2014

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Clemson University, South Carolina

Schedule of Expenditures of Federal Awards

For the year ending June 30, 2014

Federal Grantor/Pass-through Grantor/Program Title	Federal CFDA Number	Grantor's/Pass-through Grantor's Number	Expenditures
RESEARCH AND DEVELOPMENT CLUSTER			
Department of Agriculture			
Acquisition of Goods and Services	10.RD	58-6657-2-400	\$ 5,407
Acquisition of Goods and Services	10.RD	58-6657-3-004	28,233
Acquisition of Goods and Services	10.RD	58-6657-3-009	72,052
Acquisition of Goods and Services	10.RD	58-6657-4-007	20,287
Acquisition of Goods and Services	10.RD	58-6659-2-113	332
Acquisition of Goods and Services	10.RD	58-6659-2-114	1,191
Acquisition of Goods and Services	10.RD	58-6659-3-115	12,189
Acquisition of Goods and Services	10.RD	58-6659-3-118	30,126
Acquisition of Goods and Services	10.RD	58-6659-3-122	7,718
Acquisition of Goods and Services	10.RD	58-6659-3-124	9,410
Acquisition of Goods and Services	10.RD	58-6659-3-125	8,520
Acquisition of Goods and Services	10.RD	58-6659-3-126	7,729
Acquisition of Goods and Services	10.RD	58-6659-4-001	20,809
Animal Health	10.RD	UNKNOWN	23,863
Children, Youth and Families at Risk (CYFAR) Liaison	10.RD	2009-41520-05376	11,586
Clemson University Sustainable Community Project (CYFAR Sustainability)	10.RD	2011-41520-30408	123,876
Clemson University Veterinary Institute, South Carolina	10.RD	2010-38942-20745	100,732
Comparative Trapping Investigations of Small Hive Beetles Inside Honey Bee Colonies	10.RD	2010-34381-21291	6,353
Consortium of Appalachian Fire Managers and Scientists (CAFMS) Measurement of Progress and Identification of Needed Improvements	10.RD	14-JV-11330136-033	4,497
Containment, Remediation, and Recycling of Irrigation Water for Sustainable Ornamental Crop Production	10.RD	2011-51181-30633	5,318
Culicoides Sonorensis Transcriptome Project	10.RD	58-5430-2-313	4,203
Data Collection to Support International Regulatory Approvals for "Honeysweet" Plums	10.RD	58-1931-9-950	32,537
Data Sources and Food Demand Estimation: A Comparison of Homescan and Consumer Expenditure Data	10.RD	2011-67023-30058	2,482
Demonstration of Deep-Rooted Cover Crop, Tillage, and Controlled Traffic on Eliminating Hardpan Layer in Coastal Plain Soils to Enhance Soil Health and Farm Profits	10.RD	69-4639-13-0019	3,794
Demonstration of Innovative Sensor-Based Nitrogen Management and Interseeding Technology to Reduce Nutrient Inputs and Weed Populations While Enhancing Farm Profitability in South Carolina	10.RD	69-4639-12-0010	50,149
Detection and Mitigation of Phytophthora Ramorum and other Species of Phytophthora in Forest Streams	10.RD	09-JV-11272138-014	16,516
Developing Fundamental Knowledge of Plant-Insect Interactions and Application of Sensor-Based Technology for Management of Stink Bugs in Cotton	10.RD	2011-67012-30752	8,011
Developing Molecular Resources Using Next Generation Sequencing and Evaluation of Peach NCGR Germplasm for Drought Resistance	10.RD	58-1931-2-307	15,834
Development of Plant Materials Native to Longleaf Ecosystems Within the Atlantic Coastal Plain of North and South Carolina	10.RD	09-CS-11081209-002	4,064
Drought Effects on Forest Regeneration in the Southeast- Regional Analysis Based on FHM/FIA Data	10.RD	10-DG-11083150-013	18,218
Enhancing the Sustainability of Livestock Production Systems on the Southeastern US	10.RD	2010-51160-21072	48,185
Environmental Risk Assessment of Perennial Grasses Genetically Engineered for Abiotic Stress Tolerance	10.RD	2010-33522-21656	100,057
Genetic Engineering for Septoria Disease Resistance in Hybrid Poplar	10.RD	2011-67010-30197	5
Genetics and Genomics of Chestnut Blight Resistance	10.RD	11-CA-11330126-106	7,496
Hand Hygiene Promotion: An Essential Strategy for Preventing Foodborne Illness in Elementary Schools	10.RD	2011-51110-31020	119,017
Hatch	10.RD	UNKNOWN	3,075,316
Impact of Prescribed Fire on Polycyclic Aromatic Hydrocarbon Production and Contaminant Photo-transformation Reductions in Coastal Plain	10.RD	2014-67019-21615	36,282
Improved Production Methods: North South Initiative (Clemson University)	10.RD	58-3607-8-722	13,721
Improving Mitigation of Phytophthora Ramorum in Water	10.RD	13-8130-0161-CA	30,816
Innovative Approaches to Manage and Reduce Feral Hog Damage to Argonomic Systems, Woodlands and Ecosystems Services	10.RD	69-4639-13-0025	12,293
Innovative Nematode Management Strategies to Reduce Pesticide Usage While Enhancing Farm Profit and Environmental Quality	10.RD	2010-51101-21785	244,071

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Schedule of Expenditures of Federal Awards

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Federal Grantor/Pass-through Grantor/Program Title	Federal CFDA Number	Grantor's/Pass-through Grantor's Number	Expenditures
RESEARCH AND DEVELOPMENT CLUSTER, Continued			
Department of Agriculture, continued			
Integrating Management of Soft Scales in the Southern Landscape	10.RD	2010-34103-21144	20,492
Land Use Planning and Forest Disturbance: Comparison of Models, Dissemination of Information in the American Planning Association	10.RD	12-CA-11330136-036	6,189
Landscape-Scale Thresholds of Early Successional Habitat; Reconciling Biodiversity, Public Perception, and Timber Yield in Managed Forests	10.RD	12-CA-11330134-092	30,530
Managing Declining Pine Stands for the Restoration of Red-cockaded Woodpecker Habitat (Resample Supplement)	10.RD	12-JV-11330123-046	7,680
McIntire Stennis	10.RD	UNKNOWN	797,012
Mechanisms, Ecological Impacts, and Restoration Strategies for Invasion of Agricultural Fields by the Clonal Plant <i>Polygonum Cuspidatum</i>	10.RD	2009-35320-05042	28,262
Multi-Scale Biogeochemical Assessment of Soil Denitrification Process Impacted by Nanosilver	10.RD	2012-67022-30158	7,247
Myoepithelial Ontogeny in Prepubertal Heifers	10.RD	2009-35208-05778	58,704
National Visitor Use Monitoring	10.RD	AG-4670-C-12-0115	8,720
Presentation of Students and Young Scientists at the 2013 32nd Southern Forest Tree Improvement Conference	10.RD	2013-67013-20874	8,309
Producing Biological Control Agents for Use in Hemlock Woolly Adelgid Management in the Southern Appalachians	10.RD	10-DG-11083150-031	122,114
Rapid Detection and Mitigation of <i>Phytophthora ramorum</i> in Water	10.RD	12-8130-0161-CA	22,984
Repeated Prescribed Fires and Mechanical Fuel Treatments for Restoration in the Southern Appalachian Mountains	10.RD	12-CA-11330136-122	59,976
Reptile, Amphibian and Invertebrate Response to Repeated Prescribed Fires and Mechanical Fuel Reduction Treatments in an Upland Hardwood Forest	10.RD	14-JV-11330136-018	4,713
Screening and Cloning of Resistance Related Genes by RNA-SEQ in Huanglongbing (HLB) Resistant and Susceptible Citrus Breeding Lines	10.RD	59-6618-2-095	139,932
Socioeconomic Predictors of Family Forest Owner Use of Federal Income Tax Provisions	10.RD	10-JV-11330143-090	16,219
Southeastern Budwood Program	10.RD	12-8100-1414-CA	49,983
Temporal and Spatial Patterns of Pine Mortality in the Southeastern United States	10.RD	SRS 09-JV-11330123-095	53,702
Tracking and Managing Diseases of Floriculture Crops Caused by Oomycetes and Fungi	10.RD	58-1907-0-103	55,294
Translational Genomics Approaches to Control of Peach Tree Short Life in the Southeastern United States	10.RD	2010-34126-21199	2,194
Understanding How a Lipokine, Palmitoleic Acid (C16:1) and Stearyl-CoA Desaturase (SCD) Influence Fat Synthesis	10.RD	2012-67012-19907	61,550
Use of Wetland Systems to Treat Nursery Runoff	10.RD	58-6618-2-105	9,868
Using Local Food Banks to Improve Sustainability of Small and Limited Resource Farms	10.RD	2011-67023-30124	43,210
Water Use in the Propagation of Vegetative Animals	10.RD	58-3607-3-991	12,547
Pass-through programs from:			
Cornell University			
Eastern Broccoli: Developing An Eastern Broccoli Industry	10.RD	61314-9362	19,841
Establishing "The Center for Behavioral Economics and Child Nutrition Research"	10.RD	62140-10084	2,555
Michigan State University			
RosBREED: Enabling Marker Assisted Breeding in Rosaceae	10.RD	61-4296E	37,780
North Carolina State University			
Development of Solid and Hollow-Core Cross-Laminated Timber Systems for Low- and Mid-Rise Construction	10.RD	2013-0043-01	55,210
Dispersal and Life History of <i>Megacocta Cribraria</i> from Kudzu and Implications for Management in Soybean	10.RD	2013-2839-02	3,719
Building Capacity to Control Viral Foodborne Disease: A Translational, Multidisciplinary Approach	10.RD	2011-0494-01	583,113
Developing a Culturally Appropriate, Spanish-language Low-literacy/non-technical Good Manufacturing Practices (GMP) Training Curriculum for the Meat and Poultry Industry	10.RD	2008-1155-02	26,451
Development of Grafting Technology to Improve Sustainability and Competitiveness of the U.S. Fruiting Vegetable Industry	10.RD	2011-1609-01	69,728
IPM for Shrubs in Southeastern US Nursery Production (Vol.1) a SNIPM Effort	10.RD	2012-2604-12	29,953
Partnership to Manage Southern IPM Center	10.RD	2012-2604-27	8,229

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RESEARCH AND DEVELOPMENT CLUSTER, Continued			
Department of Agriculture, continued			
Pass-through programs, continued:			
Predicting In-season Infection Risk of Cucurbit Downy Mildew and Validation of A Downy Mildew Forecasting System.	10.RD	2012-1968-01	18,827
South Carolina Department of Agriculture			
Creating Profitable Strategies for Transitional and Organic Growers for Multi-Vegetable Cropping Through Unique Cover Cropping, Plasticulture and Alternative Fertilizer Technology	10.RD	None	5,094
Development of Peach Varieties with Superior Qualities for Enhanced Production, Increased Consumption and Competitive Advantage of the South Carolina Peach in the Global Market	10.RD	12-25-B-1253	6,849
Development of Peach Varieties with Superior Qualities for Enhanced Production, Increased Consumption, and a Competitive Advantage for the South Carolina Peach in the Global Market	10.RD	None	1,848
Economic Impact and Feasibility of a Horry County Food Hub	10.RD	None	1,729
Enabling Marker Assisted Breeding for Brown Rot Resistance/Tolerance in Peach	10.RD	None	11,787
Enhancing Value Added Agribusiness Opportunities	10.RD	None	2,189
Feasibility Study for Specialty Food Crop Incubator	10.RD	12-25-B-1093	3,578
Improved Control of Powdery Mildew and Anthracnose in Watermelon	10.RD	None	4,613
Sensitivity of the Gummy Stem Blight Fungus to Newly Registered Fungicides	10.RD	None	4,583
South Carolina Forestry Commission			
Impact of Laurel Wilt Disease on Redbay (<i>Persea borbonia</i>) Ecosystems	10.RD	None	38,560
Post-hurricane Fuel Dynamics and Its Implications to Fire Behavior	10.RD	None	35,021
Texas A&M University			
Improving Soil Quality to Increase Yield and Reduce Diseases in Organic Rice Production	10.RD	06-S130621	11,752
University of California Davis			
Developing and Validating Practical Strategies to Improve Microbial Safety in Composting Process Control and Handling Practices	10.RD	201016985-01	20,391
Validating Salmonella Inactivation During Thermal Processing of the Physically Heat-treated Chicken Litter As Soil Amendment and Organic Fertilizer	10.RD	201121654-01	93,969
University of Florida			
Climate Variability to Climate Change: Extension Challenges and Opportunities in the Southeast Area	10.RD	UF11109 00094451	88,727
Efficacy of Experimental Products Against the Cottony Cushion Scale	10.RD	PO# 1300213222	885
Efficacy of Several Products and Rotations for Managing Whiteflies	10.RD	PO# 1400281304	13,494
Integrated Grafting Technology to Improve Disease Resistance and Fruit Yield in Specialty Melon Production	10.RD	UF10235	71,486
Occurrence and Distribution of Resistance to Elevate and Switch in Populations of <i>Botrytis cinerea</i> from Strawberries in California	10.RD	PO# 1300213382	38
Precision Disease Management for Sustainable Strawberry Production in the Eastern United States	10.RD	00089088 UF10221	287,894
University of Georgia			
Carbon Dynamics in Management Intensive Grazing Dairy Systems	10.RD	RC284-551/4895306	23,413
Ecologically Driven Stink Bug Management in Commercial Farmscape	10.RD	RF330-451/4893146	5,158
Evaluation of Somatic Seedlings of American Chestnut for Resistance to Phytophthora Root Rot-Forest Health Initiative	10.RD	RR272-333/4784886	(221)
Forest Health Initiative: Biological Research Component Phase II Testing and Transgenics	10.RD	RR272-422/4944456	6,000
Improvement of the Safety of Food Handling Practices on Small Farms	10.RD	RD309-105/4690158	642
Sustainable Agriculture Research and Education (SARE) Professional Threshold Verification and Investigation of Border Sprays for Managing the Invasive <i>Megacopta cribraria</i> in Commercial Soybean Production	10.RD	RE675-171/4942706	5,824
Weeds, Nitrogen and Yield: Measuring the Effectiveness of an Organic No-Till System	10.RD	RE330-483/4353698	4,350
	10.RD	RD309-122/4944816	6,779
University of Hawaii			
New Engineered Approaches for Recovering Disperse Populations of Low-Tolerance Pathogens from Food	10.RD	2014-67005-21702	24,503

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RESEARCH AND DEVELOPMENT CLUSTER, Continued			
Department of Agriculture, continued			
Pass-through programs, continued:			
University of Kentucky			
CYFAR Capacity Building Program - Federal Collaborative Partner Opportunities	10.RD	3048106543-10-120	2,021
University of South Carolina			
Genomic and Breeding Foundations for Cellulosic Sorghum Bioenergy Hybrids	10.RD	PO#41650(13010-FB90)/12-2015	22,175
Washington State University			
Tree Fruit GDR: Translating Genomic Knowledge to Fruit Tree Agriculture	10.RD	111359 G002633	<u>104,107</u>
Total Department of Agriculture			<u>7,735,370</u>
Department of Commerce			
Accelerate South Carolina: Workforce Innovation Launch	11.RD	04-79-06838	119
Botanical Product Analysis by HPLC-Particle Beam Mass Spectrometers	11.RD	60NANB12D110	13,420
NIST Summer Undergraduate Research Fellowship (SURF) Program - Gaithersburg	11.RD	70NANB14H119	6,410
Pass-through programs from:			
South Carolina Manufacturing Extension Partnership			
FY 13-14 SCMEP	11.RD	2014-002	90,001
South Carolina Sea Grant Consortium			
Evaluating Wetland Function in Coastal South Carolina to Support Low Impact Development Decision-Making	11.RD	N153	13,333
Examining Capacity for a Cooperative Seafood Tourism Trail as a Value-Added Marine Resource-Based Recreation and Tourism Product on the South Carolina Coast	11.RD	M394	2,083
Examining Capacity for a Cooperative Seafood Tourism Trail as a Value-Added Marine Resource-Based Recreation and Tourism Product on the South Carolina Coast	11.RD	M494	4,001
Green Infrastructure Design for Stormwater Management in Coastal South Carolina: An Assessment of Ecohydrological Function	11.RD	M388	1,576
Green Infrastructure Design for Stormwater Management in Coastal South Carolina: An Assessment of Ecohydrological Function	11.RD	M488	45,813
Microbial Ecology of a South Carolina Beach	11.RD	NA10OAR4170073-P/M-2N-M11N	5,695
Particle Contamination: Direct Effects on Salt Marsh-Tidal Creek Organisms and Indirect Effects on the Bioavailability and Toxicity of Polynuclear Aromatic Hydrocarbons (PAH)	11.RD	N155	7,634
Perceptions of Marine Aquaculture in Tourist Destinations on the Southeastern United States Coast - Year 1	11.RD	M314 - Year 1	42,538
Perceptions of Marine Aquaculture in Tourist Destinations on the Southeastern United States Coast - Year 2	11.RD	M414 - Year 2	29,854
Sea Grant Aquaculture Extension 2010: The SC Sea Grant Aquaculture Extension Enhancement Program - Year 2	11.RD	A/E-AQ1a - Yr. 2	6,277
Sea Grant Aquaculture Extension 2010: The SC Sea Grant Aquaculture Extension Enhancement Program - Year 3	11.RD	A/E-AQ1a - Yr. 3	19,782
Understanding Demand for Value-Added Products and Services Associated with For-Hire Boat Trips on the South Carolina Coast	11.RD	M390	1,232
Understanding Demand for Value-Added Products and Services Associated with For-Hire Boat Trips on the South Carolina Coast	11.RD	M490	28,103
Wind and Rain Resistant Design for Coastal Cross Laminated Timber Building	11.RD	N157	21,491
University Corporation for Atmospheric Research			
Climate Adaptation and Mitigation Program // Forecasting the SC Blue Crab Fishery Using Real-Time Freshwater Flow Data	11.RD	Z14-15056	19,282
University of Central Florida			
Evaluation of IC Interconnect Failure of Through Silicon Vias	11.RD	277240	73,551
University of Delaware			
Molecular Tracking of Fecal Contamination in Delaware Coastal Waters	11.RD	29916	<u>33,213</u>
Total Department of Commerce			<u>465,408</u>

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Federal Grantor/Pass-through Grantor/Program Title	Federal CFDA Number	Grantor's/Pass-through Grantor's Number	Expenditures
RESEARCH AND DEVELOPMENT CLUSTER, Continued			
Department of Defense			
2013 & 2014 Clemson Mini-Conference	12.RD	H98230-13-1-0283	7,206
3-D Test Systems: New Tools for Unlocking the Mysteries of Breast Cancer	12.RD	W81XWH-05-1-0379	103,227
A Multi-Function/Multi-Fuel ThermoAcoustic Generator/Heat Pump (TAG/HP) for Marine Expeditionary Forces	12.RD	N00014-14-1-0227	14,672
Accounting for Hydrologic State in Ground Penetrating Radar Classification Systems	12.RD	W911NF-10-1-0292	14,429
Adaptive Multicarrier Transmission for Dynamic Spectrum Access in Tactical Cognitive Radio Networks with Fading Channels	12.RD	N00014-12-1-0060	95,036
Adaptive Reliable Unicast and Multicast Transmission in Tactical Packet Radio Networks	12.RD	W911NF-11-1-0427	121,843
Anthropomorphic Interfaces on Automation Trust, Dependence, and Performance in Younger and Older Adults	12.RD	FA9550-12-1-0385	71,939
Atomistic Molecular Simulation Methods to Predict CBW A-Surface Interactions	12.RD	HDTRA1-10-1-0028	516,939
Carbon Fibers Derived from Sustainable Precursors	12.RD	W911NF-10-2-0024	107,942
Combined Biological and Chemical Mechanisms for Degradation of Insensitive Munitions in the Presence of Alternate Explosives	12.RD	W912HQ-12-C-0058	165,601
Concept Validation and Optimization for a Vent-based Mine-blast Mitigation System	12.RD	W911NF-11-1-0518	100,633
Cooperative Red-Cockaded Woodpecker Translocation Support	12.RD	W9126G-10-2-0030	66,505
Develop Integrated Management Practices for the Control of Chinese Tallow (Triadica sebifera) in Coastal Forests	12.RD	W9126G-11-2-0057	48,451
Development of Marine Antifouling Coatings Utilizing a Fouling Deterrence Strategy	12.RD	N00014-11-1-0183	125,407
DURIP: Acquisition of a Bi-static Fabry-Perot Interferometer System for Measuring the Thermospheric Winds and Temperatures Near the Geomagnetic Equator in the African Longitudinal Sector	12.RD	FA2386-13-1-3011	72,103
DURIP: Instrumentation for Simultaneous Two-Dimensional Quantitative Imaging of Mixture Fraction, Temperature, and Velocity in Turbulent Nonpremixed/Partially Premixed Flames	12.RD	FA2386-12-1-3022	626
Emerging Science and Technology Research Relating to Information Dominance Applications	12.RD	N65236-10-D-6834 DO#0001	20,450
Facilitating Soldier Receipt of Needed Mental Health Treatment	12.RD	W81XWH-11-2-0010	240,987
Friction Stir Welding Behavior of Selected 2000-series and 5000-series Aluminum Alloys	12.RD	W911NF-11-1-0207	117,357
Garment Modification and Production Support - Task Orders	12.RD	2008-1221204-022	218,463
Garment Modification and Support - Task Order 01	12.RD	2014-14041600009-001	10,074
Gradient Films from Shape Memory Nanofoams for Waveguide Coating	12.RD	HDTRA1-10-1-0101	197,473
Hydrothermal Actinide Growth Project	12.RD	FA8601-12-P-0315	(366)
Identifying and Evaluating Impacts to Wetlands from the Savannah River Estuary	12.RD	W912HZ-14-2-0002	177,882
Improve the Performance of Integrated Diode Laser Beam Combining Through Grating Regrowth	12.RD	W911NF-13-1-0254	50,000
Innovation in Broad-Area Diode Laser Array Architecture: Coupling Grating-Confined Zigzag Modes for High Power, High Brightness Applications	12.RD	W911NF-11-1-0519	69,559
Instrumentation for Accelerated, High Fidelity Modeling and Simulation of Wireless Communication Networks	12.RD	W911NF-13-1-0354	174,500
Iterative Decoding of q-ary Parity-check Codes and Related Problems	12.RD	H98230-13-1-0232	46,479
Liquid Sampling-Atmospheric Pressure Glow Discharge (LS-APGD) Microplasmas for Elemental, Isotopic, and Molecular Determinations	12.RD	HDTRA1-14-1-0010	70,808
Magnetic Field Assisted Assembly of Ordered Multifunctional Ceramic Nanocomposites for Extreme Environments	12.RD	FA9550-12-1-0459	292,590
Manufacturing Science of Improved Molded Optics	12.RD	W911NF-09-1-0536	74,285
Multicharged Ion Promoted Desorption (MIPD) of Reaction Co-Products	12.RD	W911NF-13-1-0042	253,988
Multi-length Scale Material Model Development for Armor-grade Composites	12.RD	W911NF-09-1-0513	83,111
New Fouling Deterrent Strategies to Defeat Barnacle Biofouling	12.RD	N00014-14-1-0488	19,652
New Protein Modification under Nitrosative Stress	12.RD	W81XWH-10-1-0385	197,995
On-Chip Coherent Combining of Angled-Grating-Confined Broad-Area Semiconductor Lasers Through a Folded Supercavity for High Power, High Brightness Applications	12.RD	N66001-10-1-4038	71
PANTS and SERMON Meetings in the Southeast	12.RD	H98230-13-1-0296	9,912
Polarization-Maintaining Large-Core All-Solid Photonic Bandgap Fibers for Power Scaling of High Power Fiber Lasers	12.RD	HQ0147-11-C-6010	99,624

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RESEARCH AND DEVELOPMENT CLUSTER, Continued			
Department of Defense, continued			
Production and Characterization of Third Generation Cut Resistant Fibers via Acrylic/Copolyaramid Bi-Component Wet Spinning with a Focus on Scaled Up Production and Product Enhancements	12.RD	W911QY-13-C-0020	87,464
Protections Methods for Dc Ship Power Systems Using the Z-Source Breaker	12.RD	N00014-13-1-0612	71,074
Research and Development on EM Responsive Coatings	12.RD	FA8650-09-D-5900/0002	43,363
Subsurface Thermal Energy Storage (STES) for Improved Heating and Air-Conditioning Efficiency	12.RD	W912HQ-10-C-0027	294,344
Technologies and Methodologies in Prevention of ASR in Concrete Pavements	12.RD	N62583-09-C-0024	41,634
Tools for Enhanced F-22 Maintenance Visibility	12.RD	FA8601-13-P-0101	58,767
ARRA-Topologically Protected Quantum Information Processing in Spin-orbit Coupled Semiconductors	12.RD	FA9550-10-1-0497	74,774
Ultra-Trace Level Quantification of Alpha- and Beta- Emitting Radionuclides with Extractive Scintillating Resin	12.RD	HDTRA1-12-1-0012	367,954
Pass-through programs from:			
Applied Research Associates, Incorporated		PO# 13-00636	
PM Stryker: Fireproof Characterization Testing	12.RD	/S001542.00000.3.CU	14,678
Clemson University Research Foundation			
3D Meta-Optics for High Energy Lasers	12.RD	20100669-04-CRF	160,121
Advanced Optical Fibers for High Power Fiber Lasers	12.RD	W911NF-10-1-0423	432,707
Engineered Laser Filaments in Air for Defense Stand-Off Sensing and Interaction Applications	12.RD	238975	6,796
Light Filamentation Science	12.RD	232897	28,066
Novel Fiber Concepts for High Power Single Mode Fiber Lasers	12.RD	W911NF-12-1-0332	306,661
Novel Materials and Components for All-fiber Faraday Isolators	12.RD	FA8650-09-C-5405	31,640
Cornell University			
Artificial Ionospheric Plasma Density	12.RD	58119-10040	30,356
Corvid Technologies			
Physical Submodel Development for Turbulence Combustion Closure	12.RD	14-006 FA9550-14-C-0029//CLIN 0001: Charge Code 1041-253	11,064
FlexTech Alliance, Incorporated			
Translating Printed Electronics Process Technology from Laboratory to Commercial Scale	12.RD	RFP12-158_Clemson	55,749
Huntington Ingalls Industries			
Power and Emerging Technologies Medium Voltage Direct Current (MVDC) Z-Source Breaker Design & Functional Requirements Specifications	12.RD	PO# 4500449324	48,608
Leidos, Incorporated			
Polymer Kelp	12.RD	P010129691	20,230
Polymer Kelp Fiber Development	12.RD	P010141436	33,420
Polymer Kelp for Vessel Stopping	12.RD	P010157849	14,596
Polymer Kelp Year 2	12.RD	P010157850	39,532
Lumany LLC			
Solid-State Fundamental Mode Green Laser for Ocean Mine Detection	12.RD	N13A-023-0367	33,823
Massachusetts Institute of Technology			
Evaluation of Radiation-induced Photonic Defects in Si, Ge, Chalcogenides and Polymers	12.RD	5710003309	89,386
Mote Marine Laboratory			
Novel Compounds from Shark and Stingray Epidermal Mucus with Antimicrobial Activity Against Wound Infection Pathogens	12.RD	MML-107-547	6,420
NanoScale Corporation			
Chemical-Biological Forensic Evidence Container with Agent and Tamper Resistant Tools	12.RD	NSF-388-001	(1,911)
NextGen Aeronautics Incorporated			
Porous Hybrid Composite for Enhanced Thermal Protection Systems (ComTPS) PH2	12.RD	PO 13-099/ CPFF /COMTPS PH2/308	83,686
North Carolina A&T State University			
DNI S&T Center of Academic Excellence: Center for Academic Studies in Identity Sciences	12.RD	210096B	171,084

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RESEARCH AND DEVELOPMENT CLUSTER, Continued			
Department of Defense, continued			
Pass-through programs, continued:			
Pennsylvania State University			
Elastomeric Polymer-By-Design to Protect the Warfighter Against Traumatic Brain Injury by Diverting the Blast Induced Shock Waves from the Head	12.RD	4036-CU-ONR-1125	(8,322)
Rutgers, The State University of New Jersey			
Single Crystal Fiber Lasers	12.RD	4816 PO# S1762674	69,282
Scientific Research Corporation			
Test Capabilities Development (TCD) for the Test Resource Management Center (TRMC)	12.RD	TO#: SR20140079 / Clemson-TRMCBOA-19	153,675
The Boeing Company			
High Performance Stretched Polymer Fibers	12.RD	652218 (W911 W6-10-2-05)	63,588
University of Illinois			
Novel Optical Fiber Materials with Engineered Brillouin Gain Coefficients			
SSL-1: Novel Fiber Lasers	12.RD	2012-03919-01	146,521
University of Massachusetts - Dartmouth			
Photovoltaic Fabrics	12.RD	13938	103,136
University of Michigan			
ARC Phase III: An Army Automotive Research Center of Excellence for Modeling and Simulation of Ground Vehicles - Fault Tolerant Hydraulic Hybrid System	12.RD	3002307587 (formerly F011680)	(1,447)
ARC Research at Clemson University	12.RD	3002307587 (formerly F011680)	(834)
Battery Thermal Packaging Design	12.RD	3002307587 (formerly F011680)	82,625
Computational Support to Develop a Verification and Validation Plan to Reduce Engineering Change Propagation in Vehicle Configuration Design	12.RD	3002307587 (formerly F011680)	7,799
Enhanced Fluid Properties and Minimization of Radiator Fan Power Consumption in Military Ground Vehicle Cooling Systems	12.RD	3002307587 (formerly F011680)	18,747
Metam-Materials Design for Tank Tread Backers Pads	12.RD	3003058759	18,335
Modeling & Optimization of Electrified Propulsion Systems	12.RD	3002307587 (formerly F011680)	68,109
Powertrain Thermal Management	12.RD	3002307587 (formerly F011680)	48,846
Ultracapacitor Energy Storage for Improving Fuel Economy and Extending Bitterly Life in Heavy Vehicles	12.RD	3003058759	13,867
Ultracapacitor Energy Storage for Improving Fuel Economy and Extending Battery Life in Heavy Vehicles	12.RD	3002307587 (formerly F011680)	56,336
University of Southern Mississippi			
Correlating Early Protective Coating Material Characterization and Properties with Corrosion Related Failures via Real and Accelerated Corrosion Testing in Model and Commercial Systems	12.RD	USM-GR04695-001	140,211
University of Texas at Dallas			
Search for Majorana Fermions In s-Wave Fermionics Super Fluids	12.RD	1301030 PO#S035654 632274,Dr.	32,485
Synthesis and Raman Characterization of Boron Doped Carbon Nanotubes	12.RD	Zakhidov,090727,P1196	<u>135,835</u>
Total Department of Defense			<u>7,862,333</u>
Department of the Interior			
Application of the Visitor Experience and Resource Protection (VERP) Program in Pinnacles National Monument	15.RD	P11AC91070 (formerly J8450110020)	447
Bat Assemblages at Big South Fork National River and Recreation Area (BISO):			
Potential Effects of Prescribed Fire	15.RD	G14AC00049	10,383
CESU: Building the Capacity to Monitor Coastal Marine Ecosystem Health: Reagent Development and Technical Applications of Novel Antibody and Molecular Tools			
	15.RD	P12AC11053 P10AC00543 (formerly J5430090058)	17,940
Characterization of the Moth (Lepidoptera) Diversity of Congaree National Park (CESU)	15.RD		4,555
Climate Change and Tidally Influenced Freshwater Forested Wetlands of the Southeast: Understanding Functional Ecological Attributes of Forest Transitions to Marsh	15.RD	G09AC00153	34,554
Conservation Corridors for Desert Tortoises	15.RD	G13AC00019	12,415
Conservation Leadership (Science Advisor to the Director, NPS)	15.RD	P13AC01379	165,570

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Department of the Interior, continued			
Determining the Movement Patterns and Habitat Use of Seabirds to Support Marine Spatial Planning Along the Atlantic Coast	15.RD	F11AC01380 (formerly F11AC00695)	23,501
Dissolved and Particulate Anthropogenic Organic Pollutants in the Coastal Environments of the Southeastern US	15.RD	P12AC11162	9,654
Eastern Brown Pelicans: Dispersal, Seasonal Movements and Monitoring of PAH's and Other Contaminants in the Northern Gulf of Mexico	15.RD	G12AC20367	313,098
Habitat Restoration for Bobwhite Quail and Early-Successional Wildlife Species-Kings Mountain National Military Park	15.RD	P11AC91086 (formerly P11AT50946)	472
Historic Metals Conservation at Fort Moultrie and Fort Sumter	15.RD	P13AC01410	64,594
Implement Assessment Protocol for the Rare Carolina Bogmint Population at Congaree National Park	15.RD	P12AC11253	8,844
Internship Program for Fire and Fuels Management	15.RD	P08AC00215 (formerly J5500080012)	35,655
Latin-American's Assigned Values to Natural and Historical Parks Case of Castillo de San Marcos & Fort Matanzas National Monument and Great Smoky Mountains National Park	15.RD	P13AC01367	8,107
Needs Assessment for Interpretation and Education	15.RD	P13AC01020	70,660
Needs Assessment for Visitor and Resource Protection and Three Specialty Career Fields in Collaboration of the CESU Network	15.RD	P12AC11224 (H5000085050)	41,007
NPS Southeast Region Marine Science Support Center	15.RD	P12AC11053	4,112
Program Management for the South Carolina Water Resources Center	15.RD	G11AP20105	76,133
Real Time Monitoring to Support Environmental Impact Management Strategies for Road Construction Activities on Foothills Parkway: Wears Valley, Bridge Number 2	15.RD	P10AC00544 (formerly J5471100020)	2,561
Retreat of Tidally Influenced Freshwater Forested Wetlands in the Southeast: Biogeochemical Investigations and Field Support	15.RD	G14AC00132	901
Science Support Partnership and Quick Response: Proposal for Development of a Seabird Colony Atlas and Register for the Southeastern U.S.	15.RD	UNKNOWN	(23,674)
Scion and Seed Collection and Processing at Carl Sandburg Home National Historic Site	15.RD	P11AC91099 (formerly P11AT50774)	1,546
Structural Integrity Assessments at Fort Sumter National Monument (FSNM)- CESU	15.RD	P11AC91078 (formerly P11AT50423)	90,260
Structural Prognosis for the Effective Management of Nation's Cultural Heritage	15.RD	P11AP60979 (formerly MT-2210-11-NC-02)	7,079
Student Internship to Collate Research Data and Develop Interactive Natural Resource Maps at Congaree National Park	15.RD	P13AC01357	197
The Effects of Management on Carbon Sequestration in Pocosin Wetlands of the Great Dismal Swamp, Virginia	15.RD	G14AC00131	1,718
The Social Media Listening Center Project (CESU)	15.RD	P13AC01293	9,807
Tourism as a Tool for Conservation of Mountain Gorillas in the Albertine Rift: The Case of Volcanos National Park, Rwanda	15.RD	F12AP01121	16,128
Towards Simpler, Cheaper and Greener Iron Conservation	15.RD	P11AP60836 (formerly MT-2210-12-NC-01)	3,009
Treatment of Museum Collection Objects from Fort Sumter and Fort Moultrie National Monuments	15.RD	P12AC11169 (H5000085050)	59,705
Understanding Relationships Between Sediment and Carbon Deposition and Floodplain Forest Functions in the Congaree National Park, SC	15.RD	G10AC00157	4,234
Pass-through programs from: South Carolina Department of Natural Resources			
Identification and Distribution of Crayfishes in South Carolina	15.RD	SCDNR FY2014-004/P24015302714	14,975
Monitoring Impacts of Native Yellow Pine Restoration on Avifauna in the South Carolina Mountains	15.RD	T-54-R-1, P24014406011	1,584
Status Update for Bog Turtles (Glyptemys muhlenbergii) in South Carolina	15.RD	SCDNR FY2014-008/P24014406012	3,136
Web Based GIS Decision Support System	15.RD	SCDNR FY2013-5403513	18,951

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Department of the Interior, continued			
Pass-through programs, continued:			
Wildlands Network			
Assisting Wildlands Network to Identify and Prioritize Key Habitat Connectivity Areas for the South Atlantic Region	15.RD	F11AC00459	627
Wildlife Management Institute			
Assessing Priority Amphibian & Reptile Conservation Areas (PARCAs) and Vulnerability to Climate change in the North Atlantic Landscape Conservation Cooperative	15.RD	NALCC-2011-16	31,571
Data Needs Assessment to Support Conservation Planning for the Appalachian LCC	15.RD	ALCC 2013-01	<u>38,832</u>
Total Department of the Interior			<u>1,184,848</u>
Department of Justice			
Pass-through programs from:			
South Carolina Department of Public Safety			
Human Trafficking in South Carolina	16.RD	FR #4100053536/5400007375	1,344
West Virginia Research Corporation			
Use of Periocular Features for Biometric Recognition	16.RD	09-0970-CU	<u>57,414</u>
Total Department of Justice			<u>58,758</u>
Department of Labor			
Pass-through programs from:			
Florence-Darlington Technical College			
Accessible Support Services and Instruction for Sustainable Transition (ASSIST) to Work	17.RD	B0005504	456,293
Greenville Technical College			
SC ACCELERATE - SC Adult College Completion Through E-Learning Resources and Academic Tracks to Employment	17.RD	TC-23765-12-60-A-45	<u>416,661</u>
Total Department of Labor			<u>872,954</u>
Department of State			
Internet Democracy Support for West Africa	19.RD	S-LMAQM-12-GR-1033	266,348
Pass-through programs from:			
Institute of International Education, Inc.			
2014 Fulbright Leadership and Re-Entry Seminar for Women from Sub-Saharan Africa	19.RD	None	<u>27,139</u>
Total Department of State			<u>293,487</u>
Department of Transportation			
2013 Dwight David Eisenhower Transportation Fellowship Program	20.RD	DTFH64-13-G-00040	5,000
2013 Dwight David Eisenhower Transportation Fellowship Program	20.RD	DTFH64-13-G-00023	3,347
Pass-through programs from:			
Professional Service Industries, Incorporated			
Fundamental Investigations into ASR - Mechanisms, Mitigation and Testing	20.RD	None	83,082
South Carolina Department of Transportation			
Accelerated Bridge Construction - Precast Alternate for Flat Slab Spans	20.RD	1297/1449, Proj No. 682	21,953
Accelerated Bridge Construction - Precast Alternate for Flat Slab Spans	20.RD	1582, Proj No. 682	75,598
Applying Successfully Proven Measures in Roadway Safety to Reduce Harmful Collisions in South Carolina	20.RD	1618; SPR No. 711	60,706
Compliance with the United State Environmental Protection Agency (USEPA) Effluent Limitation Guidelines-Turbidity Control and Surface Outlets	20.RD	SPR No. 702	79,656
Development of SC Databases and Calibration Factors for the Highway Safety Manual (HSM)	20.RD	1621; SPR No. 712	37,500

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RESEARCH AND DEVELOPMENT CLUSTER, Continued			
Department of Transportation, continued			
Pass-through programs, continued:			
South Carolina Department of Transportation, continued			
Improvements to Acceleration Design Response Spectra for Seismic Design of Transportation Structures in South Carolina	20.RD	1318, Proj No. 686	14,358
Improvements to Acceleration Design Response Spectra for Seismic Design of Transportation Structures in South Carolina	20.RD	1623, Proj No. 686	62,017
Integration of the Incident Command System (ICS) Protocol for Effective Coordination of Multi-Agency Response to Traffic Incidents	20.RD	1543; Proj No. 699	136,957
Operational and Safety Characteristics of Lane Widths	20.RD	1440; Proj No. 693	16,151
Professional Services Contract Manager On-Demand Training and Best Practices	20.RD	1635; SPR 713	41,630
Ranking of Pavement Preservation Methods and Practices	20.RD	1456; Proj No. 695	36,403
Ranking of Pavement Preservation Methods and Practices	20.RD	1574; Proj No. 695	60,055
Real Time Measurement of Scour Depths Around Bridge Piers and Abutments	20.RD	1417; Proj No. 692	78,700
Study of the Rate of Deterioration of Bridges and Pavements as Affected by Trucks	20.RD	1463; Project No. 694	15,686
Support for the Development and Implementation of an Access Management Program through Research and Analysis of Collision Data	20.RD	1591; Project No. 706	113,044
Validation of Contractor HMA Testing Data in the Materials Acceptance Process - Phase II	20.RD	1508; Project No. 697	27,778
TransAnalytics, LLC			
		DTNH22-09-D-00135, Task Order No. 04	29,168
The Effects of Medical Conditions on Driving Performance	20.RD		29,168
University of Iowa			
Project V2V Safety Applications Study (miniSIM multi-site)	20.RD	W000547753	11,948
University of North Carolina - Chapel Hill			
Older Drivers' Pedal Behavior	20.RD	5-55002	89,805
University of Tennessee			
Production of Biohydrogen and Succinic Acid	20.RD	8500022313	71,035
STC - Educational Component	20.RD	8500037533	114
Total Department of Transportation			1,171,691
Department of the Treasury			
Pass-through programs from:			
Westat			
HFCV Mobile Device Vehicle Integration Assessment	21.RD	8928-S-001 // Task Order No. 8	133,801
Total Department of the Treasury			133,801
Appalachian Regional Commission			
STEM Leadership Inclusion (I STEM)	23.RD	SC-17376	20,484
STEM Labs for Appalachian Youth	23.RD	SC-17375	36,606
Total Appalachian Regional Commission			57,090
National Aeronautics and Space Administration			
A Multi-Instrument Study of Electron-Positron Annihilation in the Milky Way	43.RD	NNX09AC80G	39,498
Broad Band Observations using INTEGRAL and Fermi	43.RD	NNX09AT25G	7,501
Chemical Evolution of the Neutron-Rich Iron-Group Isotopes and Implications for the Formation of FUN CAIs	43.RD	NNX10AN96H	3,258
Cosmic Metal Abundances from Fermi-GRB Afterglow Spectroscopy	43.RD	NNX10AO77G	35,805
Equatorial Vortex Experiment (EVEX): A Study of the Ionospheric Plasma Circulation and the Sunset Layer from Kwajalein (Clemson CO-I Proposal)	43.RD	NNX10AL26G	66,727
Geospace Response to Lower Atmospheric Wave Variability Due to the El Nino - Southern Oscillation	43.RD	NNX11AJ13G	73,420
Investigation of Anomalous Transport in the Lower Thermosphere	43.RD	NNX11AE17G	70,536
Mesosphere-Lower Thermosphere Turbulence Experiment (MTEX) (Co-I Proposal Clemson University)	43.RD	NNX13AE26G	44,840
Neutral-Ion Coupling and Wind Shear Effects in the Daytime Lower Ionosphere	43.RD	NNX09AI20G	53,972

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National Aeronautics and Space Administration, continued			
NRA / NASA Earth and Space Science Fellowship (NESSF) Program - 2014	43.RD	NNX13AM28H	27,200
NRI-Small: Long, Thin Continuum Robots for Space Applications	43.RD	NNX12AM01G	60,794
Nucleosynthesis and Galactic Chemical Evolution of Cosmochemically Significant Isotopes	43.RD	NNX10AH78G	78,635
The Role of Field Aligned Ion-drag in Driving Vertical Winds and Mass Density Enhancements Observed in the Cusp Region of Earth's Upper Thermosphere	43.RD	NNX13AF29G	52,247
Pass-through programs from: College of Charleston			
Developing Optical Strain Gauges for Passive Remote Strain Sensing	43.RD	20-SG-Clemson_Anker-PA	9,311
Development of an X-Ray Irradiation Port for Biomedical Samples at the CUEBIT Highly Charged Ion Facility	43.RD	21-SG-Clemson_Takacs-PA	4,366
Graduate Research Assistantship: Toward a Career on Advanced Materials Research for Space Applications	43.RD	520589	1,551
Graduate Research Assistantship: Toward a Career on Advanced Materials Research for Space Applications	43.RD	GRA	10,000
Light-Weight Nanocomposites of Superior Thermal and Electrical Properties for Space Applications	43.RD	19-SG-Clemson_Sun-RGP	10,184
Palmetto Academy 2012: Understanding the Effect of Ionizing Radiation on Articular Cartilage Biomechanics	43.RD	19-SG-Clemson_Dean-PA	563
Pilot Testing K-12 Climate Change Investigations	43.RD	21-SG-Clemson_Wagner-ER	8,000
Portable Hardware for Sensorimotor Adaptation	43.RD	21-SG-Clemson_Hoover-RF	17,541
Refining NASA's Space-Based GPS Technology for Applications in Site-Specific Irrigation and Watershed Management	43.RD	20-NE-Clemson_Khalilian-RGP/520829	8,787
South Carolina Space Grant Consortium Campus Director Funds	43.RD	18-SG-Clemson_Nagatomi-Director	1,342
GATS, Incorporated			
Analysis of Short-Term Tidal Perturbations	43.RD	GATS_SC-12005	9,570
Georgia Institute of Technology			
Design of Resilient Silicon Anodes	43.RD	R9872-S1	(9,708)
Jet Propulsion Laboratory			
Gas in Protoplanetary Systems - HERSCHEL Cycle-0	43.RD	1369554	3,795
Identification of Forming Gas Giant Planets in the Transition Object HD141569	43.RD	1474968	10,962
Identification of Forming Gas Giant Planets in the Transition Object HD141569	43.RD	1497084	3,271
Observation of OH Emission from the Transition Disk HD141569	43.RD	1460429	5,615
Outflows from Evolved Class II Sources: an Herschel/HIFI Insight into the Kinematical/Physical Properties of the Atomic and Molecular Component, PI:OT1_ipodio_1	43.RD	1433246	26
NextGen Aeronautics Incorporated			
Ablative Ceramic Foam Based TPS	43.RD	PO 13-07; Sales Order 3075; CPFF	34,485
Total National Aeronautics and Space Administration			<u>744,094</u>
Institute of Museum and Library Services			
The Open Parks Grid: the Gateway to Parks Information	45.RD	LG-05-10-0117-10	155,180
Total Institute of Museum and Library Services			<u>155,180</u>
National Science Foundation			
5th Annual Graduate Student Mini-Conference in Computational Mathematics	47.RD	DMS-1245607	274
A National EPSCoR Cyberinfrastructure Student Engagement Program	47.RD	EPS-1132168	80,188
A Novel Concept for Micro-Power Generation Using Flow-Induced Self-Excited Oscillations	47.RD	CMMI-1000667	61,727
A Priori Analysis of Subgrid Molecular Transport Effects on High Pressure Turbulent Combustion Modeling	47.RD	CBET-0965624	32,983
Advanced Cyberinfrastructure - Research and Educational Facilitation: Campus-Based Computational Research Support	47.RD	ACI-1341935	237,940

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National Science Foundation, continued			
AIR Option 2: Research Alliance Situational Intelligence for Smart Grid Optimization and Intelligent Control	47.RD	IIP-1312260	111,828
Analysis and Stability of Dynamical System Models Over Networks	47.RD	DMS-1211691	59,927
Analysis of Stochastic Context-Free Grammars for RNA Secondary Structure Prediction	47.RD	DMS-1312817	17,506
ARRA - CAREER: Influence of Social Capital on Under-Represented Engineering Students' Academic and Career Decisions	47.RD	EEC-0950710	102,253
ARRA - Discovery and Predication of Hidden Biodiversity in Black Flies (Diptera: Simuliidae)	47.RD	DEB-0841636	43,294
ARRA - MRI-R2: Acquisition of a Highly Charged Ion Beamline for Interdisciplinary Materials Research and Education at Clemson University	47.RD	DMR-0960100	27,121
ARRA - Organized Materials for Plastic Electronics: Divided Pi-Ways and Platinum Energy Canopies	47.RD	CHE-0847132	9,477
ARRA - Predictive Energy Management in Smart Vehicles: Exploiting Traffic and Terrain Preview for Fuel Savings	47.RD	CMMI-0928533	216
ARRA - REU Site: Undergraduate Research in Human-Centered Computing	47.RD	CNS-0850695	2,885
ARRA - Science Master's Program: Sustainable and Resilient Infrastructure	47.RD	DGE-1011478	80,574
ARRA - Spectroscopy of Solar-Type Stars: Fundamental Problems in Stellar Astrophysics	47.RD	AST-0908342	16,116
Autonomous Distributed Local Computing Models Using Self-Stabilization	47.RD	CCF-0832582	14,709
Biochemistry and Physiology of Novel Acetate Kinases from Eukaryotic Microbes	47.RD	MCB-0920274	183,447
Biomechanics of Self-Assembly of the Lepidopteran Feeding Device	47.RD	PHY-1305338	44,011
Broadband Dielectric Spectrometers with 1-10 nm Planar Nanofluidic Channels	47.RD	ECCS-0925424	25,251
Capillary-Channeled Polymer (C-CP) Fiber Stationary Phases for High Speed and Preparative Protein Separation	47.RD	CHE-1011820	43,864
Capillary-Channeled Polymer Fibers: Chemistries and Structures for Protein Separations and Analytics	47.RD	CHE-1307078	131,862
CAREER: A New Efficient and Cooperative Large-Scale Distributed Data Sharing System	47.RD	CNS-1254006	27,457
CAREER: Advancing the Mechanistic Understanding of Field-Scale Preferential Flow and Transport Processes in Soils Using Geophysics	47.RD	EAR-1151294	106,506
CAREER: Algorithmic Aspects of Ordinal Matching Problems	47.RD	CCF-0845593	31,290
CAREER: Changing the Landscape: Towards the Development of a Physics Identity in High School	47.RD	DRL-0952460	19,741
CAREER: Computational Modeling of Protein Evolvability	47.RD	MCB-0953783	91,417
CAREER: Creating Effective, Sustainable Inquiry-Based Instruction in Middle School Science Classrooms	47.RD	DRL-0952160	118,356
CAREER: Electromechanical Transduction of Vibratory Energy Harvesters in Random and Non-Stationary Environments	47.RD	CMMI-1055419	70,436
CAREER: Harnessing Hybrid Computing Resources in PetaScale Computing and Beyond	47.RD	OCI-1149644	77,965
CAREER: Hierarchical Mechanical Models of Cell Constructs	47.RD	CBET-1254609	46,179
CAREER: High Resolution Spectrochemical Imaging Through Tissue	47.RD	CHE-1255535	82,917
CAREER: Incorporating Patient Heterogeneity and Choice into Predictive Models of Health and Economic Outcomes	47.RD	CMMI-1150732	17,449
CAREER: Integrated Materials-Mechanics-Manufacturing Approach to Hot Blank - Cold Die (HB-CD) Forming of Lightweight Alloy Sheets	47.RD	CMMI-1254670	91,187
CAREER: Modeling Irrationalities of Designers to Support their Decisions for Net- Zero Energy Buildings	47.RD	CMMI-1054122	93,615
CAREER: Multiscale Thermomechanical Analysis of Nanomaterials and Nanostructures	47.RD	CBET-0955096	98,546
CAREER: Particle Magnetophoresis in Ferrofluid Microflows for Lab-on-a- Chip Applications	47.RD	CBET-1150670	82,314
CAREER: Student Motivation and Learning in Engineering	47.RD	EEC-1055950	95,722
CAREER: Supporting Patterns for Embedded Network Systems	47.RD	CNS-0745846	70,618
CAREER: The Evolution of Gas in Disks - Setting the Stage for Planet Formation	47.RD	AST-0954811	105,859
CC-NIE Integration: Clemson-NextNet	47.RD	OCI-1245936	312,025

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National Science Foundation, continued			
Center for Aviation and Automotive Technology Education Using Virtual E-School [CA2VES]	47.RD	DUE-1104181	364,450
CGV: Large: Collaborative Research: Coupling Simulation and Mesh Generation using Computational Topology	47.RD	IIS-1314757	47,690
CGV: Large: Collaborative Research: Modeling, Display, and Understanding Uncertainty in Simulations for Policy Decision Making	47.RD	IIS-1212501	66,953
Chemistry and the Logic of Life: A Research-Based, Integrated General Chemistry Curriculum	47.RD	DUE-0816692	3,554
CI SEEDS: Seeding the Next Generation Cyberinfrastructure Ecosystem	47.RD	ACI-1212680	22,000
CI SEEDS: Seeding the Next Generation Cyberinfrastructure Ecosystem - REU Supplement	47.RD	ACI-1212680	(438)
CI-SEEDS: Seeding the Next Generation Cyberinfrastructure Ecosystem	47.RD	ACI-1212680	165,876
Collaborative Proposal: BPC-DP: Incorporating Cultural Tools for Math and Computing Concepts into the Boys and Girls Clubs of America	47.RD	CNS-0969240	354
Collaborative Research: "Hands-On" Collaborative Reasoning Across the Curriculum	47.RD	DUE-1022941	66,323
Collaborative Research: CEDAR--A Focused Study of Sustained Upward Vertical Winds in the Auroral Zone	47.RD	AGS-1243077	12,810
Collaborative Research: CEDAR--Application of the RENOIR System in Brazil to Study the Gravity Wave Trigger Mechanism in the Production of Equatorial Spread F and Scintillations	47.RD	AGS-0940217	4,516
Collaborative Research: CEDAR--Development and Application of a Multi-site Observing Network to Study Mid-latitude Thermospheric Dynamics	47.RD	AGS-1138931	52,129
Collaborative Research: CEDAR--Observational and Numerical Studies of Tide-planetary Wave Coupling	47.RD	AGS-1139048	20,688
Collaborative Research: Characterizing Climate-Induced Qualitative Changes in Plant Biopolymer Composition and Their Influence on Soil Processes	47.RD	DEB-1145993	130,224
Collaborative Research: Comprehensive Investigation of Midlatitude Ionospheric Irregularities	47.RD	AGS-1007539	46,124
Collaborative Research: Developing Engineer of 2020 Traits: How Do Non-curricular Activities Impact African American Students?	47.RD	EEC-1159813	106,748
Collaborative Research: Do Diverse Members of the Epsilonproteobacteria Employ a Novel Nitrate Reduction Pathway?	47.RD	MCB-1265410	99,633
Collaborative Research: Effects of Hydrologic Processes on In Situ Stress Transients	47.RD	EAR-0944315	56,748
Collaborative Research: Engineering Education Research Leader NetWorkshops: Mentoring, Communicating, and Power Brokering for the Next Generation	47.RD	EEC-1314725	21,752
Collaborative Research: Fabry-Perot Interferometer (FPI) to Study Ion-Neutral Coupling Near the Southern Crest of the Equatorial Ionization Anomaly in the American Sector	47.RD	AGS-1153294	39,336
Collaborative Research: Fluid Dynamics Foundations of Cell Printing	47.RD	CBET-0936235	52,828
Collaborative Research: G-SESAME Cloud: A Dynamically Scalable Collaboration Community for Biological Knowledge Discovery	47.RD	DBI-0960586	76,101
Collaborative Research: Hybrid Integration of Plasmonic Interferometer Sensors and Active Optoelectronic Devices on a Single Microfluidic Chip	47.RD	ECCS-1127957	55,750
Collaborative Research: Hybrid Modeling of Reactive Transport in Porous and Fractured Media	47.RD	EAR-1246297	26,497
Collaborative Research: Jicamarca Radar Studies of Gravity Waves from D Region to Lower F Region	47.RD	AGS-1143514	27,161
Collaborative Research: Measurements and Modeling of Subgrid-Scale Turbulence in the Atmospheric Surface Layer	47.RD	AGS-0638392	5,251
Collaborative Research: PFISR Ion-Neutral Observations in the Thermosphere (PINOT)	47.RD	AGS-1243467	21,467
Collaborative Research: Processing and Properties of Cellulose Films for MEMS Applications	47.RD	CMI-1130825	1,000
Collaborative Research: Processing and Properties of Cellulose Films for MEMS Applications	47.RD	CMMI-1130825	63,527
Collaborative Research: Reformulation-Linearization Technique for Discrete and Continuous Nonconvex Optimization with Applications	47.RD	CMMI-0968909	37,436

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RESEARCH AND DEVELOPMENT CLUSTER, Continued			
National Science Foundation, continued			
Collaborative Research: Research Initiation Grant: Influence of Motivation on Learning Outcomes in an Engineering Service Course	47.RD	EEC-1240327	47,854
Collaborative Research: REU Site: Computational Algebraic Geometry, Combinatorics, and Number Theory	47.RD	DMS-1156761	24,341
Collaborative Research: Topological States and Quantum Information in Semiconductors and Cold Atom Superfluids	47.RD	PHY-1104527	61,766
Collaborative Research: G-SESAME Cloud: A Dynamically Scalable Collaboration Community for Biological Knowledge Discovery	47.RD	DBI-0960586	8,178
Collaborative Research: REU Site: Computational Algebraic Geometry, Combinatorics, and Number Theory	47.RD	DMS-1156761	155
Complexity and Algorithms of Decoding Algebraic Codes	47.RD	CCF-0830581	(1)
Conjugated Polymer Nanoparticles for Nanoscale Chemical Microscopy	47.RD	CHE-1058885	77,977
Controlling and Enhancing Optical Gradient Forces in Integrated Optomechanical Devices	47.RD	ECCS-1101845	116,331
Coupling Small-Particle Adsorbents with Membranes for Trace-Containment Removal in Water Treatment	47.RD	CBET-1236070	102,010
CPA-SEL: Collaborative Research-Continuing Progress Toward Verified Software Critical Raindrop Characteristics: Fall Speed, Shape, and Size Distributions	47.RD	CCF-0811748	760
AGS-1144846	47.RD	AGS-1144846	144,399
CSR: EAGER: A Scalable and Efficient Resource Discovery System for Large-Scale Distributed Systems	47.RD	CNS-1249603	14,646
CSR: Large: Collaborative Research: Computational Jewelry for Mobile Health	47.RD	CNS-1314342	78,971
CSR: Small: Collaborative Research: An Architecture for the Emergency Retasking of Wireless Sensors Networks (ALERT)	47.RD	CNS-1116976	36,318
CSR: Small: Efficient and Reciprocal File Replication and Consistency Maintenance in Pervasive Distributed Computing	47.RD	CNS-0917056	142,067
Development of Performance-Based Design Guidelines for Integrating Phase Change Materials in Buildings	47.RD	CMMI-0927962	36,343
Dimensions: Collaborative Research: Functional Diversity of Chemosymbiosis in Lucinid Bivalves from Coastal Biomes	47.RD	DEB-1342763	6,009
DISSERTATION RESEARCH: Linking Genomics, Oceanography and Ecology in Understanding Adaptive Variation in Space and Time in Amphidromous Gobies of the Hawaiian Islands	47.RD	DEB-1310962	1,771
EAGER: An Efficient and Effective Distributed Information System	47.RD	IIS-1354123	4,913
EAGER: Developing a Framework for a Cyber-Infrastructure General Practitioner Program	47.RD	OCI-1251544	142,706
EAGER: Ecosystem Modeling for Infrastructure Evaluation	47.RD	ACI-1343033	104,520
EAGER: GENI Experiments on Pervasive Data Sharing Over Heterogeneous Networks	47.RD	CNS-1049947	8,634
EAGER: Prototype Tool for Visualizing Online Polarization	47.RD	IIS-1247198	148,462
EAGER: PXFS - A Persistent Storage Model for Extreme Scale	47.RD	CCF-1142905	94,992
EAGER: Report on International Data Exchange Requirements (RIDER)	47.RD	OCI-1223688	183,162
EAGER: Transcriptome Analysis of CHO Cells to Improve Productivity and Control Protein Aggregation	47.RD	CBET-1218345	88,294
EAGER: Collaborative Research: SciWiNet: A Science Wireless Network for the Research Community	47.RD	CNS-1346632	219,765
EFRI-BSBA: Multifunctional Materials and Devices for Distributed Actuation and Sensing	47.RD	EFRI-0937985	151,525
EFRI-CBE: Emerging Frontiers in 3-D Breast Cancer Tissue Test System	47.RD	EFRI-0736007	304,967
EFRI-COPN: Neuroscience and Neural Networks for Engineering the Future Intelligent Electric Power	47.RD	EFRI-1238097	369,335
Electromagnetic Scattering From 3-D Objects Buried in Layered Lossy Earth with Multiple Rough Interfaces	47.RD	ECCS-0821918	5,180
Emphasizing Core Calculus Concepts Using Biomedical Applications to Engage, Mentor and Retain STEM Students	47.RD	DUE-1044265	52,555
ERC-Small Business: Micropatterning of Film Extrusion Die Surfaces	47.RD	EEC-1128481	33,857
Establishing Clemson University as a Research Site for CELDi	47.RD	IIP-0641414	8,214
Evaluation of Nanoparticle Behavior During Transitions from Engineered to Natural Systems	47.RD	CMMI-1057633	125,313

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RESEARCH AND DEVELOPMENT CLUSTER, Continued			
National Science Foundation, continued			
Expanding the Clemson Calculus Challenge into Southeastern Regional Calculus Contest	47.RD	DMS-1118656	70
Experimental and Modeling Study of Risk from Ember Storms	47.RD	CMMI-1200560	57,407
Experimental Investigation of Multiscalar Subgrid-Scale Mixing and Turbulence- Chemistry Interaction	47.RD	CBET-1333489	40,864
Exploiting Liquid-State Transduction Materials in Vibratory Energy Harvesting	47.RD	CMMI-1335049	31,798
Extrapolating the Concept of Protein Corona for Understanding Nanoparticles at Large	47.RD	CBET-1232724	77,516
Formation of Halonitromethanes and Nitrosamines During Ozonation in Drinking Water Treatment	47.RD	CBET-1066567	112,600
Fundamental Study of Carbon Dots for Fluorescence Bio-imaging/sensing	47.RD	CBET-0967423	130,720
Gene Flow and Divergence Across the Equatorial Tropical Marine Barrier: Past, Present and Future	47.RD	OCE-0961996	4,337
GOAL/Collaborative Research: Fundamentals of Mircoemulsion Boiling from Interfacial Thermodynamics to Multiphase Heat Transfer	47.RD	CBET-1336590	12,205
GOAL: Low-Ash Lignin Biofuel from Black-Liquor Streams	47.RD	CBET-1236759	103,704
GOAL: Understanding Plasticization and Compaction Mechanisms in Perfluorocyclobutyl Polymer Thin Films and Membranes	47.RD	CBET-0966581	55,269
GOAL: Turning Renewable Solvent Systems for Lignin Purification and Fractionation	47.RD	CBET-1403873	81
Graduate Research Fellowship	47.RD	DGE-1246875	2,000
Graduate Research Fellowship Program	47.RD	DGE-1246875	496,142
Graduate Research Fellowship Program - Biofabrication of Cellular Microspheroids for Organ Printing	47.RD	DGE-1246875	8,693
Graduate Research Fellowship Program: Use of Mobile Shaker for In Situ Liquefaction Resistance and Dynamic Behavior of Natural Sand Deposits Near Charleston	47.RD	DGE-1246875	40,192
Graduate Research Fellowship Program: Building Resilient Residential Communities through Hurricane Mitigation Assessments	47.RD	DGE-1246875	40,807
Growth Rates of Bacterial Taxa in Coastal Marine Ecosystems	47.RD	OCE-1261359	262,920
GSE/RES: Impact of Single-Sex Public Educational Environments on Mathematics and Science Classroom Environment, Student Academic Performance, and Student Self-Concept	47.RD	HRD-1136248	171,200
GSE/RES: Sustainability Topics as a Route to Female Recruitment in Engineering	47.RD	HRD-1036617	111,498
HCC: Small Eye Movement in Stereoscopic Displays, Implications for Visualization	47.RD	IIS-0915085	1,775
HCC: Small: Conversational Agents in Web-Based Consumer Environments Designed for Older Users	47.RD	IIS-0955763	30,779
Hilbert Spaces of Analytic Functions and Their Applications	47.RD	DMS-1304208	7,704
How Does the Plant Say-No More?: A Molecular Genetic Approach to Nodule Number Regulation	47.RD	IOS-1146014	136,084
Human-Centered Computing Scholars: Fostering a New Generation of Underrepresented and Financially Disadvantaged Researchers	47.RD	DUE-1060545	70,146
I/UCRC CGI: I/UCRC for the Ceramic, Composite and Optical Materials Center	47.RD	IIP-1034979	72,024
I/UCRC FRP: collaborative Research: The Physical Internet for a Sustainable Logistics Future - Advancing CELDi's Leadership Position	47.RD	IIP-1332007	18,993
I/UCRC: Collaborative Research: Center for Excellence in Logistics and Distribution, Phase II	47.RD	IIP-1266013	24,101
I-Corps: Novel Natural Antioxidants Extracted from Animal Blood	47.RD	IIP-1402387	48,236
I-Corps: A Novel Functional Shoulder Brace to Limit Dislocation	47.RD	IIP-1265279	29,334
II-NEW: Robot Arms for Interactive Perception of Highly Non-Rigid Objects	47.RD	CNS-1305267	43,097
Image Reconstruction In Diffuse Optical Tomography With Sparsity Constraints	47.RD	DMS-0915214	1,492
Impact of Nonmigrating Tides on the Thermospheric Energy Budget and Constituents	47.RD	AGS-1112704	7,745
Improved Methods for Incompressible Viscous Flow Simulation	47.RD	DMS-1112593	70,167
Individual Nomination (PAESMEM)	47.RD	DUE-1101770	8,579
INSPIRE: Evaluating the Effect of Cyberinfrastructure on Universities Production Process	47.RD	SMA-1243436	188,299
Instrument Development: Ultra-Sensitive, Single-Pass Electron Paramagnetic Resonance Spectrometers	47.RD	CHE-1152892	53,877

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RESEARCH AND DEVELOPMENT CLUSTER, Continued			
National Science Foundation, continued			
International Collaboration in Chemistry: Preparation and Utilization of SF5-Containing Building Blocks	47.RD	CHE-1124859	125,878
Materials World Network: Switchable Polymer Interfaces for Bottom-Up Stimulation of Mammalian Cells	47.RD	DMR-1107786	113,500
Mathematics Partnering With Computer Science to Improve Calculus Instruction and Learning	47.RD	DUE-0817442	85,538
Modeling of the Subgrid-Scale Pressure-Strain-Rate Correlation in the Atmospheric Surface Layer	47.RD	AGS-1335995	82,979
Molecular Dynamics Simulations and Small Angle Neutron Scattering Studies of Light-Emitting Polymeric Nanoparticles	47.RD	CHE-1308298	78,496
Molecular Physics of the Electrical Double Layer in Ionic Liquids	47.RD	CBET-0967175	74,330
MRI: Acquisition of High Performance Computing Instrument for Collaborative Data-Enabled Science	47.RD	CNS-1228312	12,810
MRI: Development of the Intelligent River (R), A Basin-Scale Monitoring Instrument	47.RD	CNS-1126344	350,082
Multimodal Membranes for High-Throughput Bioseparations	47.RD	CBET-1159622	47,055
NEDG: Mechanisms for Efficient and Reliable Routing in Hybrid Wireless Networks	47.RD	CNS-1025652	39,916
Network Target Coordination for Complex System Optimization	47.RD	CMMI-1129969	119,786
Novel Optical Hosts: chemistry, Single Crystal Growth and Applications	47.RD	DMR-1410727	5,664
NSF BPC-A: Institute for African-American Mentoring in Computing Sciences (iAAMCS)	47.RD	CNS-1303156	525,463
NSF/CBMS Regional Conference in the Mathematical Sciences: Uncertainty Principles in Harmonic Analysis: Gap and Type Problems	47.RD	DMS-1241272	30,243
NSF/DOE Partnership on Advanced Combustion Engines: Thermal Barrier Coatings for the LTC Engine - Heat Loss, Combustion, Thermal vs. Catalytic Effects, Emissions, Exhaust Heat	47.RD	CBET-1258714	251,665
Numerical Approximations of Non-Newtonian Fluid Flows With Applications	47.RD	DMS-1016182	61,071
Optical Carrier Based Microwave Interferometry for Spatially Continuous Distributed Monitoring of Structural Health	47.RD	CMMI-1359716	49,833
Quantitative Structure-Adsorbability Relationships for the Adsorption of Organic Chemicals by Carbon Nanotubes	47.RD	CBET-0967425	170,539
RAPID: Impact of Earthquakes on the Electricity Infrastructure Technology	47.RD	ECCS-1216298	15,272
RAPID: Inputs of Polycyclic Aromatic Hydrocarbon to Drinking Water Sources from the Yosemite Wildfire	47.RD	CBET-1361678	19,839
RAPID: Responses of Different Tree Species to a Severe Ice Storm in the Southeastern United States	47.RD	DEB-1442131	415
REU Site: Advanced Functional Membranes	47.RD	EEC-1061524	20,475
REU Site: Interfaces and Surfaces: Exploring and Experiencing Science (I SEE Science)	47.RD	DMR-1062873	69,829
REU Site: Solid-State Devices for Electronics, Photonics, and Magnetics Technology	47.RD	EEC-1262991	122,017
REU Site: Undergraduate Research in Collaborative Data Visualization Applications	47.RD	ACI-1359223	43,436
REU Site: Data-Intensive Computing	47.RD	OCI-1263180	76,408
RI: Medium: Collaborative Research: Real-Time Continuum Manipulation	47.RD	IIS-0904116	112,538
RI: Small: Interactive Perception for Manipulating Non-Rigid Objects	47.RD	IIS-1017007	62,515
Role of Cell Volume Changes in Mechanotransduction of Hydrostatic Pressure	47.RD	CBET-1264579	78,802
Scalable Intelligent Power Monitoring and Optimal Control of Distributed Energy Systems Using Adaptive Critics	47.RD	ECCS-1308192	73,957
Selenium Antioxidant Mechanisms: Metal Binding vs. Reactive Oxygen Species Scavenging	47.RD	CHE-1213912	117,022
Self-Healing Photochromic Polymeric Coatings	47.RD	CMMI-1332964	5,025
Semi Fluorinated Polymers: Forming Energy Controlled Responsive Interfaces	47.RD	DMR-0907390	46,457
SHB: Small: An Assistive, Robotic Table [ART] Promoting Independent Living	47.RD	IIS-1116075	60,305
SHB: Type II (INT): Collaborative Research: Creating Learning Systems with Mobile Technology to Improve Perioperative Services	47.RD	IIS-1237077	195,856
SHF: Medium: Collaborative Research: Specification and Mathematics Engineering for the Verified Software End-Game	47.RD	CCF-1161916	76,109
SHF: Small: RUI: Collaborative Research: Accelerators to Applications - Supercharging the Undergraduate Computer Science Curriculum	47.RD	CCF-0916387	2,753

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National Science Foundation, continued			
Short Course on Multi-Scale Computational Approaches for Simulating Polymers and Soft Matter: From Atomistic to Mesoscale	47.RD	DMR-1411174	5,600
SNM: Defect-Engineered Nanocarbons for Electrochemical Energy Storage	47.RD	CMMI-1246800	199,228
Southeast Number Theory Meetings	47.RD	DMS-1303254	9,240
Southeastern Analysis Meeting: SEAM 2014	47.RD	DMS-1400361	22,077
Spider Orb-Web Inspired Cognitive, Fault-Tolerant Fiber Optic Sensor Network for SHM Under Harsh Conditions	47.RD	CMMI-1360664	53,642
Student Support: 2013 Manufacturing Science and Engineering Conference (MSEC) and 41st North American Manufacturing Research Conference (NAMRC)	47.RD	CMMI-1263802	21,425
Supporting a Community Building Workshop in Computer Education Research	47.RD	DUE-1355395	3,213
Symposium: Remotely Controlled Colloids, Interfaces and Biosystems	47.RD	CBET-1339532	9,100
The Evaluation of Life Histories in Geminate Echinoderms: A Comparative Approach to Unscrambling the Relationships Among Environment, Egg Size, and the Energetics of Development	47.RD	OCE-0850764	2,570
The Geography of Proliferating Conservation Easements	47.RD	BCS-1068906	7,499
Tigers Teach Noyce Scholarship	47.RD	DUE-1136293	241,682
Topics on Computational Algebra	47.RD	DMS-1005369	53,040
Transforming Robust Design Concept into a Novel Geotechnical Design Tool	47.RD	CMMI-1200117	90,034
Travel Scholarship for Graduate Students to attend PublishED 2014; Grenoble, France	47.RD	CMMI-1346951	16,673
TUES Type 1: Robots in Business and Society - A Hands-On Learning Experience	47.RD	DUE-1245250	50,699
Ultrasonic Particle Scrubbing With Drops	47.RD	CBET-1336632	59,750
Understanding and Manipulating Charge and Entropy Flows in Layered Structured Transition Metal Dichalcogenides by and for Thermoelectricity: A Multi-Scale Materials Chem. Approach	47.RD	DMR-1307740	59,456
Understanding the Macroscopic Dynamics of Ultrasonic Consolidation	47.RD	CMMI-1068977	89,407
Vehicle-Infrastructure Integration Enabled Plug-In Hybrid Electric Vehicles for Energy Management	47.RD	CMMI-0928744	55,624
Virtual Environment Interactions: Exploring Grounded Embodied Pedagogy in Support of Computational Thinking	47.RD	CNS-1344228	65,383
Pass-through programs from:			
Advanced Photonic Crystals, LLC			
Hydrothermal Growth of Potassium Beryllium Fluoroborate (KBBF) for Deep UV Nonlinear Optical Applications	47.RD	IIP-1058055 Prime # NSF	461
BBN Technologies			
ARRA - Clemson Campus Trials of Enterprise GENI: Enabling Measurement and Control of Network Traffic over Campus Ethernet, Wireless Mesh, and Vehicular Networks	47.RD	9500010146 1833A	141
GENI WiMAX at Clemson	47.RD	1843A/PO# 9500011083	52,896
GENI WiMAX at Clemson - REU Supplement	47.RD	1843/PO#9500011083	8,111
GENI: Experimenting with Persistent Live Video Streaming Service	47.RD	14303/PO# 9500012170/1931B	3,574
Clemson University Research Foundation			
ARRA - South Carolina Inter- and Intra- Campus Cyber Connectivity (C2)	47.RD	2011-703	42,934
CAREER: Control of Processes Actuated with Mobile Radiant Sources	47.RD	CMMI-1055254	81,458
CAREER: Model-Based Control of Machining Processes and Scalability for Manufacturing System Control.	47.RD	CMMI-0954318	53,913
Collaborative Research: Pattern Transfer Nanomanufacturing with Magnetically-Recorded Nanotemplates	47.RD	CMMI-1130819	46,330
Synthesis-Microstructure-Performance Relations in Oxide Ceramic Scintillators	47.RD	DMR-1207080	81,492
Colorado State University			
NEESR-CR: NEESoft: Seismic Risk Reduction for Soft-Story Woodframe Buildings	47.RD	G-4948-2	54,773
Fayetteville State University			
Broadening Participation Research Project: Advancing Interest and Motivation (AIM) for STEM Careers	47.RD	NSF AIM for STEM Careers	26,150
Georgia Institute of Technology			
Goal: Neural Networks and Adaptive Critic Designs for Energy Security & Sustainability	47.RD	R9360-G2	4,699

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National Science Foundation, continued			
Pass-through programs, continued:			
Indiana University			
SHB: Small Privacy-Enhanced Technologies to Support Underserved Older Adults Age In Place	47.RD	BL-4848754-CLEM PO 1346972	51,257
TWC SBES: Medium: Collaborative: Crowdsourcing Security	47.RD	BL-4848775-CLEM PO#1346549	54,704
Lumany LLC			
STTR Phase I: Diode pumped Modelocked Titanium Sapphire Fiber Laser	47.RD	None	5,132
Medical University of South Carolina			
Structure and Dynamics of the Spider Dragline Silk Assembly Process	47.RD	MUSC11-106	54,001
Northwestern University			
DMREF: Simulation-Driven Design of Highly Efficient MOF/ Nanoparticle Hybrid Catalyst Materials	47.RD	SP0023246-PROJ0006614	22,602
Pennsylvania State University			
REU: Participant Support TRPGR: Comparative Genomics of Environmental Stress Responses in North American Hardwoods	47.RD	4730-CU-NSF-5974	6,193
TRPGR: Comparative Genomics of Environmental Stress Responses in North American Hardwoods	47.RD	4375-CU-NSF-5974	247,820
Purdue University			
Characterizing and Modeling the Experience of Transfer Students in Engineering	47.RD	4101-38563	78,054
South Carolina Research Authority			
ARRA - EPSCOR Desktop to TeraGrid Ecosystem: Integratin Campus-Based with National Cyberinfrastructure	47.RD	2002-593 TO#0062 (EPS-0919440)	128,727
South Carolina State University			
A Partnership in Observational and Computational Astronomy (POCA)	47.RD	08-586009-BAPS-CU-SC	23,438
Louis Stokes Alliance for Minority Participation Program (SCAMP) - Year One	47.RD	13-581099-SCAMP-CU-SC	31,304
University of California Davis			
Geoinformatics: Facility Support: Computational Infrastructure for Geodynamics	47.RD	200911281-06	55,642
University of Oklahoma			
NEESR-SG: Understanding and Improving the Seismic Behavior of Pile Foundations in Soft Clays	47.RD	2009-46	576
University of South Carolina			
The South Carolina Project for Organ Biofabrication - Research Infrastructure Improvement (RII) Track Grant	47.RD	13-2357 22410-Z117	11,912
The South Carolina Project for Organ Biofabrication (Controlled Assembly and Maturation of Small Linear Blood Vessels Using Magnetic Force)	47.RD	13-2298 PO#51895L/22410-Z101	5,493
The South Carolina Project for Organ Biofabrication (Increasing Underrepresented Minority Intellectual Capital and Scientific Networking in the Biological Sciences at Clemson University)	47.RD	13-2424 PO#52438L/22410-Z123	1,626
The South Carolina Project for Organ Biofabrication (Scaffold-Free Fabrication of Fascular Constructs Using Inkjetting)	47.RD	13-2299 PO#51893L/22410-Z105	27,013
The South Carolina Project for Organ Biofabrication (Supporting in Vitro Vascular Structure Maturation by Enhancing Elastic Fiber Assembly)	47.RD	13-2279 PO#51894/22410-Z106	25,547
University of Tennessee			
MIDGE: A Collaborative Effort to Increase Taxonomic Expertise in Understudied Families of Nematocerosus Diptera	47.RD	8500012914	78,969
University of Texas Austin			
Campus Bridging for Stampede	47.RD	UTA13-000068	52,931
University of Washington			
CREATIV:Tools, Models and Innovation Platforms for Research on Social Media	47.RD	7425278	13,086
Washington University			
Gordon Research Conference on Visualization in Science and Education	47.RD	WU-12-243 PO# 2917766T	2,377
Winston Salem State University			
Mixed Methods Study of the Factors Influencing Recruitment, Retention, and Academic Achievement of African American Undergraduate Females and Males in Math, Science, and Engineering Disciplines	47.RD	210271 A	22,310
Total National Science Foundation			16,177,150

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RESEARCH AND DEVELOPMENT CLUSTER, Continued			
Small Business Administration			
An Innovation Center at the Clemson University Advanced Materials Center	59.RD	SBAHQ-10-I-0278	51,724
Total Small Business Administration			<u>51,724</u>
Department of Veterans Affairs			
Nanoparticle Coupled Antioxidants for Respiratory Illness in Veterans	64.RD	VA 247-P-1705 PO#534-D47000	34,995
Total Department of Veterans Affairs			<u>34,995</u>
Environmental Protection Agency			
Ben Sharp - Modeling Switchgrass Production in South Carolina Based on Farmer's Decisions: A Stochastic and Spatial Analysis	66.RD	FP-91717201	6,825
Defining Significant Nexus with Navigable Waters for Small, Relatively Isolated Wetlands in the Piedmont Ecoregion	66.RD	CD95488711	39,598
Dentritic Polymers as Biocompatible Dispersants for Oil Spill Remediation	66.RD	RD-83518201	153,172
Firefly Watch: Monitoring for Sustainability	66.RD	SU-83549601	14,984
STAR Fellowship for Thomas Ross Garner	66.RD	FP-91713301	11,176
Understanding and Managing Risks Posed by Brines Containing Dissolved Carbon Dioxide	66.RD	RD-83438301	31,682
Pass-through programs from:			
North Carolina State University			
Achieving New Milestones For Stormwater Runoff Reductions in Black Creek Watershed	66.RD	2012-2709-01	2,487
William Marsh Rice University			
EPA/STAR - Environmental Impact of Nanox	66.RD	R16992	186,475
Total Environmental Protection Agency			<u>446,399</u>
Nuclear Regulatory Commission			
Junior Nuclear Environmental Engineering and Science Faculty Support	77.RD	NRC-38-10-921	53,442
Probabilistic Risk Assessment Faculty Development in Nuclear Engineering and Science Program at Clemson University	77.RD	NRC-HQ-13-G-38-0002	24,269
US NRC Fellowship Grant at Clemson University	77.RD	NRC-HQ-12-G-38-0016	89,181
US NRC Nuclear Education Program Scholarship and Fellowship	77.RD	NRC-38-08-956	1,740
Total Nuclear Regulatory Commission			<u>168,632</u>
Department of Energy			
ARRA - Fundamentals & Advanced Power Systems Certificate Programs for Training the Power Industry Sector	81.RD	DE-OE0000466	110,678
Asymmetric Hybrid Nanoparticles (AHNs)	81.RD	DE-FG02-06ER46342	87,368
Alternative Sample Loading Preparation for Thermal Ionization Mass Spectrometry	81.RD	DE-NA0001735	195,120
Clemson University CyberInstitute	81.RD	DE-SC0001984	117,489
Clemson University's Solar Decathlon 2015: A Techno-Local Solar House for South Carolina	81.RD	DE-EE0006559	36,786
Clemson University's Synchrophasor Engineering Education Program (CU-ShEEP)	81.RD	DE-OE0000660	57,124
Examination of Actinide Chemistry at Solid-Water Interfaces to Support Advanced Actinide Separations	81.RD	DE-SC0010355	29,041
First-Principles Calculation of Vibrational Mode in Complex Materials	81.RD	DE-SC0008487	132,375
From Interfaces to Bulk: Experimental - Computational Studies Across Time and Length Scales of Multi Functional Ionic Polymer	81.RD	DE-SC0007908	218,997
Lower Length Scale Characterization and Validation of Formation and Stability of Helium Bubbles in Nano-structured Ferritic Alloys Under Irradiation	81.RD	DE-NE0000728	17,747
Multiscale Modeling of Grain Boundary Segregation and Embrittlement in Tungsten for Mechanistic Design of Alloy for Coal Fired Plants	81.RD	DE-FE0003892	31,517
Novel High Temperature and Radiation Resistant Infrared Glasses and Optical Fibers for Sensing in Advanced Small Modular Reactors	81.RD	DE-NE0000727	40,408

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RESEARCH AND DEVELOPMENT CLUSTER, Continued			
Department of Energy, continued			
Proof of Feasibility of Using Well Bore Deformation As A Diagnostic Tool To Improve Co2 Sequestration	81.RD	DE-FE0004542	144,730
Quantifying Microbe-mineral Interactions Leading to Remotely Detectable Induced Polarization Signals: Implications for Monitoring Bioremediation	81.RD	DE-SC0002280	12,612
Rigid Nanostructured Organic Polymer Monolith for In Situ Collection and Analysis of Plant Metabolites from Soil	81.RD	DE.-SC0010832	35,847
SCM Inventory Policy Simulator Upgrade Project	81.RD	SRNS014	10,368
Pass-through programs from:			
Battelle			
R&D of the Liquid-Sampling Atmospheric-Pressure Glow Discharge (LS-APGD)	81.RD	228064	34,614
Battelle Energy Alliance, LLC			
Precursor Derived Nanostructured SI-C-X Materials for Nuclear Applications	81.RD	00145027	70,026
Predictive Maturity of Multi-Scale Simulation Models for Fuel Performance	81.RD	00101999	61,536
Clemson University Research Foundation			
ARRA - Electroalcoholgenesis: Bioelectrochemical Reduction of CO2 to Butanol	81.RD	MUSC10-063	2,200
Compact, Highly Sensitive and Specific Mid-Infrared (MIR) Chemical Sensors	81.RD	DE-NA0000421	16,448
Development of a Self-Consistent Model of Plutonium Sorption: Quantification of Sorption Enthalpy and Ligand-Promoted Dissolution	81.RD	DE-SC0004883	273,275
Fluoropolymers, Electrolytes, Composites and Electrodes	81.RD	DE-FG02-05ER15718	127,604
GATE Center of Excellence in Sustainable Vehicle Systems	81.RD	DE-EE0005571	127,878
Lignin Recovery and Purification	81.RD	None	622
Quantification of Cation Sorption to Engineered Barrier Materials Under Extreme Conditions	81.RD	120716	295,946
Stabilization of Pu Surface Complexes on Mineral Colloids by Natural Organic Matter	81.RD	B597372	78,277
Los Alamos National Laboratory			
Advanced Storage - High Performance File System Research	81.RD	238866-1	214,924
Louisiana State University			
Computational Catalysis and Atomic-level Synthesis of Materials:			
Building Effective Catalysts from First Principles	81.RD	41924	104,347
Missouri University of Science and Technology			
Additive Manufacture of Smart Parts with Embedded Sensors for In-Situ Monitoring in Advanced Energy Systems	81.RD	00042083-01	95,321
Micro-Structured Sapphire Fiber Sensors for Simultaneous Measurements of High Temperature and Dynamic Gas Pressure in Harsh Environments	81.RD	00026229-02 (00045401 - Hai-Lung Tsai)	94,156
Robust Ceramic Coaxial Cable Down-Hole Sensors for Long-Term in Situ Monitoring of Geologic CO2 Injection and Storage	81.RD	00046435-01	27,210
MWH Americas, Incorporated			
Laboratory Evaluation of Biostimulation to Treat Chlorinated Ethenes in the Chatsworth Formation, Santa Susana Field Laboratory, Ventura Co., CA	81.RD	S10504105-101050-OF // (old)S1010919-96944-OF	49,088
NanoSonic, Incorporated			
Nanoscale Approach to High Performance Thermoelectric Composites	81.RD	E-4317	65,598
Robert Bosch, LLC			
Recirculated Exhaust Gas Intake Sensor (REGIS) Enabling Cost-Effective Fuel Efficiency Improvement	81.RD	DE-EE0005975-001	169,086
South Carolina Universities and Research Foundation			
Alternative Sintering of Ceramic Waste Forms	81.RD	SRNS009	7,851
ARML Imaging Instrument Access	81.RD	B139003	5,327
ARML Imaging Instrument Access	81.RD	SRNS006	1,769
Examination of the Electrical Properties of Micro- and Nano-Scale Properties in Weak Electrostatic Fields	81.RD	B139002	59,762
Examination of the Electrical Properties of Micro- and Nano-Scale Properties in Weak Electrostatic Fields	81.RD	SRNS004	23,656
Fabrication of Nanostructured Rhenium Films	81.RD	SRNS010	32,014
Photonic Crystals for Enhanced Light Outcoupling of Scintillation Based Detectors	81.RD	SRNS012	18,166
SCM Inventory/Warehouse Analysis Study Project	81.RD	SRNS003	42,729
SRNL-Graduate Course on Nuclear Safeguards	81.RD	B139005	9,799

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RESEARCH AND DEVELOPMENT CLUSTER, Continued			
Department of Energy, continued			
Pass-through programs, continued:			
South Carolina Universities and Research Foundation, continued			
SRNS SCM Asset Management Operational Improvements	81.RD	B139009	15,799
SRR Technical Support Provided by Clemson University	81.RD	SRRA001	109,302
SRR Technical Support Provided by Clemson University	81.RD	SRRA002	16,991
Support on Performance and Limitations of Electron Backscatter Diffraction	81.RD	B139007	11,348
Uranium Particle Characterization	81.RD	SRNS007	20,538
South Carolina Energy Office			
Wind Energy Supply Chain and Offshore Wind Economic Impact Study, Phase II	81.RD	C-002-14	15,000
South Dakota State University			
Regional Biomass Feedstock Partnership - Biomass Residue Removal	81.RD	3TG146	217
The Consortium for Plant Biotechnology Research, Incorporated			
Development of Environmentally Friendly Transgenic Turfgrass with Enhanced Drought and Salt Tolerance	81.RD	GO12026-316	5,333
University of Georgia			
Environmental Protection of DOE Lands: Studies in Long-Term Stewardship	81.RD	RR267-420/4893886	8,324
University of Illinois			
Characterizing the Combined Roles of Iron and Transverse Mixing on Uranium Bioremediation in Groundwater Using Microfluidic Pore Networks	81.RD	A3018 2008-04979-01	15,684
US Automotive Materials Partnership LLC			
Development of Advanced Steel for Lightweight Vehicles	81.RD	13-2825-AMP	155,855
UT-Battelle, LLC			
R&D Building Reliable Data Transfer Tool	81.RD	4000108178	36,464
Wireless Power Transfer (WPT) and Charging of Plug-In Electric Vehicles	81.RD	4000119528	206,785
Resilient Home Program Support - Southeast Region Research Initiative (SERRI)	81.RD	4000087337	(562)
Robust Network Fusion Algorithms for Detection and Localization of Radiation Sources	81.RD	4000127400 / Vendor # 0000062498	<u>12,087</u>
Total Department of Energy			<u>4,016,601</u>
Department of Education			
Graduate Fellowships in Electrical and Computer Engineering	84.RD	P200A120224-13	95,553
Graduate Training in Engineering and Managing Resilient and Sustainable Civil Infrastructure	84.RD	P200A120222-13	182,867
Pass-through programs from:			
Iowa State University			
Professional Development for Algebra Progress Monitoring	84.RD	432-28-07	78,972
Orangeburg County Consolidated School District Three			
PD12/Orangeburg School District 3/Professional Development for Integrated Inquiry	84.RD	None	11,034
South Carolina Commission on Higher Education			
Improving Middle Grades Teacher Quality through the Clemson Mathematics Institute and Video Club	84.RD	ITQ FY2012-13	25,762
Improving Middle Grades Teacher Quality through the Clemson Mathematics Institute and Video Club	84.RD	ITQ FY2013-14	65,616
The Clemson Integrated Mathematics and Science Technology Institute - ITQ FY2013-14	84.RD	ITQ FY2013-14 Supplemental Grants Summer 2014	36,418
Spartanburg School District Seven			
PD12 Professional Development for Integrated Inquiry	84.RD	None	11,360
University of Central Florida			
MILMI - International Masters in Laser Materials and Interactions	84.RD	166253	(251)
University of Michigan			
Lifelong Learning Curriculum Transformation Project	84.RD	3002053929	<u>2,341</u>
Total Department of Education			<u>509,672</u>

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RESEARCH AND DEVELOPMENT CLUSTER, Continued			
Vietnam Education Foundation			
Vietnam Education Foundation Fellowship	85.RD	None	320
Total Vietnam Education Foundation			320
Election Assistance Commission			
2010 Voting Technology and Accessibility Research - Accessible Voting Technology Initiate	90.RD	EAC110149A	2,129,605
Total Election Assistance Commission			2,129,605
Department of Health and Human Services			
(Bruce) Histology and Imaging Core-Center of Biomaterials for Tissue Regeneration (CBTR)	93.RD	5P20GM103444-05	69,802
(Gao) Stem Cell-myocyte Electrical Coupling-Center of Biomaterials for Tissue Regeneration (CBTR)	93.RD	5P20GM103444-05	68,887
(Harcum) Stem Cell-myocyte Electrical Coupling-Center of Biomaterials for Tissue Regeneration (CBTR)	93.RD	5P20GM103444-05	128,806
(Latour) Materials Synthesis and Characterization-Center of Biomaterials for Tissue Regeneration (CBTR)	93.RD	5P20GM103444-05	120,748
(Lee) Enabling Technology for Brain Tissue Regeneration-Center of Biomaterials for Tissue Regeneration (CBTR)	93.RD	5P20GM103444-05	126,603
(Mei) Center of Biomaterials for Tissue Regeneration (CBTR)	93.RD	5P20GM103444-05	143,114
(Nagatomi) Mechanically Guided Urological Tissue Regeneration-Center of Biomaterials for Tissue Regeneration (CBTR)	93.RD	5P20GM103444-05	64,716
(Simionescu) Hyaluronan Based Vascular Grafts-Center of Biomaterials for Tissue Regeneration (CBTR)	93.RD	5P20GM103444-05	103,266
(Vertegel) Stem Cell-myocyte Electrical Coupling-Center of Biomaterials for Tissue Regeneration (CBTR)	93.RD	5P20GM103444-05	64,330
(Webb) Biomaterials for Guided Neural Regeneration-Center of Biomaterials for Tissue Regeneration (CBTR)	93.RD	5P20GM103444-05	55,355
A Multi-Level, Cohort-Sequential Study of Rural Adolescent Dating Violence Victimization and Perpetration	93.RD	5R01HD067505-03	437,955
Adaptive Wavefront Generation and Correction for Super-high Resolution Microscopy	93.RD	7R21GM104683-02	113,010
Avian Middle Ear Development	93.RD	5R01DC009236-05	52,652
Biomechanical Characterization and Modeling of Human TMJ Disc - Fellowship for Gregory John Wright	93.RD	1F31DE023482-01A1	42,793
Biphasic Intervertebral Disc Regeneration using Biomimetic Scaffolds - Benjamin Whatley	93.RD	5F31AG040929-02	5,365
Cardiac-Cell Mechanics at the Single-Cell Level: Properties & Interactions	93.RD	5K25HL092228-04	156,417
Center of Biomaterials for Tissue Regeneration (CBTR)	93.RD	2P20GM103444-06	739,819
Controlling Fatty Acid Synthesis in African Trypanosomes	93.RD	3R15AI081207-01A1S1	91
DelPhi: Software for Electrostatic Modeling of Biomolecules	93.RD	5R01GM093937-04	431,191
Development of Scar-Inhibiting Compliant Tissue Adhesive	93.RD	5R21EB008785-02	36,933
Does Arsenic Target Border Specific Cells During Embryogenesis?	93.RD	5R03ES023065-02	63,036
Elastin-derived Scaffolds for Tissue Engineered Small Diameter Vascular Grafts	93.RD	5R03TW008941-02	55,555
Epidemiology of Sexual Violence: A Trajectory-Based Approach (supplement grant)	93.RD	3R15HD065568-01S1	401
GAGs: Function and Fixation in Bioprosthetic Heart Valves	93.RD	5R01HL070969-08	17,722
High-Performance Membrane Chromatography for Protein Purification	93.RD	1R15GM094676-01	124,838
Integrating Biomechanics & Cell Biology to Understand TMJ Pathology	93.RD	5R01DE021134-02 revised	312,711
Investigating Mechanism of Intracellular Rotational Transport with Optical T	93.RD	1R15EB014560-01A1	72,260
Investigation of Effective Training of "promotoras" in Oral Rehydration Therapy	93.RD	1R03NR013228-01A1	79,725
Label Free RF Imaging of Cell Membrane Heterogeneity in Liquid	93.RD	5K25GM100480-02	116,469
Naturally Occurring Dog Model for Juvenile Dermatomyositis	93.RD	1R15AR062868-01A1	57,110
Nutrient Sensing and Hexokinases in T. brucei	93.RD	2R15AI075326-02 revised	89,939
pH and Glucose Sensing in Trypanosoma Brucei Glycosomes	93.RD	1R21AI105656-01A1	110,994

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RESEARCH AND DEVELOPMENT CLUSTER, Continued			
Department of Health and Human Services, continued			
Role of Mei5-Sae3 in Meiotic Homologous Recombination	93.RD	5R01GM098510-03	257,367
Stress Induced Control of Protein Translation in Entamoeba Histolytica	93.RD	1R03AI107950-01A1	12,543
The Role of CAR and PXR in Gender Predominant P450 Expression and Induction	93.RD	2R15ES017321-02	137,806
Tissue Engineered Aortic Heart Valves: Scaffolds & Stem Cells	93.RD	5R01HL093399-04	283,892
Tissue Engineered Repair of Cranial Facial Muscle	93.RD	5F31DE022224-02	42,392
Trans-generational Impact of Maternal Obesity and Diabetes on Health Disparities	93.RD	5R01MD004251-02	5,147
Undergraduate Education and Device Innovation Through Clinical and Translational	93.RD	1R25EB016589-01A1	12,000
Xanthine DNA Glycosylase in Mammalian Systems	93.RD	1R15GM090141-01	32,955
Pass-through programs from:			
Bite Technologies, LLC			
Assessing the Bite Counter as a Tool for Food Intake Monitoring: Phase II	93.RD	CU-02	41,146
BotaniPharm, LLC			
Development of Research Grade Goldenseal Phase II	93.RD	CU09-01-11	5,000
Cell and Tissue Systems, Incorporated			
Cartilage Storage Solution for Chondrocyte Viability and Biomaterial Preservation	93.RD	1R43AR064033-01	43,109
Chesterfield County Coordinating Council			
Drug Free Chesterfield	93.RD	SP13611	19,035
Children's Hospital Boston			
Novel Angiogenesis Inhibitors Targeting the Anthrax Toxin Inhibitors	93.RD	PO# 0000461506 / 70855	214
Novel Angiogenesis Inhibitors Targeting the Anthrax Toxin Inhibitors	93.RD	PO#0000461505 / 76953	14,750
Greenville Health System			
Evaluation Birth and Maternal Outcomes of South Carolina Centering Pregnancy Expansion Project	93.RD	A201510666A	14,283
Indiana University			
ARRA - IN Challenge Grant Supplemental (Challenge Category #4)	93.RD	PO # 1290467	40,525
Medical University of South Carolina			
Delaware CTR Program: A Virtual Environment for Stroke Rehabilitation	93.RD	MUSC14-022	11,075
Methods for Retrospective Multi-Site Research	93.RD	MUSC12-046	62,331
Missouri University of Science and Technology			
Development of a Novel Multi-functional Single Cell Analyzer	93.RD	00044240-01	47,426
NUBAD, LLC.			
1RA Rapid Assay for RNA Targeted Drugs	93.RD	N08-29-2011	7,340
Targeting RNA Conformation for Drug Development	93.RD	NUBAD1R41GM100607-01	105,359
A Rapid Assay for RNA Targeted Drugs	93.RD	UNKNOWN	37,810
Rutgers, The State University of New Jersey			
RESBIO: The Technology Resource for Polymeric Biomaterials	93.RD	S1865677/ 5000/ 435822/ 10578	106,531
RESBIO: The Technology Resource for Polymeric Biomaterials	93.RD	UNKNOWN	8,219
South Carolina Department of Agriculture			
South Carolina Farm to School Evaluation	93.RD	P16010CPPW11/ FR #4000028282	15,530
University of Medicine and Dentistry of New Jersey			
Mechanisms of Myocardial Ischemia and Reperfusion	93.RD	NA UMDNJ PI: Dorothy Vatner	(18,918)
University of South Carolina			
Palmetto State Geriatric Education Center	93.RD	PO#51836 (18190-FJ20)/ 13-2240	1
Palmetto State Geriatric Education Center	93.RD	PO#81954(18190-FJ27)/14-2589 PO#51773(11500-FA33)/ 13-2246	18,174
South Carolina Cancer Disparities Community Network II (Community Core-Year 3)	93.RD	22050-Z163	5,022
South Carolina IDEa Networks of Biomedical Research Excellence (SC INBRE)	93.RD	22050-Z172/PO#81534	(841)
South Carolina IDEa Networks of Biomedical Research Excellence (SC INBRE)	93.RD		177,985
University of Texas Austin			
A Novel Approach for the Design and Development of Valvular Replacement Biomaterials	93.RD	UTA12-000570	98,067
Widmeyer Communications			
Phase V Option Year 1 HRSA's Bullying Prevention Campaign	93.RD	None	17,751
Phase V, Option Year II of HRSA's Bullying Prevention Campaign	93.RD	None	56,686
Total Department of Health and Human Services			5,780,325

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RESEARCH AND DEVELOPMENT CLUSTER, Continued			
Department of Homeland Security			
Pass-through programs from:			
Clemson University Research Foundation			
Nuclear Forensics Junior Faculty Award Program-DHS	97.RD	12-2147	56,414
Federal Alliance for Safe Homes			
FLASH - ReScU	97.RD	2013000770 ReScU	739
FLASH-Building Code Framework	97.RD	2013000770 Bldg Code	8,574
Indiana University			
Developing Frameworks to Address Issues in Privacy	97.RD	BL-404718-CU (PO# 1311540)	5,323
Medical University of South Carolina			
Nuclear Forensics Education Award Program (NFEAP)	97.RD	MUSC12-104	107,231
University of South Carolina			
Coupling Experiments and Atomistic Modeling to Characterize Actinide Oxides in Support of Nuclear Forensics	97.RD	14-2646/17110 FA45 PO#82368	8,549
Total Department of Homeland Security			<u>186,830</u>
Agency for International Development			
Pass-through programs from:			
Virginia Polytechnic Institute			
Building Local Capacity in IPM Solutions	98.RD	451071-19244	292,823
Ecologically-Based Partic IPM-SE Asia	98.RD	425976-19244	319,510
Total Agency for International Development			<u>612,333</u>
Central Intelligence Agency			
Ear Feature Analysis, Extraction Tools, and Classification for Improved Recognition	99.RD	2011-11071400004	100,769
Total Central Intelligence Agency			<u>100,769</u>
Total Research and Development Cluster			<u>50,950,369</u>
STUDENT FINANCIAL ASSISTANCE CLUSTER			
Department of Education			
Federal Supplemental Educational Opportunity Grants	84.007	UNKNOWN	194,921
Federal Work-Study Program	84.033	UNKNOWN	538,418
Federal Work-Study Program - Federal Job Location and Development	84.033	UNKNOWN	50,802
Federal Perkins Loan Program - Capital Contributions	84.038	UNKNOWN	1,193,272
Federal Pell Grant Program	84.063	UNKNOWN	12,894,517
Federal Direct Student Loans	84.268	UNKNOWN	86,896,107
Total Department of Education			<u>101,768,037</u>
Total Student Financial Assistance Cluster			<u>101,768,037</u>
SNAP CLUSTER			
Department of Agriculture			
Pass-through programs from:			
South Carolina Department of Social Services			
SNAP Outreach Community Partnership Program	10.561	5000013157	121,006
SNAP Outreach Community Partnership Program	10.561	4400007572	109,091
Supplemental Nutrition Assistance Program (SNAP-ED) for Clemson University	10.561	5000013900	119,072
Supplemental Nutrition Assistance Program (SNAP-ED) for Clemson University	10.561	None	19,615
Supplemental Nutrition Assistance Program Employment and Training (SNAP E&T)	10.561	Task Order #2	5,423
Total Department of Agriculture			<u>374,207</u>
Total SNAP Cluster			<u>374,207</u>

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HIGHWAY PLANNING AND CONSTRUCTION CLUSTER			
Department of Transportation			
Pass-through programs from:			
South Carolina Department of Transportation			
Transportation Technology Transfer Service (T3S)	20.205	1570; Proj No. 88L56E2013013	205,257
Transportation Technology Transfer Service (T3S)	20.205	1630; Proj No. 88L56EP026860	<u>215,250</u>
Total Department of Transportation			<u>420,507</u>
Total Highway Planning and Construction Cluster			<u>420,507</u>
SPECIAL EDUCATION CLUSTER			
Department of Education			
Pass-through programs from:			
South Carolina Department of Education			
Project CREATE: Center for ReEducation and Advancement of Teachers in Special Education	84.027	13CO302-01	611
Project CREATE: Center for ReEducation and Advancement of Teachers in Special Education	84.027	14CO302-01	<u>15,035</u>
Total Department of Education			<u>15,646</u>
Total Special Education Cluster			<u>15,646</u>
OTHER PROGRAMS			
Department of Agriculture			
CEAH-Disease Spread Modeling Data Deidentification Support	10.UNK	13-9208-0328-CA	26,129
NAHLN-LIMS Integration Consulting	10.UNK	13-9419-0095	60,108
The Planning for Growth and Open Space Conservation Webinar Series	10.UNK	13-CS-11083150-028	13,945
USDA Forest Service Recreation, Heritage and Volunteer Resources	10.UNK	08-CR-11132424-147	5,500
USDA Forest Service: Francis Marion and Sumter National Forests Participating Agreement with Clemson University and College of Charleston	10.UNK	13-PA-11081209-007	36,475
Animal Disease Traceability	10.025	13-9645-1175CA	94,103
Animal Disease Traceability	10.025	14-9745-1175-CA	941
Animal Health Surveillance and Response Activities	10.025	14-9745-1276-CA	12,084
Building Screening Capacity for Plant Pathogenic Phytoplasms for the CAPS Program	10.025	13-8130-0242-CA	20,587
CAPS - Tier 1 and Pests of National Concern	10.025	13-8245-0380-CA	57,163
CAPS - Tier 1 and Pests of National Concern	10.025	14-8245-0380-CA	40,272
Cooperative Pesticide Recordkeeping Program	10.025	12-25-A-5700	29,709
Emerald Ash Borer National Survey	10.025	13-8245-0648-CA	18,674
Emerald Ash Borer National Survey	10.025	14-8245-0648-CA	21,725
Farm Bill - Junior Invasives Inspectors	10.025	13-8245-0907-CA	19,715
Farm Bill - Stone Fruit Survey	10.025	13-8245-0891- CA	13,968
Farm Bill Honey Bee Survey	10.025	12-8245-0829-CA	8,639
Farm Bill- Honey Bee Survey	10.025	13-8245-0829-CA	12,132
Farm Bill Junior Invasive Inspectors	10.025	12-8245-0907-CA	29,192
Farm Bill Stone Fruit Commodity Survey	10.025	12-8245-0891-CA	14,408
Farm Bill Thousand Cankers Survey	10.025	14-8245-0964-CA	2,247
Farm Bill-Thousand Cankers Survey	10.025	13-8245-0964-CA	11,835
Imported Fire Ant	10.025	13-8245-0178-CA	24,696
Imported Fire Ant	10.025	14-8245-0178-CA	26,967

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OTHER PROGRAMS, Continued			
Department of Agriculture, continued			
Maintenance of Membership Laboratory Requirements (NAHLN Member Lab Assistance)	10.025	13-9419-0164	50,875
NAHLN LIMS Integration	10.025	14-9419-0095-CA	1,762
National Surveillance and Response for Animal Health Activities	10.025	13-9645-1276-CA	249,627
Phytophthora ramorum Farm Bill National Nursery Survey	10.025	12-8245-0830-CA	9,234
Slow Sand Filtration System for P. ramorum Phase 3	10.025	13-8245-0794-CA	14,368
Witchweed	10.025	13-8245-0028-CA	13,097
Witchweed	10.025	14-8245-0028-CA	19
Bundling of Culinology, Nutrition and Packaging in Undergraduate Applied Niche Research	10.217	2012-70003-19969	44,282
Technical College Scholars for Food Science Careers	10.220	2012-38413-19411	9,585
The Bioenergy and I95 Rural Economic Development Summit	10.310	2012-67009-20002	35,188
Building Entrepreneurial, Business Management and Land Stewardship Capacity for South Carolina New and Beginning Farmers	10.311	2010-49400-21735	132,909
South Carolina Meat-Poultry Inspection Department - All Other	10.475	UNKNOWN	208,110
South Carolina Meat-Poultry Inspection Department - Compliance	10.475	UNKNOWN	80,957
South Carolina Meat-Poultry Inspection Department - Cross Utilization	10.475	UNKNOWN	154,255
South Carolina Meat-Poultry Inspection Department - In-Plant	10.475	UNKNOWN	799,875
South Carolina Meat-Poultry Inspection Department - Laboratory	10.475	UNKNOWN	15,289
South Carolina Meat-Poultry Inspection Department (All Other)	10.475	BASE13 (12-37-A307)	72,710
South Carolina Meat-Poultry Inspection Department (Compliance)	10.475	BASE13 (12-37-A307)	29,311
South Carolina Meat-Poultry Inspection Department (Cross Utilization)	10.475	Cross Util 12-37-A-427	53,838
South Carolina Meat-Poultry Inspection Department (In-Plant)	10.475	BASE13 (12-37-A307)	263,775
South Carolina Meat-Poultry Inspection Department (Laboratory)	10.475	BASE13 (12-37-A307)	3,837
South Carolina Meat-Poultry Inspection Department (PHDCIS)	10.475	FAIM13	1,680
South Carolina Meat-Poultry Inspection Department (PHDCIS/FAIM14)	10.475	FAIM14 (12-37-A307)	3,613
A Coordinated Extension IPM Training Program for South Carolina to Address Stakeholder Needs in Key Commodities	10.500	2010-41534-21538	80,298
A Coordinated Program of Extension IPM Training in South Carolina to Advance Stakeholder Adoption in Key Commodities	10.500	2013-41534-21058	200,268
Clemson Sustainable Community Project	10.500	2013-41520-21027	50,218
Cooperative Extension Service - Smith Lever	10.500	UNKNOWN	6,708,245
Expanded Health Coaches for Hypertension Control	10.500	2012-46100-20122	117,039
South Carolina Pesticide Safety Education Program	10.500	2012-48679-20234	2,363
Sustainable Agriculture Research and Education Professional Development Program	10.500	2012-47001-19735	734
Web Based Nutrition Education and Evaluation Reporting System (webNEERS)	10.500	2012-41510-20085	180,154
Creation of South Carolina MarketMaker Website	10.912	68-4639-12-0016	575
Demonstration of Innovative Interseeding Technology for Crop Rotations to Enhance Soil Properties and Reduce Energy Consumption and Pest Occurrence While Optimizing Farm Profits	10.912	69-3A75-12-212	8,179
Demonstration of Innovative Water Conservation Technologies to Enhance Resilience to Drought While Optimizing Farm Profits	10.912	69-3A75-13-88	116,405
Pass-through programs from:			
South Carolina Forestry Commission			
Cogongrass Detection, Eradication & Education and Forest Pests Detection & Education Project	10.UNK	None	19,397
Cogongrass Detection, Eradication and Education Project	10.UNK	None	16,136
South Carolina Department of Agriculture			
Canning Coaches for Safe Home Preservation of Locally Grown Specialty Crops	10.170	12-25-B-1253	396
North Carolina State University			
Helping Southern Strawberry Growers Control Gray Mold in Light of Widespread Fungicide Resistance	10.200	SRSFC 2013 E-01	5,000
North Carolina State University			
Quantifying the Multiplier Effect: What Sustainable Local Food Systems Can Mean to Local Communities	10.215	2012-1136-01	291

Clemson University, South Carolina

Schedule of Expenditures of Federal Awards

For the year ending June 30, 2014

Federal Grantor/Pass-through Grantor/Program Title	Federal CFDA Number	Grantor's/Pass-through Grantor's Number	Expenditures
OTHER PROGRAMS, Continued			
Department of Agriculture, continued			
Pass-through programs, continued:			
University of Florida			
Educating and Training Future Farmers, Researchers and Extension Personnel in Sustainable Agriculture (Clemson subcontract with the University of Florida)	10.215	UF10245	6,144
University of Georgia			
Implement Plan of Work for the Southern Region Sustainable Agriculture Research and Education Professional Development (PDP) Program	10.215	RE675-116/4892336	94
Sustainable Agriculture Research & Education (SARE) Program	10.215	RD309-122/4940046	2,444
Sustainable Agriculture Research & Education (SARE) Program - CH 1	10.215	RD309-125/4940966	15,530
Michigan State University			
Food Borne Norovirus in Elder Care Facilities: An Integrated Approach to Prevention and Control	10.303	61-4299CU	6,041
University of Georgia			
Enhancing the Safety of Locally Grown Produce Through Research and Extension	10.303	RE256-119/4690768	1,921
National Center for Home Food Processing and Preservation	10.303	RE581-468/4893626	3,560
University of Florida			
Southern Plant Diagnostic Network	10.304	UFDSP00010248 (formerly UF12230)	19,407
Purdue University			
Stronger Economies Together: USDA RD Cooperative Agreement RBS-10-39	10.350	8000058198	1,556
Kansas State University			
2014 4-H Military Partnership Grant	10.500	S14070	5,570
2014 DoD Deployment Support Camp Grant	10.500	S14126	11,732
4-H Air Force Military Partnership Project	10.500	S13181	2,950
4-H/Army Youth Development Project-KS, 2009 OMK Kids Camp Initiative	10.500	S09169	10
Military 4-H Club Grant - "Children, Youth and Families at Risk 4-H Military Partnership Program"	10.500	S13066	16,221
South Carolina OMK Local/Regional Support Network (L/RSN) - Darlington Area	10.500	S12158.02	504
South Carolina OMK Local/Regional Support Network (L/RSN) - GLNS Region	10.500	S12109.02	3,159
Purdue University			
DOD/USDA Extension Military Partnership overall Leadership	10.500	8000059377	41,941
Military Community Family and Youth Extension Program	10.500	8000054851	110,715
University of Georgia			
Developing Mobile Applications Using Social Media for the Southeast Cattle Advisor	10.500	RE684-168/4943546	3,287
Implement Plan of Work for the Southern Region Sustainable Agriculture Research & Education Professional Development (PDP) Program	10.500	RE675-167/4941476	14,735
Sustainable Agriculture Research & Education (SARE) Professional Development Program CH 3	10.500	RE675-171/4944706	12,521
Total Department of Agriculture			<u>10,635,150</u>
Department of Commerce			
Pass-through programs from:			
South Carolina Sea Grant Consortium			
Coastal and Marine Recreation and Tourism Outreach Partnership: SCSGC/Clemson PRTM - Year 4	11.417	M437-A/E-1e Yr. 4	34,057
Total Department of Commerce			<u>34,057</u>
Department of Defense			
South Carolina Operation: Military Kids (OMK)	12.UNK	NAFBA1-13-M-0190	21,621
South Carolina Operation: Military Kids (OMK)	12.UNK	NAFBA1-13-M-0339	61,382
Total Department of Defense			<u>83,003</u>

Clemson University, South Carolina
Schedule of Expenditures of Federal Awards
For the year ending June 30, 2014

Federal Grantor/Pass-through Grantor/Program Title	Federal CFDA Number	Grantor's/Pass-through Grantor's Number	Expenditures
OTHER PROGRAMS, Continued			
Department of the Interior			
Development of Healthy Parks - Healthy People Strategic Action Plan for Hot Springs National Park	15.UNK	P12AC11294	14,890
NWHC Laboratory Informatics Support	15.UNK	(None)	12,320
Akers Mill Point Cloud Scanning and Structural Evaluation	15.945	P13AC00294	<u>36,701</u>
Total Department of the Interior			<u>63,911</u>
Department of Justice			
Pass-through programs from:			
National 4-H Council			
National Mentoring NMPIV (FY13)	16.726	2013-OJJDP-NMPIV-441	58,367
South Carolina Youth Mentoring Program	16.726	2012-OJJDP-NMPIII-340	124,798
National 4-H Council			
York County 4-H Catawba Mentoring Program/Tribal Youth	16.731	Prime# 2011-TY-FX-0031/2011- OJJDP-MNTY-163	<u>(257)</u>
Total Department of Justice			<u>182,908</u>
Department of State			
Pass-through programs from:			
International Research & Exchanges Board			
Clemson University International Leaders in Education Program	19.408	FY14-ILEP-Clemson-01	181,879
Teaching Excellence and Achievement and International Leaders in Education Program (ILEP)	19.408	FY12-ILEP-Clemson-01	<u>(736)</u>
Total Department of State			<u>181,143</u>
Department of Transportation			
Pass-through programs from:			
South Carolina Department of Transportation			
State Work Zone Safety Training Program	20.UNK	PO #369014/377336	271,630
Transportation Technology Transfer Service (T3S)	20.UNK	1522; Proj No. 88L56E2012012	<u>997</u>
Total Department of Transportation			<u>272,627</u>
National Aeronautics and Space Administration			
A Multi-Instrument Study of Electron-Positron Annihilation in the Milky Way	43.UNK	NNX09AC80G	<u>29,924</u>
Total National Aeronautics and Space Administration			<u>29,924</u>
National Endowment for the Arts			
Pass-through programs from:			
South Arts			
2013-2014 Southern Circuit Tour of Independent Filmmakers	45.024	None	<u>2,400</u>
Total National Endowment for the Arts			<u>2,400</u>
National Science Foundation			
Collaborative Research: Computational Intelligence Methods for Dynamic Stochastic Optimization of Smart Grid Operation with High Penetration of Renewable Energy	47.041	ECCS-1232070	10,504
Broadening Participation in Visualization (BPViz) Workshop	47.070	ACI-1419415	7,579

Clemson University, South Carolina

Schedule of Expenditures of Federal Awards

For the year ending June 30, 2014

Federal Grantor/Pass-through Grantor/Program Title	Federal CFDA Number	Grantor's/Pass-through Grantor's Number	Expenditures
OTHER PROGRAMS, Continued			
National Science Foundation, continued			
EAGER: The LIT ROOM - A Networked Suite of Architectural-Robotic Artifacts Embedded in the Library for Advancing Literacy in Children	47.070	IIS-1352992	39,782
Clemson University MAT Noyce Scholarship Program for Middle Grades Education	47.076	DUE-0733711	(3,500)
Southeastern Regional Noyce Conference	47.060	DUE-1062155	173,099
A Planning Workshop to Scale Condominium Cluster Model to Condo of Condos	47.080	OCI-1249541	17,339
Pass-through programs from:			
Computing Research Association			
Broadening Participation in Visualization Workshop	47.070	UNKNOWN	<u>4,492</u>
Total National Science Foundation			<u>249,295</u>
Small Business Administration			
Pass-through programs from:			
University of South Carolina			
Small Business Administration Jobs Act	59.UNK	PO#32207L/1-603001-Z-0149	16,453
Small Business Administration 2012 Carry Over Funding	59.037	SBA 2012 Carry Over	39,620
Small Business Development Center - Operating Grant (Federal)	59.037	Federal	<u>392,384</u>
Total Small Business Administration			<u>448,457</u>
Environmental Protection Agency			
2011-2013 Certification and Training Pesticide Programs Cooperative Agreement	66.700	E98463811	59,431
2011-2013 Enforcement Pesticide Programs Cooperative Agreement	66.700	E98463611	109,488
2011-2013 Special Pesticide Programs Cooperative Agreement	66.700	E98463711	103,462
2014-2016 Certification and Training Pesticide Programs Cooperative Agreement	66.700	E-98463814	72,606
2014-2016 Enforcement Pesticide Programs Cooperative Agreement	66.700	E-98463614	97,171
2014-2016 Special Programs Pesticides	66.700	E-98463714	102,892
Pass-through programs from:			
Commonwealth of Virginia			
Animal Waste Analysis for Commonwealth of VA	66.460	319-2011-15-V	31,126
Community Environmental Company (CEC)			
ARRA - Graniteville Mill-Community Development & Improvement Corporation	66.818	2014000366	<u>4,949</u>
Total Environmental Protection Agency			<u>581,125</u>
Department of Energy			
Clemson University 15 Megawatt Hardware-In-the-Loop (HIL) Grid Simulator	81.087	EE0005723	632,055
ARRA - Recovery Act: Clemson University Wind Turbine Drivetrain Test Facility	81.087	EE0003023	<u>537,307</u>
Total Department of Energy			<u>1,169,362</u>
Department of Education			
The Consortium for Small and Medium-size Enterprises and Entrepreneurship Education (SMEEE)	84.116	P116J080038-11	13,596
Transatlantic Double Degree in International Business	84.116	P116J090006	40,000
Special Education-Personnel Preparation to Improve Services and Results for Children with Disabilities.	84.325	H325D080056-11	88,463
National Dropout Prevention Center for Students with Disabilities	84.326	H326W080003-12	637,611
Pass-through programs from:			
South Carolina Department of Education			
Agricultural Education Professional Development	84.UNK	4000028303	58,999
South Carolina Department of Education			
Cherry Grove FFA Camp Caretaker	84.048	14VA302-42	9,876
Iowa Department of Education			
Best Practices in Bullying Prevention and Intervention and Support for Provocative Targets of Bullying	84.184	030714	3,999

Clemson University, South Carolina
Schedule of Expenditures of Federal Awards
For the year ending June 30, 2014

Federal Grantor/Pass-through Grantor/Program Title	Federal CFDA Number	Grantor's/Pass-through Grantor's Number	Expenditures
OTHER PROGRAMS, Continued			
Department of Education, continued			
Pass-through programs, continued:			
Communities In Schools of Chester County			
21st Century Community Learning Centers Grant	84.287	None	262
South Carolina Department of Education			
21st CCLC Bridge Project at Cedar Grove Elementary School, LaFrance Elementary School, Pendleton Elementary School, and Townville Elementary School	84.287	13CL302-92	7,039
21st CCLC Bridge Project at Spearman Elementary School and West Pelzer Elementary School	84.287	13CL302-90	7,639
21st Century Community Learning Center (Youth Development Center and Youth Challenge Academy)	84.287	13CL302-03	75,213
21st Century Community Learning Centers - GoalPOST II	84.287	13CL302-02	3,792
21st Century Community Learning Centers - GoalPOST III	84.287	13CL302-20	2,983
21st Century Community Learning Centers for Charleston County Schools (A.I.M. Achieve, Inspire, Motivate)	84.287	13CL302-21	7,469
21st Century Community Learning Grant: Cedar Grove Elementary School, LaFrance Elementary School, Pendleton Elementary School and Townville Elementary School -GoalPOST II (Goal-oriented Performance in Out of School Time)	84.287	14CL302-02	208,005
21st Century Community Learning Grant: Spearman Elementary School & West Pelzer School-GoalPOST III (Goal-Oriented Performance in Out of School Time)	84.287	14CL302-20	133,056
21st Century Community Learning Grant: St. James-Santee Elementary School and Lincoln Middle-High School (Charleston County School District - A.I.M. Achieve, Inspire, Motivate)	84.287	14CL302-21	117,104
South Carolina Department of Education			
Inquiry Based Learning: A Companion Course for the Biology End-of-Course Exam Learning Mathematics and Science with Technology (LMaST)	84.366	13MS302	51,205
National Writing Project			
2014-2016 SEED Teacher Leadership Development Grant	84.367	01-SC11-SEED2012	4,888
SEED Grant 2 Brook Glenn Elementary	84.367	01-SC11-SEED2012	19,500
SEED Grant 2 LaFrance Elementary	84.367	01-SC11-SEED2012	19,484
SEED Grant 2 Welcome Elementary	84.367	01-SC11-SEED2012	19,840
Upstate Writing Project Teacher Leadership Development SEED Grant	84.367	01-SC11-SEED2012	3,263
South Carolina Commission on Higher Education			
Project RES: Reform-Based Environmental Science - FY 2012-13	84.367	ITQ 2012-13	13,905
Project RES: Reform-Based Environmental Science - FY 2013-14	84.367	ITQ 2013-14	59,670
The Ohio State University			
ARRA - Reading Recovery: Scaling Up What Works	84.396	60029187 (PO# RF01229125)	273,691
National Writing Project			
Investing in Innovation (i3): NWP College-Ready Writers Program - Florence 02	84.411	01-SC11-i32013	75,039
Investing in Innovation (i3): NWP College-Ready Writers Program - Greenwood 51	84.411	01-SC11-i32013	73,365
Investing in innovation (i3): NWP College-Ready Writers Program - Union	84.411	01-SC11-i32013	111,886
Total Department of Education			<u>2,170,901</u>
Department of Health and Human Services			
Pass-through programs from:			
Children's Trust of South Carolina			
Comprehensive Wellness Collaborative to Promote Academic Success in Young Parents	93.500	S-OAH-2014-3-1	19,663
Live Well Greenville-YMCA of Greenville			
Momentum Bike Clubs-Community Transportation Grant	93.737	Prime # 1H75DP004224-01	32,033
Total Department of Health and Human Services			<u>51,696</u>

Clemson University, South Carolina
Schedule of Expenditures of Federal Awards
For the year ending June 30, 2014

Federal Grantor/Pass-through Grantor/Program Title	Federal CFDA Number	Grantor's/Pass-through Grantor's Number	Expenditures
OTHER PROGRAMS, Continued			
Department of Homeland Security			
Pass-through programs from:			
South Carolina Law Enforcement Division			
Critical Infrastructure Equipment Enhancements	97.067	10SHSP44	<u>30,273</u>
Total Department of Homeland Security			<u>30,273</u>
Agency for International Development			
Pass-through programs from:			
Global Camps Africa			
Youth Development Training program in Johannesburg, South Africa	98.UNK	027C0086	<u>4,174</u>
Total Agency for International Development			<u>4,174</u>
Total Other Programs			<u>16,190,406</u>
Total Federal Expenditures			<u>\$ 169,719,172</u>

Clemson University**Clemson, South Carolina*****Notes to the Schedule of Expenditures of Federal Awards******June 30, 2014***

Note 1. Basis of Presentation

The accompanying schedule of expenditures of federal awards (the schedule) includes the federal grant activity of Clemson University (the University) and is presented on the accrual basis of accounting. The information in the schedule is presented in accordance with the requirements of Office of Management and Budget (OMB) Circular A-133, *Audits of States, Local Governments, and Non-Profit Organizations*. Therefore, some amounts presented in the schedule may differ from amounts presented in, or used in the preparation of, the basic financial statements.

Note 2. Summary of Significant Accounting Policies for Federal Award Expenditures

Expenditures for student financial aid programs include the federal share of students' Federal Supplemental Educational Opportunity Grant (FSEOG) program grants and Federal Work Study (FWS) program earnings, certain other federal financial aid for students and administrative cost allowances, where applicable.

Expenditures for federal research and development programs are determined using the cost accounting principles and procedures set forth in OMB Circular A-21, *Cost Principles for Educational Institutions*. Under these cost principles, certain expenditures are not allowable or are limited as to reimbursement.

Expenditures for nonfinancial aid awards include indirect costs, related primarily to facilities operation and maintenance and general, divisional and departmental administrative services, which are allocated to direct cost objectives (including federal awards) based on negotiated formulas commonly referred to as facilities and administrative cost rates. Facilities and administrative costs allocated to such awards for the year ended June 30, 2014, were based on predetermined fixed rates negotiated with the University's cognizant federal agencies.

Note 3. Federal Perkins Loan Program (CFDA Number 84.038)

The Federal Perkins Loan Program is administered directly by the University and balances and transactions relating to the program are included in the University's financial statements. The balance of loans outstanding under the Federal Perkins Loan Program was \$8,458,028 as of June 30, 2014.

Note 4. Matching

Under the FWS program, the University matched \$175,185 in total compensation for the year ended June 30, 2014 in addition to the federal share of expenditures in the accompanying schedule of expenditures of federal awards.

Under the FSEOG program, the University matched \$1,467,971 in funds awarded to students for the year ended June 30, 2014, in addition to the federal share of expenditures in the accompanying schedule of expenditures of federal awards.

Clemson University**Clemson, South Carolina***Notes to the Schedule of Expenditures of Federal Awards**June 30, 2014*

Note 5. Contingencies

The University receives funds under various federal grant programs and such awards are to be expended in accordance with the provisions of the various grants. Compliance with the grants is subject to audit by various government agencies which may impose sanctions in the event of non-compliance. Management believes that they have complied with all aspects of the various grant provisions and the results of adjustments, if any, relating to such audits would not have any material financial impact.

Note 6. Subrecipients

	<u>Federal CFDA Number</u>	<u>Amount Provided to Subrecipients</u>
Department of Agriculture		
	10.UNK	\$ 26,361
	10.170	19,770
	10.200	18,947
	10.206	25,194
	10.215	64,474
	10.220	9,633
	10.303	172,915
	10.309	2,704
	10.311	25,949
	10.561	<u>198,296</u>
Total Department of Agriculture		<u>\$ 564,243</u>
Department of Commerce		
	11.417	\$ <u>9,804</u>
Total Department of Commerce		<u>\$ 9,804</u>
Department of Defense		
	12.UNK	\$ 35,012
	12.300	9,265
	12.351	67,450
	12.420	103,227
	12.431	64,384
	12.800	<u>49,855</u>
Total Department of Defense		<u>\$ 329,193</u>
Department of State		
	19.345	\$ <u>73,996</u>
Total Department of State		<u>\$ 73,996</u>

Clemson University**Clemson, South Carolina***Notes to the Schedule of Expenditures of Federal Awards**June 30, 2014*

Note 6. Subrecipients, Continued

	Federal CFDA Number	Amount Provided to Subrecipients
Department of Transportation		
	20.UNK	\$ 45,361
	20.205	118
	20.761	<u>25,497</u>
Total Department of Transportation		<u>\$ 70,976</u>
National Aeronautics and Space Administration		
	43.UNK	\$ 7,500
	43.001	<u>19,752</u>
Total National Aeronautics and Space Administration		<u>\$ 27,252</u>
Institute of Museum and Library Services		
	45.312	\$ <u>31,527</u>
Total Institute of Museum and Library Services		<u>\$ 31,527</u>
National Science Foundation		
	47.041	\$ 483,293
	47.049	84,788
	47.050	147,738
	47.070	236,746
	47.074	90,862
	47.076	168,437
	47.081	4,956
	47.082	<u>3,702</u>
Total National Science Foundation		<u>\$ 1,220,522</u>
Environmental Protection Agency		
	66.509	\$ <u>61,993</u>
Total Environmental Protection Agency		<u>\$ 61,993</u>
Department of Energy		
	81.UNK	\$ 250,538
	81.049	206,055
	81.057	22,351
	81.089	81,184
	81.113	89,707
	81.121	<u>18,438</u>
Total Department of Energy		<u>\$ 668,273</u>

Clemson University
Clemson, South Carolina
Notes to the Schedule of Expenditures of Federal Awards
June 30, 2014

Note 6. Subrecipients, Continued

	<u>Federal CFDA Number</u>	<u>Amount Provided to Subrecipients</u>
Department of Education		
	84.287	\$ 144,008
Total Department of Education		<u>\$ 144,008</u>
Election Assistance Commission		
	90.403	\$ 1,534,235
Total Election Assistance Commission		<u>\$ 1,534,235</u>
Department of Health and Human Services		
	93.121	\$ 24,966
	93.361	20,731
	93.520	1,727
	93.837	92,177
	93.859	202,723
	93.865	128,912
	93.989	44,154
Total Department of Health and Human Services		<u>\$ 515,390</u>
Agency for International Development		
	98.001	\$ 386,464
Total Agency for International Development		<u>386,464</u>
Total Provided to Subrecipients		<u>\$ 5,637,876</u>



**Independent Auditor's 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***

Members of the Board of Trustees
Clemson University
Clemson, South Carolina

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 financial statements of the business-type activities and discretely presented component units of Clemson University (the University), as of and for the year ended June 30, 2014, and the related notes to the financial statements, which collectively comprise the University's basic financial statements, and have issued our report thereon dated October 1, 2014. Our report includes a reference to other auditors who audited the financial statements of Clemson University Research Foundation and Clemson University Land Stewardship Foundation, as described in our report on Clemson University's financial statements. This report does not include the results of other auditors' testing of internal control over financial reporting or compliance and other matters that are reported on separately by those auditors. The financial statements of Clemson University Land Stewardship Foundation were not audited in accordance with Government Auditing Standards.

Internal Control over Financial Reporting

In planning and performing our audit of the 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 opinions on the financial statements, but not for the purpose of expressing an opinion on the effectiveness of the University's internal control. Accordingly, we do not express an opinion on the effectiveness of the University's internal control.

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

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

Compliance and Other Matters

As part of obtaining reasonable assurance about whether the University's financial statements are free from material misstatement, we performed tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements, noncompliance with which could have a direct and material effect on the determination of financial statement amounts. However, providing an opinion on compliance with those provisions was not an objective of our audit, and accordingly, we do not express such an opinion. The results of our tests disclosed no instances of noncompliance or other matters that are required to be reported under *Government Auditing Standards*.

Purpose of this Report

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

A handwritten signature in black ink that reads "Elliott Davis, LLC". The signature is written in a cursive style with a long, sweeping underline.

Greenville, South Carolina
October 1, 2014



**Independent Auditor's Report on Compliance for
Each Major Federal Program; Report on Internal Control Over
Compliance; and Report on the Schedule of Expenditures of
Federal Awards Required by OMB Circular A-133**

Members of the Board of Trustees
Clemson University
Clemson, South Carolina

Report on Compliance for Each Major Federal Program

We have audited Clemson University's (the University) compliance with the types of compliance requirements described in the *OMB Circular A-133 Compliance Supplement* that could have a direct and material effect on each of the University's major federal programs for the year ended June 30, 2014. The University's major federal programs are identified in the summary of auditor's results section of the accompanying schedule of findings and questioned costs.

The University's basic financial statements include the operations of the Clemson University Research Foundation (CURF), a discretely presented component unit, which received \$2,944,910 in federal awards which is not included in the University's schedule for the year ended June 30, 2014. Our audit, described below, did not include the operations of CURF because the discretely presented component unit engaged other auditors to perform an audit in accordance with OMB Circular A-133.

Management's Responsibility

Management is responsible for compliance with the requirements of laws, regulations, contracts, and grants applicable to its federal programs.

Auditor's Responsibility

Our responsibility is to express an opinion on compliance for each of the University's major federal programs based on our audit of the types of compliance requirements referred to above. We conducted our audit of compliance in accordance with auditing standards generally accepted in the United States of America; the standards applicable to financial audits contained in *Government Auditing Standards*, issued by the Comptroller General of the United States; and OMB Circular A-133, *Audits of States, Local Governments, and Non-Profit Organizations*. Those standards and OMB Circular A-133 require that we plan and perform the audit to obtain reasonable assurance about whether noncompliance with the types of compliance requirements referred to above that could have a direct and material effect on a major federal program occurred. An audit includes examining, on a test basis, evidence about the University's compliance with those requirements and performing such other procedures as we considered necessary in the circumstances.

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

Opinion on Each Major Federal Program

In our opinion, the University complied, in all material respects, with the types of compliance requirements referred to above that could have a direct and material effect on each of its major federal programs for the year ended June 30, 2014.

Other Matters

The results of our auditing procedures disclosed instances of noncompliance, which are required to be reported in accordance with OMB Circular A-133 and which are described in the accompanying schedule of findings and questioned costs as items 2014-1 and 2014-2. Our opinion on each major federal program is not modified with respect to these matters.

The University's responses to the noncompliance findings identified in our audit are described in the accompanying schedule of findings and questioned costs. The University's responses were not subjected to the auditing procedures applied in the audit of compliance and, accordingly, we express no opinion on the responses.

Report on Internal Control Over Compliance

Management of the University is responsible for establishing and maintaining effective internal control over compliance with the types of compliance requirements referred to above. In planning and performing our audit of compliance, we considered the University's internal control over compliance with the types of requirements that could have a direct and material effect on each major federal program to determine the auditing procedures that are appropriate in the circumstances for the purpose of expressing an opinion on compliance for each major federal program and to test and report on internal control over compliance in accordance with OMB Circular A-133, but not for the purpose of expressing an opinion on the effectiveness of internal control over compliance. Accordingly, we do not express an opinion on the effectiveness of the University's internal control over compliance.

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

Our consideration of internal control over compliance was for the limited purpose described in the first paragraph of this section and was not designed to identify all deficiencies in internal control over compliance that might be material weaknesses or significant deficiencies and therefore, material weaknesses or significant deficiencies may exist that were not identified. We did not identify any deficiencies in internal control over compliance that we consider to be material weaknesses. However, we identified certain deficiencies in internal control over compliance, as described in the accompanying schedule of findings and questioned costs as items 2014-1 and 2014-2, that we consider to be significant deficiencies.

The University's responses to the internal control over compliance findings identified in our audit are described in the accompanying schedule of findings and questioned costs. The University's responses were not subjected to the auditing procedures applied in the audit of compliance and, accordingly, we express no opinion on the responses.

The purpose of this report on internal control over compliance is solely to describe the scope of our testing of internal control over compliance and the results of that testing based on the requirements of OMB Circular A-133. Accordingly, this report is not suitable for any other purpose.

Report on Schedule of Expenditures of Federal Awards Required by OMB Circular A-133

We have audited the financial statements of the business type activities and discretely presented components of the University, a component unit of the State of South Carolina, as of and for the year ended June 30, 2014, and the related notes to the financial statements, which collectively comprise the University's basic financial statements. We issued our report thereon dated October 1, 2014, which contained unmodified opinions on those financial statements. Our audit was conducted for the purpose of forming opinions on the financial statements that collectively comprise the basic financial statements. The accompanying schedule of expenditures of federal awards is presented for purposes of additional analysis as required by OMB Circular A-133 and is not a required part of the basic financial statements. Such information is the responsibility of management and was derived from and relates directly to the underlying accounting and other records used to prepare the basic financial statements. The information has been subjected to the auditing procedures applied in the audit of the financial statements and certain additional procedures, including comparing and reconciling such information directly to the underlying accounting and other records used to prepare the basic financial statements or to the basic financial statements themselves, and other additional procedures in accordance with auditing standards generally accepted in the United States of America. In our opinion, the schedule of expenditure of federal awards is fairly stated in all material respects in relation to the basic financial statements as a whole.

A handwritten signature in black ink that reads "Elliott Davis, LLC". The signature is written in a cursive, flowing style.

Greenville, South Carolina
October 1, 2014

Clemson University
Clemson, South Carolina
Schedule of Findings and Questioned Costs
For the year ended June 30, 2014

Section I. Summary of Auditor's Results

Financial Statements

Type of auditor's report issued: Unmodified
Internal control over financial reporting:

- Material weakness identified? _____ yes X no
- Significant deficiency identified that is not considered to be a material weakness _____ yes X none reported

Noncompliance material to financial statements noted _____ yes X no

Federal Awards

Internal control over major federal programs:

- Material weakness identified? _____ yes X no
- Significant deficiency identified that is not considered to be a material weakness X yes _____ none reported

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

Any audit findings disclosed that are required to be reported in accordance with Section 510(a) of Circular A-133 X yes _____ no

Identification of major federal programs:

<u>CFDA Numbers</u>	<u>Name of federal program or cluster</u>
84.007; 84.033; 84.038; 84.063 84.268	Student Financial Assistance Cluster
81.087	ARRA: Clemson University Wind Turbine Drivetrain Testing Facility; Clemson University 15 Megawatt Hardware-In-the-Loop (HIL) Grid Simulator
84.396	ARRA: Reading Recovery: Scaling Up What Works
84.411	Investing in Innovation (i3): NWP College-Ready Writers Program

Dollar threshold used to distinguish between Type A and Type B Programs \$3,000,000

Auditee qualified as low-risk auditee? X yes _____ no

Clemson University
Clemson, South Carolina
Schedule of Findings and Questioned Costs
For the year ended June 30, 2014

Section II. Financial Statement Findings

None

Section III. Federal Award Questioned Costs & Findings

Finding 2014-1

Program: CFDA No. 84.268 - Federal Direct Loans; CFDA No. 84.063 - Federal Pell Grant Program

Criteria or Specific Requirement: Per Dear Colleague Letter GEN-04-03 Revised, when students fail to earn a passing grade in any of their classes, an institution must have a procedure for determining whether a Title IV recipient who began attendance during a period completed the period or should be treated as a withdrawal.

Condition: The University did not include all necessary parameters in queries used to identify students who unofficially withdrew and would require Return of Title IV calculations to be performed.

Questioned Costs: \$32,806

Context: During the testing of Return of Title IV funds, the University's Internal Audit Department initially noted one student who should have been treated as an unofficial withdrawal in the fall of 2013, and therefore, should have had a Return of Title IV funds calculation performed. The student had a grade status code of "No Grade". This grade status code was not included in the query run by the Financial Aid Department to identify students who failed all of their classes due to unfamiliarity with administrative software newly implemented in 2014. Because the student was not identified in the query of students with failing grades, no Return of Title IV funds calculation was performed. Upon further examination, it appears there are several grade code options that would equate to a non-passing grade. As a result of the finding, the Financial Aid Department performed a detailed review and identified 141 students who unofficially withdrew according to the Title IV aid regulations. Of these 141 students, nine students were found that did not have a Return calculation performed that should have. Return of Title IV calculations have been performed for these students and questioned costs of \$32,806 have been returned to the Department of Education.

Effect: Return of Title IV calculations were not completed for certain unofficially withdrawn students and costs of \$32,806 are questioned as a result of the finding.

Cause: The query used by Financial Aid to identify students who "failed" any of their classes did not include the grade option of "No Grade." A "No Grade" occurs when a faculty member does not submit a grade for a student. Financial Aid administrators were not aware of the possibility of a student receiving "No Grade".

Recommendation: The Financial Aid Department should review all grade status codes available in the student system and implement policies and procedures to ensure all applicable grade codes are included in the query used to identify students who have unofficially withdrawn.

Section III. Federal Award Questioned Costs & Findings, Continued

View of Responsible
Official and

Corrective Actions: Staff in the Office of Student Financial Aid (SFA) have met with Records and Registrations staff to ensure we have identified all non-passing grades. We have corrected all nine students' calculations discussed above, and returned the affected funds to the required federal program. The total amount returned was \$32,806. The relevant programs have been fixed going forward, and copies of those programs were provided to the Internal Audit Department.

The SFA Director has discussed the "No Grade" issue with the Registrar. Return of Title IV funds regulations require refunds within a specified time period. SFA notifies students of their pending Return of Title IV funds repayment and relies on the students to follow-up with the faculty regarding grade issues if necessary.

Finding 2014-2

Program: CFDA 84.268 – Federal Direct Loans

Criteria or Specific Requirement: 34 CFR 685.304(b)(1) - A school must ensure that exit counseling is conducted with each Direct Subsidized Loan or Direct Unsubsidized Loan borrower and graduate or professional student Direct PLUS Loan borrower shortly before the student borrower ceases at least half-time study at the school.

Condition: The University did not consistently provide exit counseling materials for certain groups of students during the 2013-2014 academic year.

Questioned Costs: None

Context: Several students in the eligibility audit sample who had graduated or withdrawn had not received exit counseling materials. Further examination revealed that exit counseling materials had not been provided to the following groups of students: Fall 2013 - December graduates, Official Withdrawals, Non-returning students; Spring 2014 - Official Withdrawals (mostly sent, but a few withdrawal codes were not included), Non-returning students

Effect: Students did not receive exit counseling materials upon separating from the University.

Cause: The query used by Financial Aid to identify students with Direct Loans who graduated or withdrew did not properly include all necessary withdrawal codes.

Recommendation: The Financial Aid Department should modify and monitor the system procedures to ensure all exiting Federal Direct Loan recipients are identified.

Section III. Federal Award Questioned Costs & Findings, Continued

View of Responsible
Official and

Corrective Actions:

All students affected by this issue have been identified, and the relevant processes fixed going forward. Further, each affected student has been sent a letter explaining the situation and providing them contact information within the Office of Student Financial Aid for any questions they might have. A separate email address for replies regarding this particular situation has been established so that students can bypass the regular communication pipeline.

Clemson University
Clemson, South Carolina
Summary Schedule of Prior Audit Findings
For the year ended June 30, 2014

In accordance with *Government Auditing Standards*, issued by the Comptroller General of the United States, the following is the status of known material findings and recommendations from prior year audits:

Finding 2013-1

Program: CFDA No. 84.396 – ARRA: Reading Recovery: Scaling Up What Works

Condition: The University did not appropriately categorize expenditures in accordance with the grant agreement, resulting in an overstated cost recovery base used to calculate the indirect cost recovery amount.

Current Action

Taken/Current Status: Procedures have been reviewed and updated to ensure appropriate categorization of expenditures and accurate indirect cost recovery amounts. Subsequently, the affected college hired a post-award administrator who is reviewing and reconciling the identification of direct cost expenditures by the department for this program before Grants and Contracts Administration sends the invoice to the sponsor.

The Director of Grants and Contracts Administration is reviewing and approving indirect cost adjustments prepared by Grants and Contracts Administration fiscal managers for the project before invoices are sent to the project sponsor.

Corrective actions were taken during fiscal year 2014 to review the indirect cost recovery amounts and necessary adjustments were made through current year reimbursements requested from the project sponsor.